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L25 Donor To Recipient Matching (DORMAT Score) In Living Donor Liver Transplantation. Pulkit Sethi, Raghavendra Babu, Sudhindran Surendran, Puneet Dhar, Unnikrishnan Gopalakrishnan, Dinesh Balakrishnan, Ramachandran Menon, Amrita Institute Of Medical Sciences, Kochi

L45 ALPPS For Liver Malignancies: First Ever Indian Case Series. Jagadeesh Krishnamurthy, Adithya V Naragund, Basant Mahadevappa, HCG Hospitals, Bangalore

I16 Comparison of Adapted enhanced Recover after Surgery Pathway versus Standard Care following Simple Closure of Perforated Duodenal Ulcer- an Open labeled Randomized Controlled Trial. Subair Mohsina, Muthusami Anitha, Dasarathan Shannugam, Sathasivam Sureshkumar, Pankaj Kundra, T Mahalakshmy, Vikram Kate, JIPMER, Puducherry

C23 A prospective pilot study comparing extralevator versus standard abdominoperineal excision in low rectal cancer. Ramakrishnan Ayloor Seshadri, Nicholas West, Shirley Sundersingh, Cancer Institute (WIA), Chennai and Leeds Institute of Molecular medicine, UK

C37 Combined Relaparoscopy and transanal endoluminal Repair (Hybrid approach) in the management of early postoperative colorectal anastomotic leaks– Technique and Outcomes. Saurabh Bansal, Tao-Wei Kee, Takashi Kato, Sheng Chi Chang, William Tzu-Liang Chen, Abe Fingerhut, Action Medical Institute/Action Cancer Hospital New Delhi, China Medical University Hospital, Taiwan

C34 To Evaluate The Accuracy Of Preoperative Contrast Enhanced MRI In Histopathological Staging Of Rectal Cancer. Kapil Dev Sharma, Amanjeet Singh Arora, Azhar Perwaiz, Adarsh Chaudhary, Medanta The Medicity, Gurugram

Special Mention Poster


P63 Role of promoter hypermethylation and epigenetic silencing of PTEN in periampullary carcinoma. Asgar Firdaus, Sundeepr Singh Saluja, Vaibhav Varshney, Rohit Rathi, Sadhana Sharma, Pramod Kumar Mishra, GB Pant Institute Of Medical Education And Research, Delhi, AIIMS, Patna

P64 Posterior (SMA- first) approach vs. Standard pancreatoduodenectomy in patients with periampullary tumours and pancreatic cancer with special focus on circumferential resection margins and medium term survival outcome: a prospective randomized controlled trial. Hemant Ashok Jain, Prasenjit Das, Sujoy Pal, Nihar Dash, Pramod Garg, Siddharth Gupta, Peush Sahni, AIIMS, New Delhi

O20 Validation of novel genetic alterations identified in esophageal squamous cell carcinoma (ESCC). Arshid Iqbal Qadri, Nizams Institute Of Medical Sciences, Hyderabad


Free oral paper

Oesophagus

O16 Assessment of QoL in relation to the type of reconstruction in complex corrosive strictures of upper GI tract. Abdul Rehman, Madras Medical College, Chennai


O21 Ileocolic artery ligation with delayed ileocolonic conduit improves vascularity of the conduit to be used in corrosive injury esophagus. Yogesh Ashokkumar Bang, Yoganand Dodge, Pradeep R, Gurudu Venkat Rao, AIG Hyderabad

O22 Surgical management of Oesophago-gastric Corrosive injuries- A 13 year experience from a tertiary care centre in South India. Sasank Kalipatnapu, Sam Varghese George, Abraham Vijay Peedikayil, Sudhakar Chandran, Inian Samarasam, Christian Medical College, Vellore

O24 Use of 18F Fluorodeoxyglucose Positron Emission Tomography in assessing the treatment response of Neoadjuvant Chemoradiation/Chemotherapy in locally advanced Oesophageal and Gastrooesophageal junction cancers. Syed Asif, Nikhil Gupta, Shivendra Singh, Rajiv Gandhi Cancer Institute, Delhi

Stomach

S18 Pattern of lymphatic spread in carcinoma stomach and it’s clinical significance. Gandi Vikram, Lakeshore Hospital, Kochi

S20 Expression of cyclin D1 and cyclin E2 in gastric carcinoma. Amit Kumar Tiwari, BHU, Varanasi

S21 Surgical management of peptic ulcer: Where are we? Ashish George, Anand Narayan Singh, Sujay Pal, Nihar Ranjan Dash, Peush Sahni, AIIMS, New Delhi

S24 Operable carcinoma stomach-- Demographics, survival and outcomes. An analysis of 427 patients in a tertiary care Indian hospital. Joshua Franklyn, Sam Varghese George, Myla Yacob, Vijay Abraham, Sudhakar Chandran, Inian Samarasam, Christian Medical College Vellore

S17 Prospective evaluation of the diagnostic performance of a new Helicobacter pylori stool antigen immunochromatographic test. Mohsina Subair, Sahoo Kumar Ashok, Srinivasa Sanjeev, Bhosale Namrata, Cherial Anna Anchu, K Madhuvanthi, Mandaal Jharna, Sathasivam Sureshkumar, T Mahalakshmy, Vikram Kate, JIPMER, Puducherry

S28 Palliative gastro-jejunostomy for carcinoma stomach-- is it worthwhile? Selvakumar Balakrishnan, Rajneesh Kumar Singh, Anand Prakash, Anu Behari, Ashok Kumar, Vinay Kumar Kapoor, Rajan Saxena, SGPGIMS, Lucknow

Colorectal

C25 Fate of retained rectal stump after subtotal colectomy for ulcerative colitis. Saurav Sharma, Amanjeet Singh, Azhar Perwaiz, Adarsh Chaudhary, Medanta Hospital, Gurugram

C27 Early Vs Delayed Closure Of Temporary Loop Ileostomy After Colorectal Surgeries: A Prospective Randomized Study. Varun Dassari, Ven Vektamaram Reddy, Gavini Sivaramakrishna, C Chandramaliteswaran, Munusuru Brahmeswara Rao, Annareddy Dinakar Reddy, Sri Venkateswara Institute of Medical Sciences, Tirupati


C31 Laparoscopic Anterior Resection using Single Stapling Technique (SST) for Colorectal Anastomosis with Natural Orifice Specimen Extraction (NOSE)-Technique, Feasibility and Outcomes. Saurabh Bansal, Sheng-Chi Chang, Tao-Wei Ke, Takashi Kato, William Chen, Abe Fingerhut, Action cancer hospital New Delhi, China Medical University Hospital, Taiwan

C35 End to End (Double stapled) Versus End to Side (Triple Stapled) Colorectal Anastomosis Following Anterior Resection for Rectal Cancer. Venkat Rami Reddy, Sri Venkateswara Institute of Medical Sciences, Tirupati

C40 Laparoscopic versus open surgery after neoadjuvant chemoradiation in rectal cancer: long-term outcomes of a matched case-control study. Abhijit Das, Ramakrishnan Ayloor Seshadri, Rajaraman Swaminathan, Ayyappan Srinivasan, Madras Cancer Care Foundation, Cancer Institute (WIA), Chennai

Liver

L27 A prospective single blind Randomized control Trial to compare the outcome after liver resection with or without intermittent portal infl ow control (Pringle’s maneuver)- LIPINCOT Trial. Abdul Rehman, Madras Medical College, Chennai


L42 Biliary Complications in Living Donor Liver Transplant– Our Experience. Vibha Varma, Shailesh Sable, Sorabh
Kapoor, Kapildev Yadav, Diptiman Roy, Gaurav Mehta, Subhash Agal, Vinay Kumaran, Kokilaben Dhirubhai Ambani Hospital, Mumbai

**L46 Intraoperative transfusions— How much & what product as predictor of post transplant infections & outcome especially in pretransplant infection naive patients.** Thiagarajan Srinivasan, Vikram Raut, Ragavendra Babu, Sanjay Goja, Vijay Vohra, Arvinder Singh Soin, Medanta The Medicity, Gurugram

**L51 Hydatid Cyst Of Liver With Cyst-Biliary Communication– An Audit.** Ajit Kumar Mishra, Abishek Rajan, Anand Prakash, Anu Behari, Rajneesh Kumar Singh, Ashok Kumar Gupta, Vinay Kumar Kapoor, Rajan Saxena, SGPGIMS, Lucknow

**Pancreas**


**P43 Implication of SMAD4 loss on Clinico-pathological features and Prognosis in Pancreatic cancer– A prospective study.** Subrahmaneswara Babu Naidu, Sandeep Sabnis Chandrakant, Senthilnathan Palanisamy, Annapoorni Shankar, Aravindh Subramaniam, Anand Vijay Natesan, Nalankilli VP, Srivatsan Gurumurthy, Parthasarathi Ramakrishnan, Palanivelu Chinnusamy, GEM Hospital and Research Institute, Coimbatore

**P45 Correlation between clinical features, imaging characteristics, pathomorphology and functional status in patients with non alcoholic chronic pancreatitis.** Waliullah Siddiqui, Lakeshore Hospital And Research Centre, Kochi

**P52 Laparoscopic Distal Pancreatectomy- Analysis Of Seventeen Years Experience Of A Tertiary Care Academic Institute.** Samrat Vijaykumar Jankar, Subrahmaneswara Babu NS, Sandeep Sabnis, Anand Vijay Natesan, Nalankilli VP, Srivatsan Gurumurthy, Annapoorni Shankar, Aravindh Subramaniam, Palanivelu Chinnusamy, GEM Hospital and Research Institute, Coimbatore

**Biliary tract**

**B21 Validation of the Lucknow BCD Classification for Acute Bile Duct Injury.** Joy A Abraham, Gujarat Cancer Society Medical College & Care Institute of Medical Sciences (CIMS), Ahmedabad


**B32 Laparoscopic radical cholecystectomy: Surgical and oncological outcomes.** Vageesh BG, Anil K Agarwal, MN Saravanan, HH Nag, Amit Javed, Raja Kalayrasan, GB Pant Hospital & MAM College, New Delhi

**B34 Prognostic significance of K-ras gene mutations in gallbladder cancer.** Anjali Singh, Pramod Kumar Mishra, Sundeen Singh Saluja, Sayed AH Abdi, Majid K Talikoti, Abul K Najmi, Jamia Hamdard and GB Pant Institute Of Medical Education And Research, New Delhi

**B39 A Prospective Comparative Study On The Effect Of Preoperative Biliary Stenting On Surgical Morbidity And Mortality After Pancreatico-Biliary Surgeries.** Prasanna B, Balakrishna SN, Venugopal HG, Nagesh NS, Vinay BN, Bangalore Medical College, Bengaluru

**B23 Management of Residual Gall Bladder- An experience of 15 years from a North Indian Tertiary Care Centre.** Ashish Singh, Rajneesh Kumar Singh, Anand Prakash, Anu Behari, Ashok Kumar, Vinay Kumar Kapoor, Rajan Saxena, SGPGIMS, Lucknow

**Miscellaneous**

**M22 Gastrointestinal Surgery in Patients on Antiplatelet Therapy.** Ritesh Kumar, Sarasansh Bansal, Iqbal Singh, Rudra Prasad Doley, Atul Sharma Joshi, Rajeev Kapoor, Jai Dev Wig, Fortis hospital, Mohali
M23  Nutritional Assessment in Patients with Gastrointestinal Malignancy and its Impact on Adverse Events following Surgery. Pankaj Kumar Sonar, Azhar Perwaiz, Amanjeet Singh Arora, Adarsh Chaudhary, Medanta the Medicity, Gurugram

M21  Bacteriological Profile of Patients with Intra-Abdominal Sepsis and Superficial Surgical Site Infection following Emergency Abdominal Surgery- Is it concordant. Subair Mohsina, Aggarwal Ridhima, Sathasivam Suresh Kumar, Samanika Gubbi Seenath, Srisa Suchatha, T Mahalakshmy, Vikram Kate, JIPMER, Puducherry

M34  Informed consent in 500 consecutive Indian surgical patients. Samrat Ray, Siddharth Mehrotra, Vivek Mangla, Shailendra Lalwani, Amitabh Yadav, Naimish N Mehta, Samiran Nundy, Sir Ganga Ram Hospital, New Delhi

M38  Surgical management of ERCP related perforation: An outcome analysis. Pramod Kumar Mishra, Nilesh Patil, Sundeep Singh Saluja, Nisha Solanki, Kshitij Sisodia, Ashish Sachan, GB Pant Institute Of Medical Education And Research, New Delhi

M39  Visceral Artery Aneurysms– Incidence, Management and Outcome at a Tertiary Care Surgical Gastroenterology Centre. Abishek Rajan, Ajit Kumar Mishra, Rajanikant R Yadav, Anu Behari, Rajneesh Kumar Singh, Rajan Saxena, SGPGIMS, Lucknow

Poster Presentations

Oesophagus

O1  Robotic assisted laparoscopic oesophagectomy: A single centre experience. Amir Parray, Saumitra Rawat, Belal Asaf, Sir Ganga Ram Hospital, New Delhi

O3  Rare Postoperative Complication after Transhiatal Esophagectomy for Carcinoma Esophagus. Roopa Bhushan, Roshan Rao, Rajarajeshwari Medical College & Hospital, Bangalore and Malnad Hospital & Institute of Oncology, Shimoga

O4  Laparoscopic Assisted Repair of Corrosive Strictures. Jayant Kumar Banerjee, Ramanathan Saranga Bharathi, Bharti Vidyapeeth Medical College & Command Hospital (Southern Command) & Armed Forces Medical College, Pune

O5  Spontaneous Esophageal Perforations- “Is the outcome better if they survive the initial insult?” JMV Amarjothi, Villalan Ramasamy, R Prabokar, Bennet Duraisamy, Kannan D, MMC, Chennai

O6  Thoraco-laparoscopic Repair Thoracic Tracheo-Esophageal Fistula. Ramanathan Saranga Bharathi, Jayant Kumar Banerjee, Command Hospital (Southern Command) & Armed Forces Medical College and Bharti Vidyapeeth Medical College & Hospital, Pune

O7  IgG4 related disease of the Esophagus: A case report. Swaminathan Ravi, Sam V George, Vijay Abraham, Sudhakar Chandran, Inian Samarasam Christian Medical College, Vellore

O9  Robotic Upper GI Surgery– Initial Experience from a Single Center in Kerala. Iyyoob VA, Aster Medcity, Kochi

O10  Laparoscopic Heller’s myotomy (LHM) for Achalasia Cardia by blunt dissection: A safe technique. Kunal Parasar, Hirdaya H Nag, Nisha Solanki, Sanjeev Sachdeva, GB Pant Institute Of Postgraduate Medical Education And Research, New Delhi

O11  Factor determining severity of neck leaks following esophagectomy for carcinoma esophagus. Vivek Sharma, Azhar Perwaiz, Amanjeet Singh, Adarsh Chaudhary, Medanta The Medicity, Gurugram

O12  Correlation of Pretherapeutic Neutrophil and Lymphocyte Ratio (NLR) and response after Neoadjuvant Therapy in patients with Esophageal Cancer. Santhosh Anand, Bhati Gajendra Kumar, Vikram Kate, Biju Pottakkat, Kalayarasan Raja, Vishnu Prasad NR, Rajesh Nachiappa Ganesh, Shyama Prem S, Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry

O13  Chyle leaks following esophagectomy for carcinoma esophagus. Monish Karunakaran, Azhar Perwaiz, Amanjeet Singh, Adarsh Chaudhary, Medanta The Medicity, Gurugram

O14  Experience in management of Oesophageal Perforations at a tertiary referral centre in India. Mithun Kumar R, Seshukumar Bylapudi, Mahesh N, Paulvannan S, KMCH, Coimbatore

O15  Colon Interposition in Gastro-Esophageal Cancer Surgery- The Need and Outcome- An Analysis of 31 Patients. Abdul Rehman, Madras Medical College, Chennai

O18  Utilization of gastric conduit with gastric outlet obstruction in the management of corrosive esophageal stricture. Sundeep Singh Saluja, Vaibhav Varshney, Pramod Kumar Mishra, Kshitij Sisodia, Ashish Sachan, Pushpar Sheetal, GB Pant Institute Of Medical Education And Research, New Delhi

O19  RUNX3 and EZH2 co-expression in esophageal cancer tissues: A contradiction. Asad Ur Rehman, Sundeep Singh Saluja, Snigdha Saikia, Aravinda PS, Mohammad Askandar Iqbal, Pramod Kumar Mishra, Subash Medhi, Syed Akhtar Husain, Jamia Millia Islamia and GB Pant Institute Of Medical Education And Research, New Delhi and Gauhati University, Guwahati
O20 Validation of novel genetic alterations identified in esophageal squamous cell carcinoma (ESCC). Arshid Iqbal Qadri, Nizams Institute Of Medical Sciences, Hyderabad

Stomach

S2 Comparison of lymph node yield and short term outcome between two different techniques of splenic hilar dissection in D2 total gastrectomy: A prospective case control study. Rohan Shetty, Kartik K, Deepak G, Pramilk K, Kamalesh NP, Shaji P, Prakash K, PVS Memorial Hospital, Kochi

S3 Retrograde jeuno-gastric intussusception a delayed complication of gastrojejunostomy. Rajvilas Anil Narkhede, Pavan V, Narendranath Nagoti, Vijaykumar C Bada, Global Hospitals, Hyderabad

S4 Acuphagia- The Cause Of A Bizarre Bezoar!!! Anoop Sivakumar

S5 Isolated metastasis at the drain site after gastric resection– A rare case. Muppa Viswanath, Narayana Medical College, Nellore

S7 Enhanced recovery protocol for subtotal gastrectomy- A prospective cohort to assess whether postoperative recovery following subtotal gastrectomy can be enhanced by following a structured protocol. Nandu Nair, Vijay Abraham, Aster Medcity, Cochin and CMC, Vellore

S8 Gastric cancer in the young. Abdul Rehman, Madras Medical College, Chennai

S9 Gastric Volvulus- An atypical presentation. Mayank Mangal, Anandhi A, Loka Vijayan Siddha, JIPMER, Puducherry

S10 Cystic Lesion in Lesser Sac- A Diagnostic Dilemma. Gopalan Sathiyavelavan, S Karupannan, Sholai Medical Center and CARE 24 Speciality Hospital, Erode

S11 A Rare Case Report: Rapunzel Syndrome. Kirtana Shrenik Shah, S.B.K.S. Medical Institute & Research Center, Vadodara

S12 Gastric adenocarcinoma in a male patient with Plummer-Vinson syndrome. Mathews James, Anandhi Amaranathan, JIPMER, Puducherry

S13 Mesenteroaxial Gastric Volvulus. Nikhitha D Shetty, Ashwinikumar Kudadi, Jayant Gul Mulchandani, Narayana Hrudayalaya Hospitals, Bengaluru

S14 Gastric lipoma presenting with hematemesis- Rare case report. Balamourougan Krishnaraj, Baskaran Dhanapal, Sarath Chandra Sistla, Gomathi Shankar V, Vignesh Natesan, Jawaharlal Institute Of Postgraduate Medical Education And Research, Puducherry

S15 Atypical presentation of a stomach GIST. Balamourougan Krishnaraj, Jan Sujith, Sarathchandra Sistla, Baskaran D, JIPMER, Puducherry

S16 Radical D2 gastrectomy for carcinoma of the stomach: An Indian experience. Nabi Prithiviraj, GB Pant Hospital, New Delhi


S22 Meningitis carcinomatosa due to gastric cancer: Rare manifestation of a common malignancy. Baskaran Dhanapal, Sarath Chandra Sistla, Gomathi Shankar, Balamourougan Krishnaraj, Ranjith Kumar, JIPMER, Puducherry

S23 Minimally invasive treatment of gastric gastrointestinal stromal tumors: laparoscopic and endoscopic approach. Dhawal Sharma, C Palanivelu, R Parthasarathi, GEM Hospital, Coimbatore

S25 Role of Peritoneal Cytology and Peritoneal Histology in Gastric Cancer. JMV Amarjothi, Karthikeyan Mahalingam, Amudhan Anbalagan, Prabakaran R, Bennet Duraisamy, Anand L, Kannan D, MMC, Chennai

S26 Clinicopathological Correlation with Her2/Neu Overexpression in Carcinoma Stomach. Pushkala S, Anitha Muthusami, Sreenath GS, Rajesh NG, Vikram Kate, JIPMER, Puducherry

Small Intestine

I1 Malignant gastrointestinal stromal tumor of the jejunum with liver metastasis. Jignesh Patel, Mamta Hospital, Surat

I2 Laparoscopic Management of a Rare Ileal Duplication Cyst in the Elderly. Kamal Sunder Yadav, Priyanka
Akhilesh Sali, Hitesh Mehta, Lilavati Hospital and Research Centre, Mumbai

I3 Limited distal duodenal resection: Surgical approach and outcomes. Ankush Kalyan Golhar, Vivek Mangla, Shailendra Lalwani, Siddharth Mehrotra, Naimish Mehta, Samiran Nundy, Sr Ganga Ram Hospital, New Delhi

I4 Mesenteric Vessel Occlusion: A Retrospective Study of Cases Presenting to our Center in the past 2yrs. Mustafa Razvi, Narsimhan Mohan, Ramesh Ardhana, MMHRC Hospital And Research Center, Madurai

I6 A Rare Case Of Eosinophilic Enterocolitis presenting as Intestinal Obstruction. Raghu Sricharan

I7 Segmental duodenectomy for duodenojugal flexure tumours: Case series. Saurav Sharma, Azhar Perwaiz, Amanjeet Singh, Adarsh Chaudhary, Medanta Hospital, Gurgaon


I10 Jejunojejunal Intussusception: A Rare Complication after Feeding Jejunostomy in A Patient With Situs Inversus Totalis– A Case Report. Sakthivel Harikrishnan, Harish Goutham, Rajkumar Nagarajan, Nandakishore Maroju, Srinivasan K, JIPMER, Puducherry

I11 Rare Presentation Of Adult Intussusception– Post Partum Period. Anil Sundaram, Haridas TV, Govt Medical College, Thrissur

I12 Duodenal neuroendocrine carcinoma with Gastric Outlet Obstruction: A rare presentation. Lalit Aggarwal, Rama Alagappan, Lady Hardinge Medical College, New Delhi

I13 Internal herniation through falciform ligament- An unusual cause of small bowel obstruction. Raj Kumar Nagarajan, JIPMER, Puducherry

I14 Gall Stone Disease After Ileostomy. Santosh C Gudimani, Abhishek Bhagvat, Mohan N, Ramesh Ardhana, MMHRC, Madurai

I15 Primary Malignant Melanoma of the Duodenum– A Rare Case Report. Villalan Ramasamy, Amarthi JMV, Gnanasekar Murugaiyan, Amudhan Anbalagan, Anand Laxmanan, Kannan Devygonnder, Madras Medical College, Chennai

I17 Closure Of Loop Ileostomies- A 17 Year Single Centre Retrospective Study. Amir Parray, Anand Nagar, Siddharth Mehrotra, Vivek Mangla, Shailendra Lalwani, Amitabh Yadav, Naimish Mehta, Samiran Nundy, Sr Ganga Ram Hospital, New Delhi

I18 Early Diagnostic laparoscopy is beneficial in Acute Mesenteric Ischemia. Vinit Wakade, Sujeet Jahagirdar, Ashwini Sahakari Rugnalaya, Solapur

I19 Adult intussusception- A case series study. Aravind S Ganapath, Govt Medical College, Trivandrum

Managing Appendicular Mass– A single centre 10 year experience. Suraj Surendran, Sasank Kalipatnapu, Suchita Chase, Christian Medical College And Hospital, Vellore

Colorectal

C1 Gastrointestinal stromal tumor (GIST) of the rectum: A rare case report. Ashok Kumar II, Ashok Kumar, Sandeep Verma, SGPGIMS, Lucknow


C6 A Rare Case of Fatal Appendiceal Mucormycosis in a Known Case of AML. Priyanka Akhilesh Sali, Kamal Sunder Yadav, Hitesh Mehta, Lilavati hospital and Research Centre, Mumbai

C7 Prognostic Significance of Thrombocytosis in Colorectal Cancer. Rakesh Kumar Yadav, King George’s Medical University, Lucknow

C9 Composite Gluteus Maximus and Antropyloric Graft for Neoanal Reconstruction in Cases with Severe Fecal Incontinence. Prabhu Singh, Nikhil Chopra, Saket Kumar, Abhijit Chandra, Pradeep Joshi, King George’s Medical University, Lucknow

C10 Prospective Assessment of Feasibility and Short Term Outcomes after Laparoscopic Ultra-Low Anterior Resection for Low Rectal Cancers. Manish Jain, Subhiah Rajapandian, Ramakrishnan Parthasarthi, Senthil Ganapathi, Praveen Raj Palanivelu, Chinnaswamy Palanivelu, GEM Hospital, Coimbatore

C11 Neuroendocrine tumour of rectum. Muppalla N V N Yesawsy

C12 Basidiobolomycosis A Rare and Underdiagnosed Fungal Infection Mimicking Eosinophilic Colitis. Siddhant Vijay Mathurvaishya, AIG Hospital, Hyderabad


C16 Early Surgical Intervention for Ulcerative Colitis. Parvezikbal Ilahi Jamadar, KEM Hospital, Pune

C17 Colonic Stricture in Ulcerative Colitis- A Case Report. Gopalan Sathiyavelavan, S Karupannan, Sholai Medical Center, Erode

C23 A prospective pilot study comparing extralevator versus standard abdominoperineal excision in low rectal cancer. Ramakrishnan Ayloor Seshadri, Nicholas West, Shirley Sundersingh, Cancer Institute (WIA), Chennai and Leeds Institute of Molecular medicine, UK

C24 A largest Case Series of Stapled Trans Anal Rectal Resection for Rectal Prolapse up To 4 cm from Anlge Verge. Ashwin Porwal, Healing Hands Clinic, Pune


C29 Long Term Outcomes And Factors Affecting After Restorative Proctocolectomy And Ileal Pouch Anal Anastomosis For Ulcerative Colitis. Nikhil Jayprakash Jillawar

C30 Assessment of Severity And Pattern Of Low Anterior Resection Syndrome In Patients Undergoing Low Anterior Resection For Rectal Cancer In A Tertiary Care Setup Based On The Scoring System Questionnaire. Gopakumar C Vallyathan, Thirupur G Balachandar, Anand Ramamurthy, Apollo Hospitals, Chennai


C33 Outcomes of Asymptomatic Leaks Following Anterior Resection. Deeksha Kapoor, Amanjeet Singh, Azhar Perwaiz, Adarsh Chaudhary, Medanta- The Medicity, Gurugram

C34 To Evaluate The Accuracy Of Preoperative Contrast Enhanced MRI In Histopathological Staging Of Rectal Cancer. Kapil Dev Sharma, Amanjeet Singh Arora, Azhar Perwaiz, Adarsh Chaudhary, Medanta The Medicity, Gurugram

C36 Laparoscopic abdominoperineal resection for carcinoma of anorectum– short term clinical and oncological outcome at a tertiary referral centre. Kshitij Sisodia, GB Pant Hospital New Delhi

C37 Combined Relaparoscopy and transanal endoluminal Repair (Hybrid approach) in the management of early postoperative colorectal anastomotic leaks– Technique and Outcomes. Saurabh Bansal, Tao-Wei Kee, Takashi Kato, Sheng Chi Chang, William Tzu-Liang Chen, Abe Fingerhut, Action Medical Institute/Action Cancer Hospital New Delhi, China Medical University Hospital, Taiwan

C38 Overlapping Sphincteroplasty Without Covering Colostomy For Fecal Incontinence Following Obstetric Anal Sphincter Injuries …Short And Longterm outcome Analysis. Villalan Ramasamy, Rajendran Vellaisamy, Amuthan Anbalagan, Bennet Duraisamy, Prabhakaran Raju, Kannandevgounder, Madras Medical College, Chennai

C39 Long-term functional and oncological outcomes following intersphincteric resection for low rectal cancers. Vinod Kumar Mudgal, Ramakrishnan Ayloor Seshadri, Surendran Veeraiah, Cancer Institute (WIA), Chennai

C41 Selective Pelvic Lymph Node dissection in mid and lower rectal malignancy.Nikhil Gupta, Syed Asif, Shivendra Singh, Rajiv Gandhi Cancer Institute, Delhi

C42 Extralevator abdominoperineal Excision (ELAPE) for locally advanced carcinoma rectum: Single center experience. Nikhil Gupta, Ketul Shah, Shivendra Singh, Rajiv Gandhi Cancer Institute, Delhi


C44 Laparoscopic Anterior Resection- is it time to avoid a diverting stoma? Sathchith S, Arunkumar ML, Noushif M, Mohamed Abdullatheef Thirunavayakalathil, Vishnu Sobha Ravidas, Emil Joseph Eliston, Sree Gokulam Medical College and Research Foundation and GG Hospitals, Trivandrum

C45 Laparoscopic completion appendectomy for stump appendicitis: Experience from a tertiary care centre in south India. Bhushan Chittawadagi, R Parthasarathi, Samrat Jankar, Sandeep Sabnis, S Saravana Kumar, Dharmesh Dhanani, C Palanivelu, GEM Hospital And Research Centre, Coimbatore

Liver

L1 A rare and unexpected complication of ADPKD. Senthil Muthuraman

L2 Laparoscopy in hemodynamically stable patients of blunt trauma abdomen. Lohith Umapathi, Yashoda hospital, Hyderabad
L7 Radical surgery for hydatid cyst with cysto-biliary communication- Outcome analysis. Senthil Kumaran Govindaraj, John Grifson, Benet Duraisamy, Prabaharan Raju, Amudhan Anbazhagan, Anand L, Kannan D, Madras Medical College, Chennai

L8 Management Of Hepatolithiasis In A Tertiary Care Center In South India- Retrospective Study. Abdul Rehman, Madras Medical College, Chennai

L11 Primary Hepatic Lymphoma Treated With Liver Resection And Post Operative Chemotherapy. Sreeharsha Korukonda, Nishkarsh Mehta, A Anandhi, Vishnu Prasad NR, Debasish Ghochait, JIPMER, Puducherry

L12 Living Donor Liver Transplantation in Budd Chiari Syndrome: surgical challenges and outcomes. Manoj Kumar Ayyappath, Divakar Jain, Furquan Ahmad, Gaurav Sood, Kausar Makkhi, Vishal Chorasiya, Punnet Dargan, Vivek Vij, Fortis Hospital, Noida

L14 Intrahepatic cholangiocarcinoma involving all the major hepatic veins- liver resection with MHV reconstruction. Rohan Jagat Chaudhary, Prashant Bhangui, Sanjay Yadav, Amit Rastogi, Arvinder Singh Soin, Medanta Liver Institute, Gurugram


L17 Role of surgical resection in Giant hepatic hemangiom. JMV Amarjothi, Villalan Ramasamy, Amudhan Anbalagan, Bennet Duraisamy, Anand L, Kannan D, MMC, Chennai

L20 Does Internal Stenting Influence Biliary Inflammation in Adults Living Donor Liver Transplantation: A Pilot Study. Anila T, Vivek Mangla, Saumitra Rawat, Abhideep Chaudhary, Karisangal Ramaswamy Vasudevan, Sir Gangaram Hospital and Jaypee Hospital, New Delhi


L23 Palliative Resection For Neuroendocrine Tumours With Liver Secondaries- Report Of Three Cases. Bala Murugan Srinivasan, Rajendran Vellaisamy, Amudhan Anbalagan, Prabahakaran Raju, Benet Duraisamy, Kannan Devy Gounder, MMC, Chennai

L24 To Evaluate The Role Of Implantable Doppler Ultrasound Surveillance In Intra-Abdominal Vascular Anastomoses. Shrirang Vasant Kulkarni, Pankaj Rao, Sudeep Naidu, Arun Kumar Singh, Anuj Kumar Sharma, Vikram Trehan, Amit Gaur, Nishant Pathak, Army Hospital Research And Referral And Base Hospital, Delhi and Air Force Hospital, Jorhat

L26 BCLC criteria is not “sin qua non” for resection in HCC: Outcomes following 100 consecutive Liver Resections for HCC- Indian Experience. Dinesh Kundlik Zirpe, Gopakumar CV, Somak Das, Sudeep Swain, Sri Harsha Kollu, Darshan Patel, Anand Ramamurthy, Apollo Main Hospital, Mumbai

L28 Can the model for end-stage liver disease score predict post-operative outcome of hepatectomy? Dinesh Kundlik Zirpe, Gopakumar CV, Somak Das, Sudeep Swain, Sri Harsha Kollu, Darshan Patel, Anand Ramamurthy, Apollo Main Hospital, Chennai

L30 Liver regeneration in donors after living related liver transplantation: Prometheus revisited. Rajiv Rao, Narkhede, Vijaykumar C Bada, Balbir Singh, Venugopal Kota, Vivek Aery, Mohamed Rela, Global Hospitals, Hyderabad

L32 Perioperative and Short Term Outcomes of Laparoscopic Hepatectomy of 41 consecutive patients from a tertiary care institute. Senthil Nathanalan, Nalankilli Palanisamy, Anand Vijay Natesan, Srivatsan Gurumurthy, Senthil Anand Elavarasan, Sandeep C Sabnis, Palanivelu Chinnusamy, GEM Hospital and Research Centre, Coimbatore

L33 Surgical anatomy of arterial supply of segment 4 of the liver: A cadaveric study. Hemanth Kumar, Shalini Garg, Thakur Deen Yadav, Daisy Sahni, Rajinder Singh, PGIMER, Chandigarh

L34 Two-stage procedure in Budd-Chiari syndrome: inferior vena cava stenting and portocaval shunt. Kailash Chandra Dhaker, Senthil Nathanalan, Nalankilli Palanisamy, Anand Vijay Natesan, Srivatsan Gurumurthy, Senthil Anand Elavarasan, Sandeep C Sabnis, Palanivelu Chinnusamy, GEM Hospital and Research Centre, Coimbatore

L37 Laparoscopic repair of Incisional hernia among donors and recipients after Living donor liver transplantation. Rahul Saxena, S Goja, AN Rastogi, P Bangui, V Vohra, AS Soin, Medanta- The Medicity, Gurugram

L40 Rare tumors of liver- Experience of tertiary care centre. Abdul Rehman, Madras Medical College, Chennai

L41 Post Liver Transplant Recurrence In Patients With Hepatocellular Carcinoma: Not Necessarily The End Of The Road! Sanjay Kumar Yadav, Prashant Bangui, Sanjay Goja, Amit Rastogi, Arvinder Singh Soin, Medanta- The Medicity, Gurugram

L43 Tuberculosis and Liver transplant- Treatment dilemma. Vibha Varma, Shailesh Sable, Sorabh Kapoor, Kapildev Yadav, Gaurav Mehta, Subhash Agal, Vinay Kumar, Kokilaben Dhirubhai Ambani Hospital, Mumbai


L47 Outcomes In Relation To Graft To Recipient Weight Ratio (GRWR) In Living Donor Liver Transplant (LDLT) Recipients. Pushpendra Kumar Naik, Naimish Mehta, Shailendra Lalwani, Vivek Mangla, Siddharth Mehrotra, Samiran Nundy, Sir Gangaram Hospital, Delhi

L48 Portal vein arterIALIZATION with Roux-en-Y biliointestinal anastomosis –a rescue technique for hepatic artery thrombosis after live donor liver transplantation. SujeeT Kumar Saha, Arvinder Singh Soin, Medanta, Gurugram

L49 Spectrum of surgical approach to liver hydatidosis- From simple de-roofing to liver transplant: A tertiary center experience. Anisha Tiwari, SujeeT Kumar Saha, Sanjay Goja, Arvinder Singh Soin, Medanta, The Medicity, Gurgaon


L52 Management Of Symptomatic Giant Hemangiomas- A Tertiary Care Center Experience. Srinivasan Muthukrishnan, Rajendran Vellaisamy, Amudhan Anbalagan, Prabhakaran Raju, Bennet Duraisamy, Gnanasekar M, Kannan Devy Gounder, Madras Medical College, Chennai


Pancreas

P1 Primary Pancreatic Tuberculosis- A Rare Case Report. Bharath Ramesh Konan, Murali Krishna Padiyala, Anitha Muthusami, Elamurugan TP, S Manwar Ali, Jagdish S, JIPMER, Puducherry

P2 Double Splenic Artery Pseudo-Anerysm and Pseudocyst in a patient with Chronic Pancreatitis- A Therapeutic Stalemate?? Mohsina Subair, Santhosh Satheesh, Suresh Kumar Sathasivam, Sreenath Gubbi Samanna, Mahesh Kumar S, Deepak Barathi, Vikram Kate, JIPMER, Puducherry

P3 Gastric outlet obstruction and intussusception following Frey’s procedure in a patient with chronic pancreatitis- A case report. Mohsina Subair, Suresh Kumar Sathasivam, Sreenath Gubbi Samanna, Deepak Barathi, Vikram Kate, JIPMER, Puducherry

P4 Two rare complications of chronic pancreatitis at either end of pancreas. Sahil Bassi, Sankar Narayanjan, Jagann Balu, Suresh Kumar, Amadeep Singh Sandhu, Rajeshree Nair, Shankar Narayanjan Perumal, Sankar Subramanian, Sri Ramachandra University, Chennai

P5 Reversed Intestinal Rotation With Annular Pancreas Presented as Acute Necrotising Pancreatitis- A Case Report. Rajendar Byshetty, Shanmugam D, Kadambari D, Jawaharlal Institute of Postgraduate Medical Education & Research, Puducherry

P6 Retroperitoneoscopic Pancreatic necrosectomy- Minimal invasive technique for maximal morbidity disease. Harshad Soni, Sanjiv Haribhakti, Kaizen Hospital, Ahmedabad

P7 A rare case of Carcinoma Pancreas with meningeval metastasis: Case report. Satya Prakash Jindal, Indraprastha Apollo Hospital, New Delhi

P8 Recurrent Acute Pancreatitis In A Child- Etiology Being A Rare Pancreatic Duct Anomaly. Bharath Kumar Desu, Narayana Medical College, Nellore

P9 Operative outcome of Pancreaticoduodenectomy with Portal Venous Resection: Our experience. Lokesh Goyal, Rajesh Bhojwani, SDM Hospital, Jaipur

P11 Cystic Pancreatic Lymphangionioma- Case Series. Arun Kasi, Govt Stanley Medical College Hospital, Chennai

P12 Pancreaticoduodenectomy with enbloc SMA resection and PTFE graft for high grade spindle cell sarcoma of head of pancreas: A case report. Vinod B Biradar, Santakoba Durlabji Memorial Hospital, Jaipur

P13 Retrospective Comparison of the Outcomes of Open vs Laparoscopic Infected pancreatic Necrosectomy: A Single Centre Study. Sumesh Kaistha, Command Hospital Air Force, Bangalore
P15 Adenosquamous Carcinoma Pancreas in a young female. Nimi Viju, Govt. Medical College, Kottayam
P16 Neuroendocrine tumors of pancreas- experience of a tertiary care centre. Abdul Rehman, Madras Medical College, Chennai
P17 Xanthogranulomatous Pancreatitis-A rare case presentation. Nimi Viju, Govt. Medical College, Kottayam
P18 Management of complete pancreatic transection following blunt trauma abdomen: lessons learnt. Jitendra H. Mistry, Deepali Mistry, Pankaj Khandelwal, Anand Naregal, Ankur Vaishnav, Harendra Chauhan, Baroda Laparoscopy Hospital, Baroda Imaging Center, and Sterling Hospital, Vadodara, Healing Touch Hospital, Bharuch
P19 Mediastinal Pseudocyst– Varied Presentations and Management. Durairaj Segamalai, Madras Medical College, Chennai
P20 Pancreatic Parenchyma Preserving Resections. Parvezikbal Ilahi Jamadar, KEM Hospital, Pune
P21 Primary Early Surgical Management Of Pancreatic Ascites (PA) in Chronic Pancreatitis – A Single Centre Experience. Soma Sekar, Madras Medical College, Chennai
P22 An unusual presentation of a rare neoplasm. Rohit Gaurav, Sanjoy Mandal, Medica Superspeciality Hospital, Kolkata
P23 Primary Ewing’s Sarcoma of the Pancreas: A case report and review of the literature. Ankush Kalyan Golhar, Samrat Ray, Shashi Dhawan, Ushast Dhir, Saumitra Rawat, Beate Haugk, Suresh Singhvi, Sir Ganga Ram Hospital, New Delhi
P24 Initial experience of artery first approach in laparoscopic pancreatectoduodenectomy. Vivek Kaje, GEM Hospitals And Research Centre, Coimbatore
P25 Management Of Delayed Arterial Haemorrhage In Post Pancreatic Surgery Scenario: A Single Institution Experience As Case Series. Sugi Subramaniam, Govt Stanley Medical College, Chennai
P26 Analysis Of Etiology Of Acute Pancreatitis In Female Patients. Nigil Abdul Jalal, Kasturba Medical College, Mangalore
P28 Analysis Of Intraoperative Pancreatic Fluid Aspirate in Patients with Chronic Pancreatitis Undergoing Lateral Pancreatic Jejunostomy. Kinrana Reddy, Yogesh Kumar, Kasturba Medical College, Manipal University, Mangalore
P29 The Effect Of Braun’s Enteroenterostomy On Delayed Gastric Emptying Following Pancreaticoduodenectomy. Nishant Pathak, C Sudeep Naidu, Pankaj P Rao, AK Singh, Sanjay Sharma, Vikram Trehan, Amit Gaur, SV Kulkarni, Army Hospital (R&R), New Delhi
P30 Risk Factors For Predicting Malignancy In Chronic Calcific Pancreatitis With Head Mass: Towards A Risk Scoring System. Kartik Kulshrestha, PVS Hospital, Cochin
P31 Prospective study of various prognostic markers and scoring systems for predicting morbidity and mortality in acute pancreatitis. Shaifali Arvind Goel, Hitesh Chavda, Sterling Hospital, Ahmedabad
P32 Early and Late Postoperative Outcomes of Middle Pancreatectomy. Shashikiran MS, Medical College, Thiruvananthapuram
P33 Comparison of outcomes between minimally invasive and open pancreatic necrosectomy. Satish Kumar Mugali, Manipal Hospital, Bangalore
P34 Need to Optimize Maximum Surgical Blood Order Schedule (MSBOS) for Pancreatectoduodenectomy. Abhinav Sengar, Savio George Barreto, Manish Kumar Singh, Adarsh Chaudhary, Medanta Hospital, Gurugram
P36 Factors Predicting The Outcome In Patients Undergoing Necrosectomy For Severe Acute Pancreatitis With Necrosis. Durairaj Segamalai, Siva Kumar, Benet Duraisamy, Prabhaharan Raju, Amudhan Anbazhagan, Anand
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Lakshmanan, Kannan Devygounder, Madras Medical College, Chennai

P47 Head coring for chronic calcific pancreatitis without pancreatic head mass: short-term outcome analysis.
Villalan Ramasamy, Rajamahendran Rajendran, Rajendran Vellaisamy, Amudhan Anbalagan, Prabhakaran Raju, Benet Duraisamy, Kannan Dev Gounder, Madras Medical College, Chennai

P48 Node negative ampullary cancer treated with preoperative endoscopic sphincterotomy and drainage has a higher incidence of liver metastasis after pancreatico-duodenectomy.
Rajan Saxena, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow

P49 How much to attribute Delayed Gastric Emptying to Pancreatic leak? A retrospective analysis.
Mohamed Abdullahtheef TK, Arunkumar ML, Nouisif M, Sathchith S, Vishnu S Ravidas, Emil Joseph Eliston, Sree Gokulam Medical College and Research Foundation & GG Hospitals, Thiruvananthapuram

P50 Role of adjuvant treatment in periampullary carcinoma.
Asit Arora, Nikhil Agrawal, Saphalta Baghmar, Tushar Kanti Chattopadhyay, ILBS, New Delhi

P51 Pancreatic Ascites - a single centre experience.
Soma Sekar, Bennett Duraisamy, Prabhakaran Raju, Amudhan Anbalagan, Annad Lakshmanan, Kannan Devy Gounder, Madras Medical College, Chennai

P52 Assessment of Prognosis of Acute Pancreatitis on Admission: Comparison of HAPS and Apache II Scoring Systems.
Nigil Abdul Jalal, Kasturba Medical College, Mangalore

P53 Role of adjuvant treatment in periampullary carcinoma.
Asit Arora, Nikhil Agrawal, Saphalta Baghmar, Tushar Kanti Chattopadhyay, ILBS, New Delhi

P54 Role of adjuvant treatment in periampullary carcinoma.
Asit Arora, Nikhil Agrawal, Saphalta Baghmar, Tushar Kanti Chattopadhyay, ILBS, New Delhi

P55 Prospective randomised study comparing outcome of duodenum preserving pancreatic head coring with duodenum preserving pancreatic head and body coring in chronic pancreatitis.
Vikash Moond, PGIMER, Chandigarh

Biliary Tract

B2 Gall bladder carcinoma masquerading as colonic lesion.
Sankar Narayanan, Sahil Bassi, Jagan Balu, Suresh Kumar, Rajshree Nair, Amandeep Singh Sandhu, Shankar Narayanan Perumal, Sankar Subramanian, Sri Ramachandra University, Chennai

B3 Signet ring carcinoma gall bladder: Rare disease & rare presentation.
Itisha Chaudhary, Maulana Azad Medical college, New Delhi

B4 Aberrant Right Posterior Duct in a Choledochal Cyst – Management: A Case Report and Literature Review.
Prasanna B, Venugopal HG, Bangalore Medical College, Bengaluru

B5 Choledochocolonic fistula: A report of 2 cases and literature review.
Gunjan Shailesh Desai, Prasad Pande, Dattaprasanna Kulkarni, Lilavati Hospital And Research Centre, Mumbai

B6 Choledochal Cyst In Adults: Rising Incidence Or Increased Detection.
Nikhil Chopra, Prabhu Singh, Abhijit Chandra, Saket Kumar, Pradeep Joshi, King George Medical University, Lucknow

B7 Forgotten Biliary Stents: Ignorance is not a bliss!
Rugved V Kulkarni, Saket Kumar, Abhijit Chandra, King George's
B9 Laparoscopic Interaortocaval Lymph Node Sampling as Part of ‘Staging Laparoscopy’ in the Surgical Management of Gallbladder Cancer. Ashish Sachan, MN Saravanan, Anil K Agarwal, GB Pant Hospital & MAM College, New Delhi

B10 EUS (Endoscopic Ultrasound) Guided FNAC of the Interaortocaval Lymph Node Helps in Selecting Patients for Cureative Surgery in Gallbladder Cancer. MN Saravanan, Siddharth Shrivastav, Pramod Garg, Anil K Agarwal, GB Pant Hospital & MAM College and AIIMS, New Delhi


B14 Laparoscopic management of Symptomatic double gall bladder: A case report with review of literature. Bhushan Chittawadagi, S Rajapandian, Samrat Jankar, Sathiyamurthy, R Parthasarathi, C Palanivelu, GEM Hospital & Research Centre, Coimbatore

B15 Secondary hepatolithiasis- A tertiary center experience. Kapil Nagaraj Palanisamy, Biju Pottakkat, Raja Kalayarasan, Sandip Chandrasekar, JIPMER, Puducherry

B16 Diagnosis of Bronchobiliary Fistula Using HIDA Scan- A Report of Two Cases. Bala Murugan Srinivasan, Rajendran Vellaisamy, Amudhan Anbalagan, Prabhakaran Raju, Benet Duraisamy, Kannan Devy Gounder, MMC

B17 Robotic Assisted Pancreatectoduodenectomy- A totally intracorporal minimally invasive approach. Neeraj Dhamija, Brij Bhushan Agarwal, Sir Ganga Ram Hospital, New Delhi

B18 Comparison of spectrum of complications after pancreaticoduodenectomy in patients with or without preoperative biliary drainage. Hari Poudel, Thakur Deen Yadav, Vikas Gupta, Virendra Singh, Ramesh Kochhar, Saroj Sinha, Postgraduate Institute of Medical Education and Research, Chandigarh

B19 Laparoscopic excision of the Choledochal cyst in adult patients– an Indian experience. Hirdaya H Nag, Kshitij Sisodia, Pushap Sheetal, Som Chandra, GIPMER, New Delhi

B20 Laparoscopic hepatic bisegmentectomy (4b&5) with regional lymphadenectomy for Gall Bladder Cancer. Hirdaya H Nag, Prithvi Raj, Kshitij Sisodia, GIPMER, New Delhi

B22 Outcome Of 50 Cases Of Radical Cholecystectomy In Carcinoma Of Gall Bladder At Tertiary Care Centre. Amit Balai Chakraborty, GCRI, Ahmedabad

B24 Clinical significance of EGFR, HER-2& p53 expression in Gallbladder carcinoma. Anjali Singh, Pramod Kumar Mishra, Sundeep Singh Saluja, Majid A Talikoti, Jamia Hamdard, GB Pant Institute Of Postgraduate Medical Education And Research, HAH Centenary Hospital, New Delhi

B25 A Prospective study to evaluate Epidemiological profile of Gallbladder cancer patients from North Indian Gangetic planes. Sameer Gupta, King George's Medical University, Lucknow

B26 ER, PR, HER-2/neu in carcinoma gallbladder. Durgesh Kumar Gupta, Puneet Gupta, Ajay Kumar Khanna, Satendra Kumar Tiwari, BHU, Varanasi


B28 Gangrenous cholecystitis- Imaging findings and outcome of laparoscopic cholecystectomy. Saransh Bansal, Iqbal Singh, Preetinder Brar, Rahat Brar, Rajeev Kapoor, Atul Sharma Joshi, Rudra Prasad Doley, Jai Dev Wig, Fortis Hospital, Mohali

B29 Xanthogranulomatous Cholecystitis- An innocent bystander or a serious problem: Study of 67 cases. Prabhu Singh, Nikhil Chopra, Saket Kumar, Abhijit Chandra, Pradeep Joshi, King George's Medical University, Lucknow

B30 Laparoscopic Cholecystectomy in Cirrhotic Patients. Nitin Goyal, Dr RMLIMS Lucknow

B31 Choledochoduodenostomy in Present Era: Specific Indications and Outcomes. Anshuman Pandey, Smita Chauhan, Khalid Noman, Alankar Gupta, Nitin Goyal, Dr. Ram Manohar Lohia Institute of Medical Sciences, Lucknow

B35 Role Of Laparoscopic Cholecystectomy In Moderate Acute Cholecystitis: A Universal Debate. Abhishek Arun Bhagwat, Santosh Gudimani, Mustafa Razvi, Narzimhan Mohan, Ramesh Ardhaniar, Meenakshi Mission And Research Center, Madurai


B38 “Histological Surprise” in patients undergoing radical cholecystectomy for carcinoma gallbladder. Gautham Krishnamurthy, PGIMER, Chandigarh
B40 Analysis of Outcomes following Surgical Repair of Postcholecystectomy Biliary Strictures- A Single Centre Experience. Chitterusu Raghuram, Asian Institute of Gastroenterology, Hyderabad

B41 Feasibility of Laparoscopic Cholecystectomy in Gangrenous Cholecystitis. Sridhara KG, Venugopal HG, Balakrishna SN, Vinay BN, Nagesh NS, Bangalore Medical College, Bengaluru

Miscellaneous

M1 Is preoperative malnutrition in patients undergoing major gastrointestinal surgery a modifiable risk factor? Halder PJ, Santhosh R, Jagjivan Ram Railway Hospital, Mumbai

M2 Inflammatory Myofibroblastic Tumour of the Spleen- A Rare Case Report. Ramji Narendra Nalla, Sistla Sarath Chandra, Harish Gautam, Sakhthiselvam Harikrishnan, JIPMER, Puducherry

M3 A Rare Occurrence of Pheochromocytoma and GIST in a case of Neurofibromatosis Type 1. Anoop Sivakumar

M4 Delivery of HIPEC (Heated Intraperitoneal chemotherapy) through CRRT (Continuous renal replacement) machine – an innovative technique. Yogesh Ashakumar Bang, Pradeep R, Gurudu V Rao, AIG, Hyderabad

M5 Castleman’s disease: A rare diagnosis of retroperitoneal mass. Satya Prakash Jindal, Indraprastha Apollo Hospital, New Delhi

M6 A Tertiary Centre Experience of Splenic Artery Pseudoaneurysm. Koyyoda Prashanth, Osmania General Hospital, Hyderabad

M7 Non-Parasitic Cysts of Spleen- A Case Series. Nitesh Naga Balaji Pagadala, V Venkatarami Reddy, Gavini Sivaramakrishna, C Chandramaliteeswaran, M Brahmeswara Rao, Sri Venkateswara Institute Of Medical Sciences, Tirupati


M11 Infrequent surprises during diagnostic laparoscopy masquerading as acute appendicitis. Mohammed Hamdy, Jahra Hospital, Kuwait

M12 Omphalic Bleed - A rare case report. Loka Vijayan Siddha, Raj Kumar N, Mayank Mangal, JIPMER, Puducherry

M14 Massive splenic artery aneurysm with aneurysmal dilatation of the portal vein and splenic infarct: A Case report and review of literature. Samrat Ray, Amitabh Yadav, Samiran Nundy, Sir Ganga Ram Hospital, New Delhi

M16 Post ERCP Perforation: Presentation and Management. Abhishek Arun Bhagwat, Santosh Gudimani, Mustafa Razvi, Anil Vasanarla, Narsimhan M, Ramesh Arvindani, Meenakshi Mission And Research Center, Madurai


M18 Laparoscopic TAPP- A study on the learning curve and early outcomes. Bejoy Abraham, Janaki Krithika Chandra Mohan, Renai Medicine Multispeciality hospital, Cochin

M19 Indications for Splenectomy– Diagnosis Vs Therapeutic?Abinaya R Nadarajan, CMC, Vellore

M20 A Clinicopathological Profile of Mesenteric Vein Thrombosis. Rajesh Gangavatiker, Air Force Hospital, Kanpur

M25 Open Ventral Hernia Repairs Without Drain: A Prospective Study. Manish Sharma, Pavan Kumar MN, Lohith U, Yashoda Superspeciality Hospital, Hyderabad


M27 Feasibility of ERAS and its impact on postoperative outcome in gastrointestinal surgical patient. Satya Prakash Jindal, Indraprastha Apollo Hospital, New Delhi


M29 Gastrointestinal Stromal Tumours (GIST): Experience at an Indian tertiary care centre. Sri Aurobindo Prasad Das, Anand Narayan Singh, Sujoy Pal, Nihar Ranjan Dash, Peush Sahni, All India Institute of Medical Sciences New Delhi


M31 Use of adrenal vein as a conduit to perform splenorenal shunt: An alternative technique. Hari Govind, MN Saravanan, Vaibhav Varshney, Amit Javed, HH Nag, Anil K Agarwal, GB Pant Hospital & MAM College, New Delhi

M32 Splanchnic artery aneurysm and pseudoaneurysm: Presentation, management and outcomes over 8 years. Vaibhav Varshney, Sunil Kumar Puri, Sanjay Tyagi, Vijay Trehan, HH Nag, SS Saluja, PK Mishra, Anil K Agarwal, GB Pant Hospital & MAM College, New Delhi
M33 To study Clinical and Microbiological profile of Complicated intra abdominal infections. Shankar Kalyan Rao Deshmukh, Nizams Institute Of Medical Sciences, Hyderabad

M35 Why do people leave against medical advice (LAMA) in India and what happens to them subsequently? A study of 50 consecutive patients. Ishan Shah, Samrat Ray, Siddharth Mehrrotra, Vivek Mangla, Shailendra Lalwani, Amitabh Yadav, Naimish N Mehta, Samiran Nundy, Sir Ganga Ram Hospital, New Delhi

M36 Outcome of a series of patients with peritoneal surface malignancies treated with cytoreductive surgery and hyperthermic intraperitoneal chemotherapy in a tertiary cancer centre in India. Gaurav Das, Ramakrishnan Ayloor Seshadri, Hemant Raj E, Cancer Institute (WIA), Chennai

M37 Tracheo-esophageal Fistula in Advanced Squamous Cell carcinoma Oesophagus- A Single Centre Experience of 31 cases. JMV Amarijothy, Amudhan Anbalagan, Prabakaran R, Bennet Duraisamy, Kannan D, MMC, Chennai

M40 Rare Case of Intramural Gastric Air. C Praneeth Reddy, Narayana Medical College, Nellore

Award Video Presentations

L9 Ante situ hepatic vein and IVC reconstruction with in situ cold perfusion of liver for chronic Budd-chiari syndrome. Chinthakindi Madhusudhan, Sepuri Suresh Kumar, Koyyoda Prashanth, Tripuraneni Venkata Aditya Chowdary, TR Ravimohan, Busineni Mokshaprasuna, Ramalingam Pratap Reddy, Osmania General Hospital, Hyderabad


C18 Natural Orifice Specimen Extraction (NOSE) with Single Stapling Colorectal Anastomosis using Single incision port technique for Laparoscopic Anterior Resection. Saurabh Bansal, Sheng-Chi Chang, William Chen, Action Medical Institute/Action Cancer Hospital, New Delhi, and China Medical University Hospital, Taiwan

O2 Total laparoscopic midcolonic retrosternal esophageal bypass for corrosive stricture esophagus. Kalayarasan Raja, Biju Pottakkat, Sandip Chandrasekar, JIPMER, Puducherry

L5 Right Hepatectomy with caudate lobectomy for hilar cholangiocarcinoma. Hitesh Jayvant Chavda, Sterling Hospitals, Ahmedabad

L10 Robotic roux en-y bilioenteric reconstruction. Manoj Kumar Singh, Sanjay Goja, Arvinder Soin, Medanta Liver Institute, Gurugram

Oral Free Video Presentations

C5 Intersphincteric Resection. Raghavendra BK, BGS Global Hospital, Bengaluru

M13 Cytoreductive surgery (peritoneectomy) with hyperthermic intra peritoneal chemotherapy (HIPEC) for pseudomyxoma peritonei: A video demonstration. Ramakrishnan Ayloor Seshadri, Cancer Institute (WIA), Chennai

L22 Complex Implantation in LDLT. Thigayarajan Srinivasan, Sanjay Goja, Arvinder Singh Soin, Medanta the Medicity, Gurugram

S6 Billroth I anastomosis using a circular stapler for corrosive gastric stricture- A Novel Technique. Mohsina Subair, Sathvik Ramarao, Samanna Gubbi Sreenath, Vikram Kate, JIPMER, Puducherry

C12 Adynamic Graciloplasty for Fecal Incontinence: Video. Varun Dasari, V Venkataram Reddy, Gavini Sivaramakrishna, C Chandralaliteswaran, M Brahmeswara Rao, Sri Venkateswara Institute of Medical Sciences, Tirupati

L18 Biliary cyst adenoma in left liver with a solid component extending into hilar biliary confluence- Operative video. Anand Bharathan, Gokul Kruba Shankar R, Vadiraj Hunur, Shujaath Asif, Madhura Prasad Suman, Saravanab Subburaj, Mohanprasad VG, VGM Hospital, Coimbatore

E-Video Presentations

B1 Robotic Surgery for Sump Syndrome. Iyoob VA, Aster Medcity, Kochi

B8 Laparoscopic Management of Gallbladder Cancer. Anil K Agarwal, MN Saravanan, Amit Javed, Raja Kalayarasan, BG Vagheesh, GB Pant Hospital & MAM College, New Delhi

B12 Laparoscopy associated CBD exploration. Phani Krishna Ravula, Pace Hospitals, Hyderabad

C8 Laparoscopic Management of Colonic Perforation Post Colonoscopy. Mustafa Razvi, Narsimhan Mohan, Ramesh Ardhana, MMHRC Hospital And Research Center, Madurai

C19 Laparoscopic Total colectomy with Ileorectal anastomosis– Video presentation. Prasad Krishnan, Aster Medcity, Kochi

C20 Robotic Right hemicolectomy– Video presentation. Prasad Krishnan, Deepak Varma, Vipin, Prakash K, Aster
C21 First Ever Robotic Stage One ALPPS in India: For Colorectal Liver Metastasis. Jagadeesh Krishnamurthy, Adithya V Naragund, Basant Mahadevappa, HCG Hospitals, Bangalore

C22 Laparoscopic Ultra-low anterior resection video presentation in a patient with Adenocarcinoma rectum. Gigi Varghese, Christian Medical College, Vellore

O8 Feasibility and safety of Minimally invasive oesophagectomy and Video presentation of a totally minimally invasive Ivor Lewis oesophagectomy: A single centre experience. Sam Varghese George, Myla Yakob, Sudhakar Chandran, Abraham Vijay, Inian Samarasam, Christian Medical College, Vellore

I5 Laparoscopic Management of Gall Stone Ileus. Mustafa Razvi, Narsimhan Mohan, Ramesh Ardhanari, MMHRC Hospital And Research Center, Madurai

L3 Open Right Hepatotomy for Hepatoblastoma. Shaifali Arvind Goel, Hitesh Chavda, Sterling Hospital, Ahmedabad

L4 Laparoscopic Percystectomy For Hydatid Cyst Of Segment III Of Liver Communicating With Bile Duct. Shaifali Arvind Goel, Hitesh Chavda, Sterling Hospital, Ahmedabad

L6 Laparoscopic excision of biliary cystadenoma of liver. Hitesh Jayvant Chavda, Sterling Hospitals, Ahmedabad

L13 Laparoscopic Left Lateral Sectionectomy for a Large HepatoCellular Carcinoma in Non Cirrhotic Liver. Manoj Kumar Ayyappath, Vysakh Rajan, Amala Institute of Medical Sciences, Thrissur

L15 Right Lobe Donor Hepatotomy using Upper Midline Incision. Rohan Jagat Chaudhary, Amit Rastogi, Manoj K Singh, Arvinder Singh Soin, Medanta Liver Institute, Gurugram

L19 One–Stage Thoracoscopic Treatment For Lung And Liver Hydatid Disease. Santosh C Gudimani, Abhishek Bhagvat, Mohan N, Ramesh Ardhana, MMHRC, Madurai


M9 Laparoscopic excision of mesenteric tumours. Vinay Kumar Shaw, Rockland Hospitals, New Delhi

M15 Video presentation: Laparoscopic management of Median arcuate ligament syndrome. Ram Raksha Pal, Deepak Mittal, Sanjay Patolia, Mahendra Narwaria, Asian Bariatrics, Ahmedabad

P8 Uncut Roux-En-Y Frey’s Procedure With Preservation Of Gastroepiploic And Gastroduodenal Vascular Pedicles For Chronic Calcific Pancreatitis With Celiac And Superior Mesenteric Artery Occlusion. Pramod Jagannath, Manipal Hospitals, Bengaluru

P14 Laparoscopic Management of Infected Acute Necrotizing Pancreatitis. Pradeep Jain, Pankaj Sharma, Vivek Goel, Saurabh Bansal, Action Cancer Hospital and Sri Balaji Action Medical Institute, Delhi

P22 Binding Pancreatogastrostomy- Technique video and review of intial experience at a tertiary care centre. Phani Krishna Ravula, Pace Hospitals, Hyderabad

P25 Video Assisted Open Necrosectomy. Abhishek Arun Bhagwat, Santosh Gudimani, Mustafa Razvi, Mohan Narsimhan, Ramesh Ardhana, Meenakshi Mission And Research Center, Madurai

S1 Video of Robotic D2 Gastrectomy with Sutured Roux-en-Y Esophago-jejunal anastomosis. Iyoob VA, Aster Medcity, Kochi
Oesophagus

O1
Robotic assisted laparoscopic oesophagectomy: A single centre experience. Amir Parray, Saumitra Rawat, Belal Asaf, Sir Ganga Ram Hospital, New Delhi

Introduction: Minimally invasive approaches to oesophageal resection have become increasingly used, with a growing body of data documenting excellent outcomes in these patients. In this study, we report the first experience of robotic-assisted laparoscopic oesophagectomy at our centre and associated technical modifications made in response to specific challenges and complications encountered. Methods: This combined retrospective and prospective study was conducted from January 2013 to December 2015 and investigated 22 patients with carcinoma oesophagus in which robotic assisted laparoscopic oesophagectomy was attempted. Results: Robotic assisted laparoscopic oesophagectomy was attempted in 22 patients with oesophageal carcinoma and completed successfully in 21 patients. Male:Female was 12:10 and median age was 56 (range 35–67) years and body mass index was 23 (range 14–35) kg/m². Conversion to thoracotomy was not necessary in any patient, however resection was abandoned in one patient as the tumour was stuck to aorta and inferior pulmonary vein. Conversion of the laparoscopic phase was required in 2 of 21 patients. The median duration of procedure was 270 (range 220–350) min. Median blood loss during the procedure was 150 (range 100–700) ml. Median ICU stay was 1 (range 0–18) days and hospital stay 11 (range 4–30) days. Most common histological subtype in our study was squamous cell carcinoma (62%). A total of 307 lymph nodes were dissected, a median of 20 (range 8–45) per patient. The median number of lymph node metastases per patient was 1 (range 0–9) for the whole cohort and 2 (range 1–9) for the 11 patients with lymph node metastases. The median lymph node ratio in lymph node-positive patients was 13 (range 4–40) per cent. The overall perioperative morbidity (Clavein grade III to IV) and mortality was 42% and 5.0% respectively. Recurrent laryngeal nerve injury was seen in 2 patients (9.5%). Four patients (19%) had anastomotic leak, all recovered with conservative management. One patient (4%) had a persistent chyle leak for which patient was re-operated. There were 9 (43%) respiratory complications that occurred in 8 patients, of which 4 patients required ICD placement. Two patients (9.5%) developed cardiac complications. Our 30 day mortality was 4.5%. At median follow up of 19 (range 6–42) months after surgery, overall median disease-free survival was 19 (95 per cent c.i. 17 to 28) months. Conclusion: In our study we found robot-assisted laparoscopic oesophagectomy is safe and feasible for treatment of oesophageal cancer. The procedure allowed precise en-bloc dissection and appears to be oncologically sound, given that it offers an R0 resection even for locally advanced tumors.

O2
Total laparoscopic midcolonic retrosternal esophageal bypass for corrosive stricture esophagus. Kalayarasan Raja, Biju Pottakkat, Sandip Chandrasekar, JIPMER, Puducherry

Introduction: Colonic bypass for corrosive stricture of the esophagus is traditionally performed using the conventional open approach. Total laparoscopic left colic artery based midcolonic retrosternal esophageal bypass is described in this report. The Case: A 25 year old female presented with acid induced long esophageal stricture starting at 18 cm from incisors refractory to endoscopic dilatation. She was planned for laparoscopic midcolon esophageal bypass after optimization of her nutritional status. The procedure was performed using five abdominal ports. The essential steps of the procedure are colonic mobilization and assessment of the adequacy of the mesocolic vascular arcade by clamping middle colic, right colic, and ileocolic vessels proximal to their branching, creation of the retrosternal tunnel, preparation of left colic artery based colon conduit by dividing terminal ileum proximal to ileocecal junction, neck dissection to expose cervical esophagus and delivering the colonic conduit retrosternally into the neck. Reconstruction was performed by side to side esophagocoloplasty, side to side cologastric and ileocolic anastomosis. The duration of surgery was 410 minutes and blood loss was 150 mL. The patient had an uneventful postoperative course. She was started on oral semisolids following a normal postoperative day seven oral contrast study and discharged on the tenth postoperative day. At 3 months follow up the patient is euphagic to solid diet with an excellent cosmetic result. Conclusion: Total laparoscopic midcolon esophageal bypass is a feasible procedure for the management of corrosive stricture of the esophagus.

O3
Rare Postoperative Complication after Transhiatal Esophagectomy for Carcinoma Esophagus. Roopa Bhushan, Roshan Rao, Rajarajeshwari Medical College & Hospital, Bangalore and Malnad Hospital & Institute of Oncology, Shimoga

Introduction: Esophageal resection have become increasingly used, with a growing body of data documenting excellent outcomes in these patients. In this study, we report the first experience of robotic-assisted laparoscopic oesophagectomy at our centre and associated technical modifications made in response to specific challenges and complications encountered. Methods: This combined retrospective and prospective study was conducted from January 2013 to December 2015 and investigated 22 patients with carcinoma oesophagus in which robotic assisted laparoscopic oesophagectomy was attempted.
73 year old male patient presented with h/o dysphagia, more for solids since 15 days associated with loss of weight. On investigation, upper GI endoscopy showed ulceroproliferative growth between 32-35 cm involving one third of the circumference of the wall and scope was negotiated beyond the lesion. No other growth was seen proximally or distally. Biopsy showed moderately differentiated squamous cell carcinoma. CT chest and abdomen showed circumferential mural thickening of lower one third of esophagus just proximal to GE junction for a length of 2.5 cm. Other blood investigations were within normal limits. Patient underwent transhiatal esophagectomy. Hand sewn single layer esophagogastric anastomosis was done with 3-0 vicryl. Intraoperative course was uneventful. Histopathology revealed moderately differentiated squamous cell carcinoma with 1 out of 20 lymph nodes infiltrated with the tumor. Postoperatively, patient was on feeding jejunostomy feeds till day 10. When oral was started on day 10, patient was unable to tolerate liquids and was aspirating though solids could be swallowed with difficulty. Hence FJ feeds were continued for another 5 days and oral liquids trial was given. As patient continued to aspirate liquids, he was subjected to a upper GI endoscopy. Endoscopy revealed a polypoidal growth at the anastomotic site obstructing 80% of the lumen. Hence endoscopic polypectomy was done following which patient was able to tolerate both liquids and solids comfortably. Histopathology revealed, benign squamous papilloma with no evidence of malignancy.

O4
Laparoscopy Assisted Repair of Corrosive Strictures.
Jayant Kumar Banerjee, Ramanathan Saranga Bharathi, Bharti Vidyapeeth Medical College & Hospital and Command Hospital (Southern Command) & Armed Forces Medical College, Pune

Introduction: Corrosive strictures of upper aero-digestive tract strictures are conventionally treated by open surgery. Surgical advancements permit these strictures to be addressed with minimal invasion. Methods: Corrosive strictures treated minimally invasively over 2 years period (2014-2015) are audited. Colonic mobilization and retrosternal tunneling were done laparoscopically. Iso-peristaltic colonic/ileo-colonic segment, based on left colic vessels, was transposed sub-sternally into the neck, aided by miniceliotomy. Proximal anastomosis was side to side esophago-colic in all except those who underwent pharyngolaryngectomy or partial laryngectomy, where pharyngocolic/pyriform fossa-ileal anastomosis was employed. Distal anastomosis was side to side colo-jejunal in all. Continuity was established between ascending colon/ ileum and the descending colon. Enteral nutrition and ambulation were commenced on 1st post-operative day. Oral nutrition was commenced following a normal contrast swallow study on the 7th post-operative day. Patients were followed up on outpatient basis. Results: Eight adults, aged between 19 to 33 years, were treated for acid induced strictures. Esophagus and stomach were multiply strictured in all. Additionally, duodenum was involved in 2 patients while pharynx and larynx were strictured in 3. Two patients underwent pharyngo-laryngectomy. One patient underwent partial laryngectomy. Median operative time was 240 minutes (range 210-300 minutes). Blood loss was between 100-200 ml. One patient (12.5%) had cervical anastomotic leak on 9th post-operative day, which resolved spontaneously. One patient (12.5%) had proximal anastomotic stricture, needing dilatation thrice. All the patients are on oral solid diet. Follow up ranged from 5 months to 2 years. Conclusions: Colonic transposition, through sub-sternal route, is easily doable with minimal access. It proves efficacious in re-establishing oro-enteral continuity in corrosive strictures of upper aero-digestive tract.

O5
Spontaneous Esophageal Perforations: “Is the outcome better if they survive the initial insult?” JMV Amarjoti, Villalan Ramasamy, R Prabakar, Bennet Duraisamy, Kannan D, MMC, Chennai

Introduction: Spontaneous oesophageal perforation or Boerhaave’s syndrome is associated with a high morbidity and mortality. In a small perforation the classical symptoms of chest pain, vomiting and subcutaneous emphysema (Mackler’s triad) occurs infrequently and as a result early diagnosis of such a catastrophe is often delayed. Till date there are only anecdotal reports and few case series on successful management of spontaneous perforation available in the literature. Here we report a series of 14 patients who were initially treated as non oesophageal chest pain and diagnosis of oesophageal perforation was recognised late. Our article is one of the large volume reports of successful management of spontaneous oesophageal perforation reported till date. Methods: A retrospective review of records from a prospectively maintained database in our department from 2001 to 2016 was done. Data of patients with oesophageal perforation with no identifiable cause were studied. At presentation the demographic data was recorded a thorough history taking and physical examination was done and recorded. The duration of the disease at presentation to our referral centre, condition of patient, investigations performed, surgical treatment offered and outcome were analyzed. Results: 14 men in the age group 22 to 54 years (median=38 years), who presented with spontaneous esophageal perforation were included in the study. Most of our patients were managed by thoracic physician or cardiologist as pyothorax (81.8%) and were referred to us following suspicion of perforation. The diagnosis of esophageal perforation was
made out following drainage of food particles through the intercostal drain tube or by the high amylase content of the drain fluid. From the onset of symptom to diagnosis the median delay in diagnosis was 16 days (range 11-40 days). The commonest symptom at presentation was chest pain (n=14, 100%) followed by respiratory distress (n=12, 85.7%). Eleven men were alcoholic (78.5%) and a history of vomiting was present in 8 patients (57.14%). The site of perforation was in the lower one third of the esophagus in most of our patients (n=12). On evaluation by contrast study and CT scan, the perforation was into the left pleural cavity in eleven patients, into the right pleural cavity in three patients and into both the pleural cavities in two patients. All of our patients were hemodynamically stable on transfer in to our department. After investigation and optimization, three patient was managed conservatively, Trans-Hiatal Esophagectomy was done in nine patients, Abdominal and Right Trans-Thoracic Esophageo-gastrectomy in three patients and Left Thoraco-Abdominal Esophagectomy in one patient. One patient developed anastamotic neck stricture and symptom free. Discussion: Trivial spontaneous perforation in Boerhaave’s syndrome can be a mimicker of cardiac and non-esophageal chest pain. In our experience surgical outcome in patients who survive the initial insult following trivial spontaneous perforation is excellent. A high index of suspicion and early essential investigation will help in reducing the morbidity and mortality.

O6
Thoraco-laparoscopic Repair Thoracic Tracheo-Esophageal Fistula. Ramanathan Saranga Bharathi, Jayant Kumar Banerjee, Command Hospital (Southern Command) & Armed Forces Medical College and Bharti Vidyapeeth Medical College & Hospital, Pune

A novel minimally invasive technique of repairing large upper thoracic cuff induced trachea-esophageal fistula (TEF) is described. Esophagus was thoracoscopically mobilized caudo-cranially and divided at the level of carina. Cervical esophagus was stapled off above the TEF. This created a snug vascularized, un-violated, full thickness, cylindrical esophageal cuff around TEF, completely sealing it. Oro-enteral continuity was established by esophageocoloplasty, using laparoscopy assisted sub-sternal colonic transposition based on ascending branch of left colic artery. Benefits and pitfalls of the technique are discussed and compared with other established techniques of addressing TEF to establish its place in its management.

O7
IgG4 related disease of the Esophagus: A case report. Swaminathan Ravi, Sam V George, Vijay Abraham, Sudhakar

Introduction: IgG4 related disease is a tumefactive, systemic, autoimmune disease with characteristic histopathological features of storiform fibrosis and IgG4 positive lymphoplasmacytic infiltrates. The reported involvement of the gastrointestinal tract is limited to an autoimmune pancreatitis of unknown etiology. Researchers found elevated levels of serum IgG4 in these patients, which led to the thought that the disease might be part of a systemic autoimmune disorder. Upper gastrointestinal involvement is rare and only 3 cases have been reported in literature till date. We present a case of IgG4 related esophageal disease presenting as a stricture. The Case: A 37 year old female was evaluated for progressive dysphagia for solids, then liquids, for 7 years. She was initially diagnosed with a benign esophageal stricture and underwent repeated endoscopic dilatations before presenting to our center. Her symptoms persisted and she underwent cross-sectional imaging as well as endoscopic biopsies, all of which were inconclusive with regard to the probable etiology of the stricture. She had developed anemia of chronic disease and was malnourished at the time of presentation. The patient underwent a feeding jejunostomy in January 2015 and was planned for an esophageal resection at a later date. She underwent minimal access McKeown’s esophageal resection, following which she recovered and is currently asymptomatic on follow up. Histopathological examination of the esophageal specimen revealed lymphoplasmacytic infiltrates with IgG4 positive plasma cells suggestive of IgG4 related disease. Retrospective testing revealed an elevation of serum IgG4 levels. Conclusion: IgG4 related autoimmune disease has a myriad presentation and esophageal involvement is rare. Awareness of the condition may help in early diagnosis and therefore appropriate management.

O8
Feasibility and safety of Minimally invasive oesophagectomy and Video presentation of a totally minimally invasive Ivor Lewis oesophagectomy: A single centre experience. Sam Varghese George, Myla Yakob, Sudhakar Chandran, Abraham Vijay, Inian Samarasam, Christian Medical College, Vellore

Introduction: Oesophagectomy is the mainstay of curative treatment for cancer of the oesophagus. The use of minimally invasive techniques in oesophageal surgery offers hope of reduced morbidity associated with the surgical trauma. Although, the concept of minimally invasive oesophagectomy (MIE) emerged two decades ago, there is still no consensus that the outcomes are clearly superior to those following conventional open surgery. Often Mckeown’s oesophagectomy is employed
in lieu of Ivor Lewis oesophagectomy due to the technical difficulty of performing a minimally invasive anastomosis in the chest. This video presentation is to demonstrate the feasibility of performing a minimally invasive stapled anastomosis in the chest. Also to discuss the safety and efficacy of MIE and whether it reduces the morbidity compared with open oesophagectomy while following the oncological principles. 

**Methods:** A retrospective analysis of the case records of all the patients who underwent oesophagectomy was performed. The patients were grouped into those who underwent conventional open oesophagectomy (Group A) and those who underwent MIE (Group B). The outcome of the surgery between the two groups was assessed based on intra operative and post operative complications, operative time, blood loss, hospital stay and 30 day mortality. The oncological safety was assessed based on the completeness of resection, extent of lymphadenectomy and the overall survival of the patient. 

**Results:** From January 2012 to July 2016, 107 patients underwent oesophagectomy for oesophageal cancers at the Christian Medical College and Hospital, Vellore, India. Out of these 65 patients had conventional open surgery (Group A) and 44 patients had MIE (Group B), one was inoperable. Off the 44 patients who had MIE, 40 had a thoracoscopic mobilization of the oesophagus and anastomosis in the neck and 4 patients had a thoracoscopic stapled anastomosis in the chest. Radical resection (R0) was achieved in a 78% of patients from Group A and 84% patients from Group B. The mean lymph node harvest in Group A was 11 nodes compared to 16 nodes in Group B. Post operative major surgical morbidity (Clavien-Dindo class 3 or 4) of Group A was 5.5% and that of Group B was 5.2%. The mean follow up of the two groups was 10.7 months and 12 months respectively. There was only one 30 day mortality in Group A. 

**Conclusion:** Our study suggests that minimally invasive oesophagectomy is safe and follows the oncological principles with comparable morbidity. A totally minimally invasive Ivor Lewis oesophagectomy is feasible and safe. 

**Video:** The video presentation is a demonstration of a totally minimally invasive (Thoraco laparoscopic) Ivor Lewis oesophagectomy, with intrathoracic stapled anastomosis and infra carinal two field lymphadenectomy.

**O9**

**Robotic Upper GI Surgery– Initial Experience from a Single Center in Kerala. Iyoob VA, Aster Medcity, Kochi**

**Introduction:** Robotic surgery is gaining more and more popularity among surgeons and patients. Role of Robotics in upper GI surgery is evolving. 

**Methods:** Retrospective analysis of prospectively held data on all procedures posted for robotic upper GI surgery beginning from the first case, was done. 

**Results:** Total 12 procedures done on 10 patients in 18 months (From October 2014 to June 2016). The procedures were Esophagectomy 4, Nissen fundoplication 3, Gastrectomy 2, Collis Gastroplasty, Excision of Leiomyoma and removal of gastric band 1 each. Three patients were operated as per their request and rest selected the procedure from the given options. Five patients were partially covered by insurance and 5 were international patients. No case required conversion. Docking time and total duration of the procedures were significantly prolonged for the first 5 cases compared to the last 5. All esophagogastric or esophago-jejunal anastomosis were performed similar to hand sewn technique. None of the patients developed major complications and no leaks from Robotic anastomoses. Grade 1 (Clavien-Dindo) respiratory complication noticed in 2 cases.

**Conclusion:** Upper GI surgery can safely be performed using daVinci Robot with no added risk. Duration of the procedures improve with experience and complex anastomosis can be performed easily with the help of Robot. Cost is the major limiting factor for using this advanced technology.

**O10**

**Laparoscopic Heller’s myotomy (LHM) for Achalasia Cardia by blunt dissection: A safe technique. Kunal Parasar, Hirdaya H Nag, Nisha Solanki, Sanjeev Sachdeva, GB Pant Institute of Postgraduate Medical Education and Research, New Delhi**

**Introduction:** Laparoscopic Heller myotomy (LHM) is the ‘gold standard’ surgical treatment for achalasia cardia (AC). Prevailing techniques of LHM have been associated with a high rate (4-14%) of esophageal perforation. 

**Aims:** To describe a novel technique of LHM for AC by blunt dissection and to report peri-operative outcome. 

**Methods:** Retrospective analysis of patients with AC who underwent LHM by a blunt dissection technique by a single surgeon (the second author) from 2011 to 2015. 

**Results:** Out of total 35 patients; 22 were males (62.8%) and the mean was 32 years. None of the patients underwent endoscopic dilatation or local injection of botulinum toxin. Median preoperative modified Takita dysphagia grade was 3. The mean lower esophageal sphincter pressure before surgery was 41.88 mm of Hg which reduced to 31.30 mm of Hg postoperatively (p value=0.0001). The mean operative time was 72.8 min, and the mean blood loss was 34.5 ml. The median length of post operative hospital stay was three days. No patient required conversion to the open method and there were no intraoperative and postoperative complications. All but two patients (5.7%) had sustained symptomatic relief along with decrease of dysphagia score and lower esophageal pressure. 

**Conclusions:** Blunt dissection technique of LHM is an effective technique to avoid iatrogenic complications.

**O11**

**Factor determining severity of neck leaks following esophagectomy for carcinoma esophagus. Vivek**
Sharma, Azhar Perwaiz, Amanjeet Singh, Adarsh Chaudhary, Medanta-The Medicity, Gurugram

Introduction: Neck leak (NL) is a common complication following radical esophagectomy with variable presentation. Not all of them are benign, hence we analyze our data to identify determinants of clinically significant neck leaks. Methods: Retrospective review of prospectively collected clinical database comprising of patients with neck anastomosis following esophagectomy for carcinoma esophagus in our institution, was performed between March 2010 to June 2016. All patients with neck leaks and their postoperative course were studied. Clinically significant neck leaks (CSNL) were defined as those required invasive procedure, ICU care more than 3 days, re-intubation, mechanical ventilation >2 days, hospital stays >12 days, readmission or death. Univariate and multivariate analysis (Cox proportional hazard model) of various known factors were performed to know the determinants of CSNL. Results: We performed 143 esophagectomies during the study period. Neck anastomosis was performed in 126 (88.1%) and were included in the study. There were 15 (11.9%) neck leaks identified of which 3 (2.3%) had clinically significant leak. Of these only early neck leaks (CSNL) were defined as those required invasive procedure, ICU care more than 3 days, re-intubation, mechanical ventilation >2 days, hospital stays >12 days, readmission or death. Univariate and multivariate analysis (Cox proportional hazard model) of various known factors were performed to know the determinants of CSNL. Results: We performed 143 esophagectomies during the study period. Neck anastomosis was performed in 126 (88.1%) and were included in the study. There were 15 (11.9%) neck leaks identified of which 3 (2.3%) had clinically significant leak. Over 95% of our study population had BMI >25 kg/m2 hence it was excluded as determinant of severity. Univariate analysis showed preoperative neoadjuvant therapy, early leaks (those presented within 3 days of surgery), advance pathological stage, positive lymph nodes (>7), left ventricular ejection fraction <35% and chronic obstructive pulmonary disease (COPD) were significant contributor for CSNL. Of these only early neck leaks (OR= 3.1, 95% CI= 2.14-6.33, p=0.005) and presence of COPD (OR= 2.3, 95% CI= 1.33-3.93, p=0.005) were significant in multivariate analysis. Conclusion: Early neck leaks and in those with known COPD are at more risk sustaining life threatening postoperative consequences following esophagectomy.

O12
Correlation of Pretherapeutic Neutrophil and Lymphocyte Ratio (NLR) and response after Neoadjuvant Therapy in patients with Esophageal Cancer. Santosh Anand, Bhati Gajendra Kumar, Vikram Kate, Biju Pottakkat, Kalayarasan Raja, Vishnu Prasad NR, Rajesh Nachiappa Ganesh, Shyama Prem S, Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry

Aims: Neoadjuvant therapy followed by surgery is the current standard of care for locally advanced, non-metastatic esophageal cancer (EC) patients. However, about thirty percent of the patients are nonresponders and will not benefit from this therapy. Simple, cheap, readily available marker for prediction of response to neoadjuvant therapy is needed. Various inflammatory markers including neutrophil to lymphocyte ratio (NLR) has been reported as a prognostic and predictive marker to response to neoadjuvant therapy in different cancers. In EC patients, the role of NLR as a predictive marker to response to neoadjuvant therapy is controversial and not studied prospectively. Hence, this study was carried out to determine the role of NLR, in predicting the response to neoadjuvant chemoradiotherapy (NACRT) in patients with EC. Methods: This was a prospective analytical cohort study. Twenty patients having Stage two or three EC underwent NACRT followed by esophagectomy during the study period from December 2013 to January 2016. NLR was determined for all the patients, one week before starting the NACRT. Endoscopy and contrast enhanced CT scan of the neck, thorax and abdomen was done before and after NACRT. Clinical, radiological (RECIST criteria), and histopathological response (Becker’s grades) to NACRT was assessed along with the role of NLR to predict response. Results: There was a significant improvement in dysphagia grade (Takita) post-NACRT (p=0.003). The pathological complete response to NACRT was seen in 50% of the patient. 84.6 percent of the patients with low NLR (less than 3.16) were pathological responder (Becker grade 1A/1B), whereas only 42.9 percent of the patients with high NLR (greater than or equal to 3.16) had a pathological response. The low NLR has shown a trend towards the good pathological response to NACRT but it was not found to be statistically significant (p=0.12). Conclusion: There was a trend seen of low NLR associated with good pathological response (Becker’s grade 1A/1B) to NACRT in patients with EC. However, the result of the present study needs to be validated in larger prospective series.

O13
Chyle leaks following esophagectomy for carcinoma esophagus. Monish Karunakaran, Azhar Perwaiz, Amanjeet Singh, Adarsh Chaudhary, Medanta– The Medicity, Gurugram

Introduction: Chyle leak (CL) is a serious complication following radical esophagectomy (RE) leading to prolonged hospital stay, increases septic complications and may contribute to the procedure related mortality. We believe operative attention to detail and meticulous care while performing peri-esophageal dissection and lymphadenectomy helps to prevent CL. Methods: Retrospective review of prospectively collected clinical database comprising of patients with CL following RE for carcinoma esophagus at our institution between March 2010 and June 2016 was performed. During surgery all peri-esophageal tissue was divided using energy source and visible lympho-vascular pedicles were clipped before division. All attempts were made to ligate the thoracic duct whenever feasible. Chyle leak was defined as milky opaque chest tube drainage, presence of chylomicrons or triglycerides level of >110 mg/dl in the pleural drainage. All patients diagnosed to have CL
were treated with modified enteral feeding with low fat diet through tube jejunostomy. Among the study cohort, patients necessitating re insertion of chest tube, clinical or radiological evidence of pneumonitis necessitating ICU care or mechanical ventilation, prolonged hospital stay of more than 12 days (median hospital stay 9+/−2), requiring invasive procedure or surgery or death were defined as clinically severe CL. An analysis of incidences, morbidity and mortality was performed. **Results:** We performed 143 RE during the study period. Seven out of total 143 (4.9%) developed CL. Two following Ivor Lewis esophagectomy (ILE), 4 following transhiatal esophagectomy (THE) and one following thoracoscopic esophagectomy (VATS). Six (4.2%) patients with CL were clinically benign, got better with supportive care and modified enteral feeding. There median hospital stay was 17+/−3 days, chest tube was kept for median of 15+/−2 days. One (0.70%) had clinically severe CL, following THE, required additional chest tube, prolonged ICU admission, failed to improve with medical therapy and ultimately required thoracotomy. He required tracheostomy due persistent respiratory failure and the hospital stay was 33 days. There was no mortality in the study cohort. **Conclusion:** We share our small experience of CL following radical esophagectomy with more or less similar incidences as with the historical cohort. Clinically significant leaks are very less and are largely preventable by proper intra-operative dissection and most of them can be successfully managed by focusing on adequate postoperative supportive care.

**O14**

**Experience in management of Oesophageal Perforations at a tertiary referral centre in India.** Mithun Kumar R, Seshukumar Bylapudi, Mahesh N, Paulvannan S, KMCH, Coimbatore

**Introduction:** Oesophageal perforation is a rare condition that is commonly misdiagnosed and can be fatal if not promptly treated. Iatrogenic perforation is the most common cause followed by spontaneous, traumatic and caustic. Diagnosis is usually challenging and needs a high index of suspicion. The outcome had been generally poor but the results are better when these cases are managed in a high volume centre with a multi disciplinary approach. **Aim:** To analyse the management of oesophageal perforations at a tertiary referral centre in India. **Methods:** Retrospective analysis of prospectively collected data of 8 cases of oesophageal perforations managed in tertiary referral unit between Jan 2013 and Dec 2015. **Results:** Average age was 42 (23-65) years old. Male:female ratio of 5:3. Pittsburgh severity score for oesophageal perforation ranged from 2-14, 1-low risk, 2-intermediate risk and rest all in high risk categories. Etiologies were as follows, 3- iatrogenic, 3- Boerhaave syndrome, 1-trauma secondary to assault and 1-secondary to gastric conduit necrosis following oesophago gastric anastomosis for oesophageal carcinoma. Duration of presentation ranges from 6 hours to 72 hours. 4 cases had delayed presentation (>24 hrs). 2 cases presented with septic shock. CT with oral gastrografin done in all cases. Site of perforations were cervical oesophagus-2, thoracic oesophagus-5 and gastric conduit-1. Two cases had (25%) contained leak. These cases were managed by primary repair in 1, drainage in 2, T-tube repair in 2, T-tube repair with pedicled intercostal muscle flap in 1, Cervical oesophagostomy followed by delayed reconstruction (gastric conduit in 1 and colonic conduit in 1). All cases received broad spectrum antibiotics and antifungal drugs. Feeding jejunostomy was done in all cases during the primary procedure. There were no deaths in our group and the morbidity was 50% (Lung abscess and minimal oesophageal leak in 1 case and - ICD and oesophageal stenting done, contained leak with stricture in 1 case-stenting done, delayed anastomotic leak in 1 case-drainage done, stricture at the FJ site in case- limited jejunal resection done). Duration of hospital stay ranged from 12-52 days. **Conclusion:** Oesophageal perforation is a rare condition and hence high index suspicion is required. Though there were no deaths in our series, but significant morbidity was observed. The management of this serious condition needs a multidisciplinary team to get better results. The management depends on various factors, hence it should be tailored to individual cases.

**O15**

**Colon Interposition in Gastro-Esophageal Cancer Surgery- The Need and Outcome- An Analysis of 31 Patients.** Abdul Rehman, Madras Medical College, Chennai

**Introduction:** Management of tumors involving stomach and esophagus continues to pose problems because of the anatomical complexity due to the location in chest and abdomen. Aiming at R0 resection requires radial, axial and nodal clearance. Post resection and reconstruction strategies will depend upon extent of esophago gastric resection. Stomach remains the best conduit after Esophagectomy and Roux-en-y esophago-jejunostomy after total gastrectomy. But after total gastrectomy and subtotal esophagectomy colon will be the next best substitute. **Aim:** This study is done to analyse the need for colon reconstruction and outcome in patients undergoing esophago-gastrectomy. **Methods:** This is a retrospective study of a prospectively maintained database. We have managed 31 patients between 2001 to 2014. Factors analysed include Demographics, type of tumor, type of surgery, need and route of reconstruction and the outcome. **Results:** The age group was between 24-76 years; 23 of them were men. 7 had Squamous cell cancer (SCC) involving stomach; 6 had Adenocarcinoma stomach involving Esophagus; Distal stomach margin
positive in frozen in 3; stomach conduit not reaching the
neck in 2; conduit ischemia detected on table in 2; post-
operative gastric conduit necrosis in 2 (delayed reconstruction);
synchronous malignancy in esophagus and stomach
in 3 patients. 6 patients had GJ done previously for
ulcer disease- Adenocarcinoma involving esophagus
in 2 and SCC esophagus involving stomach in 4. All
the patients underwent reconstruction with iso-peristaltic
right and transverse colon; 29 in posterior mediastinal
route and 2 (delayed reconstruction) in retrosternal
route. There were 3 hospital deaths and the major
morbidity was cervical leak in four which was managed
conservatively. **Conclusion:** Colon as the substitute can
be used in situations where there is a need to remove
stomach and esophagus in an attempt to give long
segment longitudinal clearance. This is also useful in
situations where there is a problem with gastric conduit.
But it should be attempted in centres doing high volume
colon reconstruction procedures as it is a complex major
surgery involving multiple anastomosis.

**O16**
**Assessment of QoL in relation to the type of
reconstruction in complex corrosive strictures of upper
GI tract.** *Abdul Rehman, Madras Medical College, Chennai*

**Introduction:** Corrosive injuries of the upper
gastrointestinal tract is one of the common cause for Upper
gastrointestinal strictures in the Indian subcontinent.
Frequently, esophageal substitution surgeries with either
tubularised stomach or colon is done to bypass the
strictured esophagus. **Aim:** To analyse the quality of life
following the two types of reconstructive surgeries: gastric
pull-up vs. coloplasty. (Colon Substitution)

**Methods:** We used SF-36 General Health Questionnaire
and self-made disease-specific questionnaire. All Patients who underwent
conduit surgery at our department between March 2009
and February 2016 were asked to fill this questionnaire one
month and one year following the surgery. The results of the
two time periods are compared for better differentiation.

**Results:** A total of 64 patients were included in the study.
Among them 22 underwent gastric pull-up and 42 patients
underwent coloplasty. Patients undergoing coloplasty had
higher mean scores in both physical and mental health
components at one month and one year follow-up and
was found to be statistically significant in most of the
components analysed. Also, reflux related scores; weight
related scores and psychological scores were significantly
higher for coloplasty patients at one year follow-up.

**Conclusion:** Long term results of colon as esophageal
substitute is better than gastric pull-up.

**O17**
**Robotic Assisted Laparoscopic Oesophagectomy:
An Oncologically Adequate Procedure.** *Anand Nagar,
Amir Paray, Belal Bin Asaf, Saumitra Rawat, Sir Gangaram
Hospital, New Delhi*

**Introduction:** Transthoracic approach allows en bloc
resections and extended lymph node dissections, and
provides opportunity for better tumor clearance and
survival, but maybe associated with increased morbidity
that could be reduced by using robotic approach. This study
assessed the oncological adequacy of the procedure in
terms of radicality, lymph node retrieval, lymph node ratio
and overall and disease free survival over the follow-up
period. **Methods:** This study investigated 22 patients who
underwent robotic assisted laparoscopic esophagectomy.
Thoracic part was completed using the robotic system and
gastric mobilization was done laparoscopically. Gastric
conduit and cervical anastomosis were used to restore
continuity. **Results:** Procedure was completed in 21 (95%)
patients. 50% of the cancers were locally advanced; 50%
with cT3/T4, metabolically active paraesophageal lymph
nodes, eight of which received neoadjuvant therapy. PET
CT response evaluation revealed complete response in
25%. The median duration for the thoracic part was 150
(range 115–220) min and that of total procedure was 270
(range 220–350) minutes. We had median blood loss of
150 (range 100–700) ml. The most common histological subtype in our study was squamous cell carcinoma (62%),
with most of the tumours located in the distal oesophagus
or at EGJ (72%). Six tumors were stage I (28%), five
tumours were stage II (23%) and 8 were stage III (37%).
We achieved R0 resection in all the patients. Our median
lymph node retrieval was 20 (range 8–45) per patient. Out
of total of 307 lymph nodes dissected, 41 (13 per cent)
were positive. Lymph node metastases were seen in 11
out of 21 patients. The median number of lymph node
metastases per patient was 1 (range 0–9) for total study
population and 2 (range 1–9) in 11 patients detected with
lymph node metastases. The median lymph node ratio
was 13 (range 4–40) per cent in patients positive for lymph
node metastasis. A total of 31 recurrent laryngeal lymph
nodes were dissected, a median of 1.5 (range 1-3) per
patient. Of the 6 patients with a tumour of mid and upper
oesophagus, two had positive recurrent laryngeal lymph
nodes. The median disease-free survival was 19 (95 per
cent c.i. 17 to 28) months. **Conclusion:** Our study shows
that oncological outcomes of robotic assisted laparoscopic
oesophagectomy are comparable if not superior to open
transthoracic esophagectomy.

**O18**
**Utilization of gastric conduit with gastric outlet
obstruction in the management of corrosive esophageal
stricture.** *Sundeep Singh Saluja, Vaibhav Varshney, Pramod
Kumar Mishra, Kshitij Sisodia, Ashish Sachan, Pushap Sheetal,
GB Pant Institute of Medical Education and Research, New
Delhi*
Introduction: Corrosive stricture of esophagus may be associated with variable involvement of stomach. Stomach is the preferred conduit over colon except when it is not suitable. We analysed the outcome of gastric conduit used in management of corrosive esophageal stricture with antro-pyloric stricture. Methods: Among 101 esophageal replacements performed for corrosive stricture from 2006-15, stomach was used as a conduit in 46 patients. Ten patients with gastric pull up (GPU) had associated distal stricture which was drained. The records of these patients were reviewed and demographics, indications, location of esophageal and gastric stricture, peri-operative findings and early and late outcomes were recorded. Results: The median age was 29 years (16-50), male female ratio was 1.5:1 and median BMI was 15.4 Kg/m^2 (14.5-20.1). Acid was ingested by all and median duration before surgery was 28 weeks (16-72). The indications were unplanned in 4 patients [colonic conduit ischaemia (n=2) or an oversight of antro-pyloric stricture after making the gastric conduit n=2] and planned in six patients (low esophageal stricture, distented stomach). The stomach was drained through loop gastrojejunostomy (n=7) and Roux-en-Y gastrojejunostomy (n=3). One patient died due to respiratory complication. Median hospital stay was 10 days [7-18]. At median follow up of 24 months, remaining 9 patients are taking normal diet without any symptoms related to reflux. Conclusion: Gastric conduit with distal stricture can be used with gastrojejunostomy in selected patients of corrosive esophageal stricture.

O19 RUNX3 and EZH2 co-expression in esophageal cancer tissues: A contradiction. Asad Ur Rehman, Sundeep Singh Saluja, Snigdha Saikia, Aravinda PS, Mohammad Askandar Iqbal, Pramod Kumar Mishra, Subash Medhi, Syed Akhhtar Husain, Jamia Millia Islamia and GB Pant Institute of Medical Education and Research, New Delhi and Gauhati University, Guwahati

Introduction: Runt related transcription factor3 (RUNX3) is a tumor suppressor gene (TSG) that functions through the TGF-beta dependent apoptosis. DNA hypermethylation and Enhancer of zeste homolog 2 (EZH2) overexpression has been suggested to downregulate the RUNX3. The RUNX3 expression and mechanism of its downregulation in esophageal cancer is still unclear. We studied the expression level of RUNX3 and its mechanism of downregulation in esophageal cancer. Methods: 58 samples of tumor tissue along with adjacent normal mucosa as controls were analyzed for mRNA level of EZH2 and RUNX3 genes, their protein expression and subcellular localization. The mRNA expression was studied using qPCR, protein expression and its subcellular localization by immunoblotting and immunohistochemistry. DNA methylation was assessed through Methylation Specific-PCR. Clinicopathological parameters were recorded and correlated with the EZH2 and RUNX3 expression. Results: Among 58 patients, majority (89.6%) were SCC. Thirty seven patients were >50 years while 21 were ≤50 years. Male female ratio was 34:24. The tumor was located upper third (n=6), middle third (n=27) and lower third (n=25). Twenty eight patients (48%) were resectable while 31 patients were either locally advanced unresectable (n=24) or metastatic (n=5). Thirty three (57%) patients received treatment with curative intent while 25 patients received palliative treatment. The median survival of patients treated with curative intent was 14.00±7.17months. Expression of RUNX3 at mRNA level was significantly upregulated (p<0.017). At protein level RUNX3 was upregulated in 34/54 patients (p<0.2). However, significant correlation was seen between EZH2 and RUNX3 expression (p<0.03). Among 24 patients in whom RUNX3 was downregulated, 20 had DNA hypermethylation at the promoter region of the RUNX3 (p<.001). The clinicopathological parameters didn’t show significance with the RUNX3 and EZH2 expression. Also, the expression of RUNX3 in esophageal cancer didn’t show any impact on the survival of the patients (p>0.77). Conclusion: RUNX3 role as a TSG and its association with EZH2 in esophageal cancer is a conundrum. It’s expression did not show any correlation with clinicopathological parameters and did not affect the survival. Therefore as suggested earlier it may not be a useful biomarker for esophageal cancer.

O20 Validation of novel genetic alterations identified in esophageal squamous cell carcinoma (ESCC). Arshid Iqbal Qadri, Nizams Institute of Medical Sciences, Hyderabad

Aim: To validate various novel genetic alterations identified in esophageal squamous cell carcinoma. Since ESCC is the predominant EC subtype in India accounting for more than 80% of all EC cases, it is imperative to improve our understanding of important recurrent deregulated pathways that drive ESCC which may have clinical implications; of note, ESCC is associated with dismal prognosis. There are very few studies addressing this issue in this group of patient from India. Method: The study was performed at Nizam’s Institute of Medical Sciences in collaboration with, Chief of Molecular Oncology, Centre for DNA Fingerprinting and Diagnostics (CDFD), Hyderabad. It was a retrospective and prospective, single-center, cross sectional observational study. In this study, a detailed analysis of the unique results obtained in the previous study with respect to ESCC from the host laboratory (CDFD) was done. The study was conducted in three phases viz. a screening phase, a validation phase and an extended validation phase. In the screening phase, the main findings of the previous study were further refined,
especially in relevance to signaling pathways identified in the genome-wide analysis. During the validation phase, the refined results from the previous phase were validated by using quantitative PCR and at the protein level using immunohistochemistry to selected targets from the tumor samples analyzed during the previous study. In the extensive validation phase, the study will be extended to include more samples. This would aid in identifying the biological context of the results obtained from the previous two phases, in addition to the frequency of such events. **Results:** Forty five cases were included in our study. A novel gain at 10q21 was detected and this region is not reported to be amplified previously in ESCC. A careful analysis of the genes in this region revealed two putative oncogenes viz. EGR2 and JMJD1C. It is expected that copy number gains of genes exert their pro-oncogenic effect by causing an elevation in transcript level. Then we extended our validation at protein level for two important candidate genes EGR2 and JMJD1C. We performed immunohistochemistry and tissue microarray. Further we evaluated stage correlation with EGR2. There is significant difference between EGR2 positive and EGR2 Negative with stage (**P<0.005, Fisher exact test). We further extended correlation between EGR2 and p53 expression. EGR2 expression strongly correlated with p53 wild type. **Conclusion:** 1. A high level novel amplification was identified at 10q21 in the host laboratory and this region does not appear to have been detected previously in ESCC. 2. Two important probable driver oncogenes viz EGR2 and JMJD1C were identified within the 10q21 amplicon. **Recommendation:** Validation of the gain using FISH should be confirmed in a larger independent set of samples. Using cell line and animal models, characterization of the two genes can be performed with respect to their possible role in tumorigenesis, especially since such studies on the two genes have not been performed and not much knowledge is available about the two genes in the literature.

**O21**
Ileocolic artery ligation with delayed ileocolonic conduit improves vascularity of the conduit to be used in corrosive injury esophagus. Yogesh Ashokkumar Bang, Yoganand Dodge, Pradeep R, Gurudu Venkat Rao, AIG Hyderabad

**Introduction:** Esophageal replacement is indicated in patients with corrosive injury esophagus when native esophagus fails to serve as the conduit between pharynx and the stomach. Colon interposition has become conduit of choice in view of satisfactory functioning and good long term results. But the rate of graft necrosis, leakage and strictures range from 33–70%. The cause of these strictures is believed to be ischemia of colonic conduit. So we hypothesize that ligation of ileocolic artery at the time of feeding jejunostomy improves the collateral blood supply from right and middle colic artery to the future ileocolonic conduit. This in turn decreases the incidence of anastomotic leak and subsequent stricture rate after colonic interposition. **Aims:** To study, whether ileocolic artery ligation in patients requiring ileocolonic pull up for corrosive esophageal stricture increases vascularity of the conduit thereby decreasing the anastomotic leak and stricture rate. **Methods:** Total 118 patients who underwent ileocolon pullup for corrosive injury esophagus were evaluated. Prospectively collected data of IC ligation patients (n=32) were collected and compared with retrospective data of patients without IC ligation (n=86). Post operative leak, stricture rate and need of dilatation were noted in both the groups. The results are expressed as mean and standard deviation for continuous variables and as % frequency distribution for categorical variables. Student’s t test, proportion test and Fishers exact test are used to compare both the groups. A p value <0.05 is considered as statistically significant. The Statistical package for social sciences (SPSS 20th version) is used for the analysis. **Results:** Mean age (27.6 years vs 30.2 years), sex distribution in both the groups were comparable. Preoperative hemoglobin (12.1g/dl vs 12.2g/dl ), albumin (3.74g/dl vs 3.71g/dl), and indications of surgery (Failed dilatation– 43% vs 37.5%, non dilatable stricture– 57% vs 62.5%) were also comparable in both the groups. Level of injury in both groups was comparable (Post cricoid– 69.7% vs 65.62%, Esophageal– 31.3% vs 34.3%). Level of anastomosis in both groups was also comparable. (Esophageal– 47.67% vs 50%, pharyngoileal– 52.32 vs 46.8%; p– 0.839 ). Both the groups had comparable post operative ICU stay (3.7 vs 3.4 days), hospital stay (14.8 days vs 14.4 days). Post operative anastomosis leak was seen in 13.3% patients in No IC ligation and 6.66% patients of IC ligation group (p – 0.508). Stricture rate was significantly higher in No IC ligation as compared to IC ligation group. (41.9% vs 6.89% p– 0.0001).Post operative anastomosis stricture dilatation requirement was also significantly higher in No IC ligation as compared to IC ligation group (38.27 vs 6.89% p – 0.0002). **Conclusion:** Pre colon pullup, IC ligation with delayed ileocolon conduit improves vascularity of conduit. When both the groups are compared, patients with IC ligation have lower leak rate, significantly lower stricture rate and less requirement of dilatations.

**O22**
Surgical management of Oesophago-gastric Corrosive injuries- A 13 year experience from a tertiary care centre in South India. Sasank Kalipatnapu, Sam Varghese George, Abraham Vijay Peedikayil, Sudhakar Chandran, InianSamarasam, Christian Medical College, Vellore

**Introduction:** Ingestion of corrosives, both suicidal and accidental, is a devastating incident and can lead to complex injuries involving the oesophagus, stomach
and the laryngeal apparatus. They usually present to the surgical gastroenterology department for stricture management. Stricture formation in various regions of the upper gastrointestinal tract can lead to dysphagia and vomiting. High strictures involving the laryngeal apparatus and pharynx are associated with poor quality of life and recurrent episodes of aspiration, dysphagia and drooling of saliva. We describe the outcome of our experience in surgical management of this complex problem. Methods: A thirteen year retrospective review was conducted of all charts and electronic data of adult patients admitted with corrosive injuries between January 2003 and December 2015. Results: There were a total of 195 patients admitted in the Upper GI unit of General Surgery with corrosive ingestion from 2003 to 2015. The mean age of patients was 30.2 years (range 14-69 years). There was a female predominance with 114 (58.46%) females and 81 (41.53%) males. Acid was the commonest ingested agent 168 patients (86.15%). The other agents included 8 (4.1%) alkalis and 19 (9.3%) corrosive agents with unknown composition. Most of the patients 114 (58.46%) ingested with suicidal intent. Forty three (22%) patients were accidental and 3 (1.5%) patients were due to homicides. Dysphagia was the most common complaint, 12 (6.15%) had grade II, 31 (15.9%) had grade III and 110 (56.4%) had grade IV dysphagia. Oesophagus and stomach was affected in 39 (20%), oesophagus alone in 79 (40.5%) and stomach alone in 45 (23%) patients. Depending on the organs involved, level of stricture and previous operations done, resection or bypass reconstructive operations were performed. Resection was done for 43 patients: 13 patients had transthoracic oesophagectomy and 30 patients had gastric resections. Bypass operations were done for 74 patients: Oesophageal for 70 patients and gastric for 4 patients. One patient had a pharyngocoloplasty with pectoralis major flap and two patients underwent a strictureplasty for a pharyngocolic anastomotic stricture (done elsewhere). Colon in 71 (84.52%) patients was the most common conduit used followed by stomach in 12 patients (6.15%). There was one colonic conduit failure. Conclusion: Corrosive injuries are difficult problems requiring complex operations for their management. The management of these postoperative strictures should be tapered according to the clinical scenario.

O23
Minimally invasive oesophagectomy versus open surgery for oesophageal cancer: A single centre experience. Sam Varghese George, Myla Yakob, Sudhakar Chandran, Abraham Vijay, Inian Samarasam, Christian Medical College, Vellore

Introduction: Oesophagectomy is the mainstay of curative treatment for cancer of the oesophagus. The use of minimally invasive techniques in oesophageal surgery offers hope of reduced morbidity associated with the surgical trauma. Although, the concept of minimally invasive oesophagectomy (MIE) emerged two decades ago, there is still no consensus that the outcomes are clearly superior to those following conventional open surgery. The aim of this study to assess the safety and efficacy of MIE and whether it reduces the morbidity compared with open oesophagectomy while following the oncological principles. Methods: A retrospective analysis of the case records of all the patients who underwent oesophagectomy was performed. The patients were grouped into those who underwent conventional open oesophagectomy (Group A) and those who underwent MIE (Group B). The outcome of the surgery between the two groups was assessed based on intra operative and post operative complications, operative time, blood loss, hospital stay and 30 day mortality. The oncological safety was assessed based on the completeness of resection, extent of lymphadenectomy and the overall survival of the patient. Results: From January 2012 to July 2016, 110 patients underwent oesophagectomy for oesophageal cancers at the Christian Medical College and Hospital, Vellore, India. Out of these 65 patients had conventional open surgery (Group A) and 44 patients had MIE (Group B). The mean lymph node harvest in Group A was 11 nodes compared to 16 nodes in Group B. Post operative major surgical morbidity (Clavien Dindo class 3 or 4) of Group A was 5.5% and that of Group B was 5.2%. The mean follow up of the two groups was 10.7 months and 12 months respectively. There was only one 30 day mortality in Group A. Conclusion: Our study suggests that minimally invasive oesophagectomy is safe and follows the oncological principles with comparable morbidity

O24
Use of 18F Fluorodeoxyglucose Positron Emission Tomography in assessing the treatment response of Neoadjuvant Chemoradiation/Chemotherapy in locally advanced Esophageal and Gastroesophageal junction cancers. Syed Asif, Nikhil Gupta, Shivendra Singh, Rajiv Gandhi Cancer Institute, Delhi

Introduction: Neoadjuvant chemoradiation or chemotherapy followed by surgery is the treatment of choice for patients with locally advanced esophageal and gastroesophageal junction cancers. PET scan is considered an important modality in staging of these cancers. Of late, its use in assessing the response of neoadjuvant therapy is coming up. Whether the radiological response shown in PET scan before and after neoadjuvant chemoradiation or chemotherapy actually transforms into histopathological response and whether it would act as a predictor of overall survival is yet to be established. Aim: To evaluate the role
of 18F-fluorodeoxyglucose-positron emission tomography (FDG-PET) in assessing the response to neoadjuvant chemoradiation/chemotherapy and comparing it with histopathologic response and its relation to overall prognosis in the multimodality treatment of patients with esophageal and gastroesophageal junction cancers. **Methods:** Retrospective data from October 2011 to March 2016 of operable patients with locally advanced carcinoma esophagus or gastroesophageal junction cancers (cT3 and above or node positive) was analyzed. All patients underwent 18F Fluorodeoxyglucose Positron Emission Tomography for initial staging and 4-6 weeks after completion of neoadjuvant chemoradiation or chemotherapy followed by definitive surgery. **Results:** The study included 76 patients. There were 46 males and 30 females. Mean age of this study population was 55.28 years (27-78). Six patients had upper thoracic esophageal cancer, 30 mid thoracic cancers, 25 lower thoracic and 15 patients had gastroesophageal junction cancer. 44 patients had squamous cell cancer and 31 had adenocarcinoma and 1 had adenosquamous carcinoma. All patients received neoadjuvant treatment (54 chemoradiation and 22 neoadjuvant chemotherapy). Post neoadjuvant treatment, PET scan showed complete metabolic response in 16 patients (21%), good response in 57 patients (75%) and stable disease in 3 patients (4%). Mckeown’s esophagectomy was performed in 42 patients, Ivor Lewis esophagectomy was performed in 22 patients, transhiatal esophagectomy in 4 and gastrectomy in 4 patients. In 1 patient palliative Mckeown’s esophagectomy with retrosternal bypass was performed and in 2 patients only trial dissection was performed. In one patient, staging laparoscopy revealed a peritoneal nodule and thus further surgery was abandoned. 17 patients (22%) showed complete pathological response, 33 (44%) showed partial response and 26 (34%) showed no response at all. PET CT response did not corroborate with the final histopathological response (p=0.235). Overall survival of patients showing complete metabolic response is 512.87 days, 526.7 days for patients with good response. 2 out of 3 patients with stable disease have expired. **Conclusion:** FDG PET response to neoadjuvant treatment in carcinoma esophagus and GE junction does not effectively correlate with the final histopathological response and to overall survival. Surgical decision should not be based on PET CT response and should be offered to all the patients irrespective of metabolic response.
Stomach

S1

Video of Robotic D2 Gastrectomy with Sutured Roux-en-Y Esophago-jejunalanastomosis. Iyoob VA, Aster Medcity, Kochi

Introduction: Minimally invasive D2 gastrectomy (MIG) is an accepted form of surgery for gastric cancer. Reconstruction of Esophago-jejunal anastomosis is the most difficult step and most often is performed by using circular or linear staplers. Robot help to do this procedure much easier and esophago-jejunal anastomosis can be performed similar to open technique. Methods: 42 year old Omani lady presented with carcinoma of the body and antrum of the stomach which was proved by endoscopic biopsy. Staging by PET was done which showed limited disease and planned for D2 total gastrectomy. After informed consent she underwent Robotic D2 total gastrectomy with esophago-jejunal anastomosis (with interrupted 2-0 Vicryl) and Feeding Jejunostomy (video). Procedure took 330 minutes and blood loss was less than 100 mL. She had no postoperative complications and was discharged on 8th postoperative day. Total 34 LNs were present in the specimen and margin was negative. Conclusion: Radical gastrectomy for carcinoma of stomach can be performed using daVinci Robot with no added risk and adequate LN clearance. The use of Robot helps the surgeon to reproduce the open technique of anastomosis by minimally invasive method easily.

S2

Comparison of lymph node yield and short term outcome between two different techniques of splenic hilar dissection in D2 total gastrectomy: A prospective case control study. Rohan Shetty, Kartik K, Deepak G, Pramil K, Kamalesh NP, Shaji P, Prakash K, PVS Memorial Hospital, Kochi

Aim: To compare two different techniques of pancreas and spleen preserving D2 radical total gastrectomy in terms of:

Primary objective– Compare lymph node yield (especially Station 10 and 11).

Secondary objective– Analyze the short term outcome in terms of morbidity and mortality.

Methods: It’s a prospective cohort study, wherein 24 Patients who had undergone total gastrectomy for type III GE junction tumor, proximal gastric cancer and linitis plastica with curative intent from March 2014 to May 2016 were included. All even number patients were included in case group and odd number patients were included in control group. Case group patients underwent D2 total gastrectomy with complete clearance of splenic hilar and splenic artery nodes by performing a complete mobilization of spleen and distal pancreas from their attachments and then delivering the spleen outside to facilitate lymph node clearance (Ex-vivo). Control group underwent D2 total gastrectomy with complete clearance of splenic artery and hilar nodes without mobilization of spleen and distal pancreas (In-vivo). Stations 10 and 11 lymph nodes were separately tagged and sent for histopathological analysis. Post-surgical analysis in terms of primary and secondary outcome were compared and analyzed. Results: There were 12 Patients in in-vivo group, and 12 patients in ex-vivo group. The demographics between the 2 groups in terms of age, sex, and location of tumour were almost comparable. The operating time was longer in the in-vivo group but the estimated blood loss was comparable. The number of total lymph nodes harvested from station 11 was 47 in ex-vivo compared to 48 in in-vivo group and the number of positive nodes were 14 and 9 respectively. The number of lymph nodes harvested from station 10 was 11 in ex-vivo group and 23 in in-vivo group and the number of positive nodes were 5 and 6 respectively. Average number of lymph nodes harvested from station 11 (splenic artery) was 3.92 in ex-vivo vs 4 in the in-vivo and it was 0.91 vs 1.91 for the station 10 nodes respectively. The metastatic degree in station 11 was 1.16 in ex-vivo vs 0.75 in in-vivo group, whereas it was 0.41 vs 0.5 for station 10 lymph nodes. One patient in non-mobilization group had a re-exploration for splenic artery pseudoaneurysm bleed. 3 Patient in non-mobilization group had pulmonary morbidity in terms of pleural effusion/atelectasis and abdominal morbidity in terms of sub-acute intestinal obstruction but none in mobilization group. No group had mortality. Both groups were comparable in terms of speed of recovery and hospital stay. Conclusion: Both in-vivo and ex-vivo dissection of No. 10 lymph nodes could be performed safely. It seems that ex-vivo dissection of No. 10 lymph nodes can result in a shorter surgery time with no deleterious effect on lymph node harvested and added morbidity or mortality.

S3

Retrograde jejuno-gastric intussusception a delayed complication of gastrojejunostomy. Rajvillas Anil Narkhede, Pavan V, Narendranath Nagoti, Vijaykumar C Bada, Global Hospitals, Hyderabad

Retrograde jejuno-gastric intussusception (RJGI) is a very rare but potentially hazardous long term complication following gastrojejunostomy, unless diagnosed early and treated surgically on emergent basis. Although reported sparingly in literature, diagnosis should be suspected.
in patients with gastro-jejunostomy who presents with hematemesis and upper abdominal mass. Although the reported incidence of RJGI was less than 0.1% following gastric resection, the diagnosis is made only when it presents in symptomatic patients. However in symptomatic patients the mortality rates are reported as high as 50% when surgery was delayed for more than 48 hours. We report such case where patient presented with upper abdominal pain, hematemesis and was found to have mass in upper abdomen. The diagnosis was established with computed tomography and upper GI endoscopy which showed gangrenous intussuscepted jejunal loops. Patient was managed with resection of the efferent jejunal segment and jejuno-jenunal anastomosis. However afferent and efferent loops were fixed with seromuscular sutures for prevention of possible recurrence. Literature review revealed it as type III jejuno-gastric intussusception.

S4 Acuphagia - The Cause Of A Bizarre Bezoar!!! Anoop Sivakumar

Foreign body ingestion is a common scenario which we come across in surgery and paediatrics. Swallowing can either be spontaneous or deliberate. The deliberate ingestion of foreign bodies is a comparatively rare psychopathological behaviour. Acuphagia is deliberate ingestion of metallic objects ranging from small pins and needles to even blades and magnets. Bezoars are collections of indigestible materials found in GIT and most common site being the stomach. Intentional foreign body ingestion in adults is less common and it requires special attention and management. Technical difficulty in removing the foreign body, complications associated with the delay in diagnosis and treatment, migration of foreign body extraluminally and site, shape and position of the sharp end makes this entity more interesting. Here we report an interesting case of intentional ingestion of nails by a gentleman after a fight with the family members. On imaging, it was found that all the nails were clumped in the stomach forming a mass- NAILOBEZOAR. Exploratory laparotomy was done and 108 nails were removed. Post operative period was uneventful. During the course of treatment he was evaluated by department of Psychiatry and managed accordingly.

S5 Isolated metastasis at the drain site after gastric resection – A rare case. Muppa Viswanath, Narayana Medical College, Nellore

Introduction: Cutaneous metastasis are very rare presentation from intra-abdominal malignant solid tumors such as gastric adenocarcinoma. Skin metastasis of cancer is rare, occurring in 0.7%–5% of cancer patients. Increased frequency of up to 9% has been reported in selected patient series. They occur as the first sign of the underlying tumor, during the course of the disease or as a complication of percutaneously performed diagnostic or therapeutic procedures. Cutaneous metastasis may occur through lymphogenous spread, intravascular dissemination, direct extension of tumor and surgical implantation. Wong et al added the spread along embryonal remnants such as the urachus to the aforementioned mechanisms. Here, we describe a patient who developed a cutaneous metastasis at the site of a previous surgical drain after potentially curative resection of a gastric adenocarcinoma with surgical implantation is the most probable spread. The Case: 40 year old male patient who underwent distal gastrectomy 1 year back with T4N2M0 adenocarcinoma came after 3 months of the surgery after he received chemotherapy with complaints of swelling at the drain site, which was not painful. FNAC of the swelling showed adenocarcinoma. A CT scan revealed no local recurrence at the resection bed and no distant metastases. Conclusion: Development of cutaneous metastasis after gastric carcinoma resection indicates tumor recurrence or disseminated disease and is associated with poor prognosis. However, any skin lesions at sites of surgical scars in patients with previous gastric cancer resection should be biopsied for the detection of tumor recurrence and initiation of appropriate treatment, which, in selected patients without widespread metastases, may prolong survival. Survival after diagnosis of cutaneous metastasis ranges from 1 to 34 months.

S6 Billroth I anastomosis using a circular stapler for corrosive gastric stricture- A Novel Technique. Mohsina Subair, Sathasivam Sureshkumar, Samanna Gubbi Sreenath, Vikram Kate, JIPMER, Puducherry

Introduction: The clinical presentation of corrosive gastric injuries varies from acute gastric injuries such as hyperemia, extensive ulcers, mucosal erosions to chronic gastric strictures. Acids tend to pool in the pre-pyloric area due to the corrosive induced pylorospasm and tends to produce short ring stricture of the stomach described as Type I gastric stricture. Billroth I is the most commonly carried out procedure for Type I gastric stricture. Conventionally, this procedure is carried out by doing a limited resection of pre-pyloric stricture with the pylorus followed by gastroduodenal hand-sewn anastomosis. Here we describe a novel technique of carrying out Billroth I reconstruction of a type I gastric stricture using a circular stapler for gastroduodenal anastomosis. Being an end-to-side anastomosis, the vascularity will be superior when compared to conventional hand-sewn end-to-end anastomosis. The Case: A 14-year-old girl, presented to the department of surgery seven days following consumption of toilet cleaner (acid). The patient presented...
with complaints of epigastric pain and vomiting which was managed conservatively. The patient presented with features suggestive of gastric outlet obstruction one month following injury. Upper GI endoscopy revealed a normal esophagus and inflamed pylorus with gastric outlet obstruction. A nasogastric tube was inserted under endoscopic guidance and a feeding jejunostomy was carried out to improve the patient’s nutritional status. After a period of two months, an UGIE was carried out to which revealed a normal esophagus and a pre-pyloric stricture. Barium swallow was done which confirmed the endoscopic findings. The patient was posted for elective Billroth I gastrectomy. Intraoperative details: Under general anesthesia, in supine position, abdomen was opened through an upper midline incision, in layers. A full thickness stricture was noted at the pre-pyloric region for a length of 2 cm. The rest of the stomach was found to be normal. The right gastric and right gastro-epiploic artery was identified and ligated following which resection of the stricture with the pylorus was carried out. A sizer was introduced into the first part of the duodenum to determine the size of the stapler needed for the anastomosis. The anvil was inserted into the duodenal end and it was fixed with purse string sutures. The shaft of the 28 mm EA circular stapler was inserted through the open end of the stomach close to the greater curve about 5 cm from the distal cut end. The anvil and the shaft were locked and an end-to-side gastro-duodenal anastomosis was carried out with the end of the duodenum to the side of the posterior wall of the stomach. The distal cut open end of the stomach was resected and closed with a linear cutter. Abdomen was closed in layers and patient withstood the procedure well. Post-operatively patient made uneventful recovery. Patient remains asymptomatic and has gained weight during the follow up period of one year. Conclusion: A circular stapler can be satisfactorily used for carrying out a gastro-duodenal anastomosis.

S7
Enhanced recovery protocol for subtotal gastrectomy-A prospective cohort to assess whether post-operative recovery following subtotal gastrectomy can be enhanced by following a structured protocol. Nandu Nair, Vijay Abraham, Aster Medcity, Cochin and CMC, Vellore

Introduction: The concept of Enhanced Recovery After Surgery (ERAS) or Fast Track Protocol was pioneered by Bardram. Later popularised by Kehlet and Wilmore, ERAS consists of a protocol of interventions aimed at stimulating early recovery following surgery and reducing the stress response to surgery thereby reducing the morbidity following a major procedure. It was initially tried for elective colorectal surgeries and has been tried in cardiovascular surgeries, urological procedures (radical cystectomy, nephrectomy) as well. Recently some studies have been done on the effectiveness of ERAS protocol in upper GI procedures. Although most of these studies show promising results by reduction in the duration of post-operative hospital there is no definite consensus. There is no established guideline for ERAS in upper GI surgery. Hence more studies and meta-analysis is required before the effectiveness can be conclusively proven. Aim: To study effectiveness and feasibility of ERAS protocol in patients undergoing subtotal gastrectomy for carcinoma stomach in Department of Surgery, Christian Medical College, Vellore. To study whether ERAS protocol reduces the duration of post-operative hospital stay in patients undergoing subtotal gastrectomy during the study period. To study the effect of ERAS on morbidity following subtotal gastrectomy. To study the compliance of study population to ERAS protocol. Methods: Prospective observational cohort study was done on patients with a confirmed tissue diagnosis of adenocarcinoma stomach, who underwent elective subtotal gastrectomy at CMC hospital. All patients followed the modified ERAS protocol which was approved by the institutional review board which consisted of preoperative, intraoperative and postoperative interventions. They were followed up daily after operation to record adherence to protocol and any deviation from the protocol was recorded. These patients were discharged as per the predetermined criteria for discharge. Patients were kept under regular follow up for a period of one month to watch for any postoperative complications. Primary outcome was duration of hospital stay and secondary outcomes studied included protocol compliance, postoperative complications (as per Clavien– Dindo classification), day of passage of flatus and faeces following surgery, day of initiation of normal diet and any need for readmission. Data was analysed using STATA software. Results: 44 patients were included in the ERAS group and were compared with historical controls. The median duration of hospital stay was less in patients following the ERAS protocol (6 days) as compared to the historical control group who received conventional postoperative care (7 days) however the difference was not statistically significant. Among the components of modified ERAS protocol used, early nasogastric tube removal was the intervention which had least adherence due to surgeon preference. ERAS following subtotal gastrectomy was not associated with any increase in rate of immediate postoperative complications or any increase in morbidity.

S8
Gastric cancer in the young. Abdul Rehman, Madras Medical College, Chennai

Introduction: In Indian population Gastric cancer commonly occurs in the 6th and 7th decade of life. Younger patients present usually at advanced stage with
Gastric volvulus can be classified based upon the etiology, rotational axis, and time of presentation. The management of gastric volvulus can be by surgical and endoscopic methods. Surgical management is by derotation and reduction of hernia and repair which can be done by laparoscopic methods also. Other techniques include gastrojejunostomy, fundo-antral gastrostomy (Opelzer’s procedure), partial gastrectomy, division of any congenital bands, simple gastropexy, gastropexy with division of the gastrocolic omentum (Tanner’s procedure), all with or without repair of diaphragmatic hernia, have also been described.

S10
Cystic Lesion in Lesser Sac- A Diagnostic Dilemma.
Gopalan Sathiyavelavan, S Karuppannan, Sholai Medical Center and CARE 24 Speciality Hospital, Erode
A 65 year old male presented with vague abdominal pain for two months and occasional non bilious vomiting for two months. The frequency of vomiting increased for past two weeks. Clinical examination revealed epigastric fullness. CECT abdomen done showed a cystic lesion in lesser sac abutting lesser curvature stomach and anterior margin of pancreas. OGDScopy showed extrinsic compression near high lesser curvature and no mucosal abnormality. Patient underwent surgery- sleeve resection of lesser curvature stomach along with the tumor. Post op period uneventful. Pathological analysis showed that the tumor was arising from gastric wall and composed of spindle cells with a mitotic rate of 4per20HPF. IHC indicated the tumor is positive for CD117, CD34 and Vimentin confirming GIST. Patient recovered well and advised for medical oncology opinion regarding adjuvant therapy.

S11
A Rare Case Report: Rapunzel Syndrome. Kirtana Shrenik Shah, S.B.K.S. Medical Institute & Research Center, Vadodara
Bezoars are concretions in gastrointestinal tract that increase in size by continuous accumulation of non-absorbable food or fibres. The incidence of trichobezoar is reported to be very low (0.4%). Rapunzel Syndrome is an unusual form of bezoar extending from stomach to the small intestine or beyond. Trichobezoars are predominantly found in emotionally disturbed or mentally retarded youngsters especially females having long hair who pluck their own hair and swallow them. Most patients with trichobezoars suffer from psychiatric disorders including trichotillomania (pulling out of their own hair) and trichophagia (eating of hair). Trichobezoars form when hair strands, escaping peristaltic propulsion because of their slippery surface, are retained in the folds of the gastric mucosa. Patients present with abdominal pain, early satiety, nausea and vomiting, obstruction, and peritonitis,
weight loss, anorexia, hematemesis and intussusception. Patients may also present with severe halitosis and patchy alopecia. The patients may remain symptom-free for years. We present a case of 38 year old female having Rapunzel syndrome. She had presented with complains of lump in abdomen, pain in abdomen and early satiety for the past 2 months. She gave the history of eating her own hair till the age of 7 years. Preoperative diagnosis was made with barium swallow X-rays, ultrasonography and contrast enhanced CT scan of the abdomen. Gastrotomy was done and diagnosis was confirmed. Patient was discharged with stable vitals. A 6 month follow up showed no complains.

S12  
Gastric adenocarcinoma in a male patient with Plummer-Vinson syndrome. Mathews James, Anandhi Amaranathan, JIPMER, Puducherry

We present a case of gastric carcinoma associated with Plummer-Vinson syndrome. This 52 year old man presented with the history of progressive dysphagia and severe anemia requiring transfusion. Further evaluation revealed esophageal webs and ulceroproliferative growth in the pylorus and duodenum. This syndrome is characterized by a triad of iron deficiency anemia (IDA), dysphagia and esophageal webs. It is seen mostly in middle-aged women. It is considered as a pre-cancerous condition as 3-15% of the patients develop squamous cell carcinoma involving upper digestive tract mainly oral cavity, tongue, hypopharynx, and esophagus. However, gastric adenocarcinoma has rarely been reported in PVS. A literature review has shed light on 5 similar cases so far, all of whom where female patients. We had a male patient who had developed advanced antral adenocarcinoma in the background of PVS. Due to the poor performance status that precluded chemotherapy, the patient was given palliative treatment.

S13  
Mesenteroaxial Gastric Volvulus. Nikhitha D Shetty, Ashwinikumar Kudari, Jayant Gul Mulchandani, Narayana Hrudayalaya Hospitals, Bengaluru

Introduction: Gastric volvulus is a rare disease, often seen in association with a diaphragmatic hernia. 3 types of gastric volvulus have been described: Organoaxial, Mesenteroaxial and combination-unclassified; with the variant presented in our case being the less commonly encountered mesenteroaxial type. Although it classically presents with a Borchardt’s triad of vomiting, epigastric pain and an inability to pass an NGT, diagnosis can be challenging in patients presenting with vague symptoms.  
Methods: We present a case of a 38 year old male with a history of hiatal hernia, who presented to the emergency department with a 2 day history of epigastric pain associated with persistent vomiting. CT of the abdomen was done which demonstrated a mesenteroaxial type of gastric volvulus with intrathoracic location of lower body and antrum. He underwent laparoscopic reduction of the volvulus with mesh repair of the diaphragmatic hernia.  
Results: Post operative period was uneventful. He was started on oral feeds on day 3 and was discharged in a stable condition on day 7. On follow up 2 weeks later, patient was asymptomatic and doing well. Conclusion: Gastric volvulus is to be considered in the differential diagnosis of patients with upper abdominal pain with continuous vomiting. It is imperative to note that a delay in diagnosis of this disease may prove life threatening and modes of diagnosis and treatment have evolved with the advent of CT and laparoscopic surgery.

S14  
Gastric lipoma presenting with hematemesis- Rare case report. Balamourougan Krishnaraj, Baskaran Dhanapal, Sarath Chandra Sistla, Gomathi Shankar V, Vignesh Natesan, Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry

Gastric lipoma is a rare lesion and account for only 5% of gastrointestinal tract lipomas and less than 1% of all gastric tumors. They are most commonly located in the submucosal layer of the antrum and are often asymptomatic, and may be discovered incidentally. However, they may present with gastric outlet obstruction, intussusception, GI bleeding and rarely, malignant transformation into liposarcoma. CT scan is often diagnostic, which demonstrates well-defined submucosal mass lesion with attenuated fat density. They can be treated by enucleation alone. Extensive resection of stomach may not be needed. Our patient was a 65 year old female who presented with hematemesis. UGIE demonstrated a bulge in the posterior wall of stomach with ulceration of mucosa over the summit of the swelling. Subsequent CECT demonstrated a well circumscribed lesion in the submucosal layer of posterior wall of antrum with attenuated fat density. Enucleation of the lesion was done and the patient recovered well after the surgery. Her postoperative HPE was consistent with a benign lipoma. Since the patient had characteristic CECT findings, preoperative tissue diagnosis was not needed.

S15  
Atypical presentation of a stomach GIST. Balamourougan Krishnaraj, Jan Sujith, Sarathchandra Sistla, Bhaskaran D, JIPMER, Puducherry

Gastrointestinal stromal tumours (GIST) are rare mesenchymal tumours that usually present as solid abdominal masses. Atypically, they have presented as large cystic lesions which may mislead diagnosis. Limited reports exist of large cystic tumours that were postoperatively found to be GIST arising from stomach or
duodenum. We present the case of a 75 year old lady who had vague abdominal pain and distension for 2 months. Abdominal examination revealed a large cystic mass occupying left and central abdomen. Imaging showed a 27x22x20 cm multi-loculated, cystic, hypodense mass with few enhancing solid components. Based on location and appearance, a preoperative diagnosis of pancreatic mucinous cystadenocarcinoma was considered. On exploratory laparotomy, a 24x22x18 cm solid cystic mass was seen, arising from the posterior surface of fundus of stomach. There were no metastases or pelvic deposits. Wedge resection of stomach, distal pancreatectomy and splenectomy were done. Histopathological examination of the specimen revealed epithelioid type of GIST with 15 mitoses/50 hpf. Tumour cells were CD117 and Vimentin positive. Due to the high risk features, the patient was started on adjuvant imatinib. We conclude that GIST should be considered as a differential diagnosis for large cystic abdominal masses, as this report has emphasized.

S16
Radical D2 gastrectomy for carcinoma of the stomach: An Indian experience. Nabi Prithviraj, GB Pant Hospital, New Delhi

Background: Radical gastrectomy with N2 lymphadenectomy (D2 gastrectomy) has been shown to have survival advantage in Japanese and western trials but Indian experience is limited. Methods: A retrospective analysis of prospectively collected data of patients with carcinoma of the stomach considered for surgery from 2009 to 2014. The intraoperative details, pathological TNM stage, and survival were analysed. Results: Total number of patients were 58,34 patients (59%) had radical gastrectomy with N2 lymphadenectomy (D2-gastrectomy), 11 (18%) patients had locally advanced disease, and 13 (22%) patients had metastatic disease. Mean blood loss was 180 ml (+85SD) and mean duration of surgery was 286 (+65SD) minutes. Median length of hospital stay was 8 days (6-17 days), 30 day mortality was zero and total four patients (12%) had grade III to IV complications (Clavien–Dindo classification). The median number of lymph nodes removed were 18 (7-31). Pathological TNM stage was II in 8%, III in 47% and IV in 41%. The median survival of patients undergoing curative resection was 28 months and 6 months in patients in the other group with statistical significant P value of <0.001. Conclusion: Radical gastrectomy with D2 lymphadenectomy may improve survival of Indian patients with carcinoma of the stomach.

S17
Prospective evaluation of the diagnostic performance of a new Helicobacter pylori stool antigen immunochromatographic test. Mohsina Subair, Sahoo Kumar Ashok, Srinivasan Sanjeev, Bhosale Namrata, Cherian Anna Anchu, K Madhuvanthi, Mandal Jharna, Sathasivam Sureshkumar, T Mahalakshmy, Vikram Kate, JIPMER, Puducherry

Introduction: Several non-invasive methods are used to diagnose Helicobacter pylori infection of which serology and urease breathe test (UBT) are the most common. While serological tests have decreased reliability, the UBT is expensive, difficult to administer and is less accessible thus popularizing H. pylori Stool Antigen (HpSA) tests. The need for specialized equipment and the delay in results in enzyme immune assay (EIA) have made immunochromatographic (ICT) HpSA assay the preferred tool. This study was carried out to determine the efficacy of the HpSA by the immunochromatographic method (HpSA-ICT) for the diagnosis of H. pylori infection and to assess its diagnostic accuracy. Methods: The study was a prospective clinical analytical study. All patients who underwent upper gastrointestinal (GI) endoscopy in the department of surgery in a tertiary care center were included. The combination of histology and urease was used as a gold standard for the diagnosis of H. pylori infection. A positive H. pylori status was defined as when either or both the tests were positive for the organism and negative when both the tests failed to demonstrate its presence. Stool specimens were collected and stored at 2-8 degree Celsius till the CORISBIO test (HpSA-ICT) test was carried out by a blinded investigator. The diagnostic performance of Pylori Cassette method and Pylori-Strip (Dipstick) method and combination of the two were compared to the pre-defined gold standard. Correlation of the efficacy of the test with endoscopic, histological and demographic parameters was also carried out. Results: A total of 160 patients were included in the study, 17 were excluded from analysis due to incomplete data. The prevalence of H. pylori infection was found to be 20.9% (30/143) by gold-standard method. The diagnostic performance of cassette method and dipstick method respectively were sensitivity 73.3% (22/30), 73.3% (22/30); specificity 97.3% (110/113), 98.23% (111/113); positive-predictive value (PPV) 88% (22/25), 91.66% (22/24); negative-predictive value (NPV) 93.22% (110/118), 93.27% (111/119) and overall accuracy 92.3% (132/143), 93% (133/143) when compared with the gold standard. The combination of the tests had a sensitivity of 73.3% (22/30); specificity of 98.23% (111/113); PPV of 91.66% (22/24); NPV of 93.27% (111/119) and accuracy of 93% (133/143). The prevalence of H pylori in sub-groups with endoscopic findings of normal study (40), antral-gastritis (70) and gastric erosions/ulcer (21) were 22.5%, 20% and 19% respectively and those with histological finding of chronic gastritis (107) and lymphoid aggregates (10) were 22.5% and 30% respectively. The performance of the kit was unaffected by sub-group analysis. The diagnostic performance in patients with intestinal metaplasia could not be evaluated as H pylori prevalence was zero. Conclusion: The stool based ICT is rapid, non-invasive diagnostic test
with a high specificity, positive and negative predictive value and overall accuracy. However, as the sensitivity of the test is low it should be primarily used as a rapid office test to determine eradication of H. pylori. This will obviate the need for endoscopic tests or the urea breath test to confirm H. pylori eradication.

**S18**

**Pattern of lymphatic spread in carcinoma stomach and it's clinical significance.** Gandi Vikram, Lakeshore Hospital, Kochi

Introduction: Metastasis is a critical event affecting the prognosis of gastric cancer patients. The most common metastatic sites of gastric cancer are the lymph nodes followed by the peritoneal cavity and distant organs such as the liver, lungs and bone, through hematogenous metastasis. Lymph node metastasis is a well-established critical prognostic factor and predictor of gastric cancer recurrence. Therefore, extensive investigation of lymphatic metastasis is likely to increase our understanding of the metastatic mechanisms and improve the effectiveness of surgical treatment of gastric cancer patients. Aim: The objective of this study is to know the risk factors associated with lymphatic spread in gastric cancer like tumour location, depth of invasion, size of tumour, histological type, age and sex. And also to know the pattern of lymphatic spread in each lymph node stations as per the tumour location. Methods: All the subjects in this study are divided into 6 groups depending on the position of growth in the stomach as 1) GE junction tumours, 2) Proximal tumours, 3) Mid body tumours, 4) Distal and mid body tumours, 5) Distal group and 6) Linitus plastica. Basing on the position of growth in stomach, the patients are subjected to either D2 near total gastrectomy or D2 total gastrectomy or D2 extended total gastrectomy. After the gastrectomy, all the lymph nodes from the specimen are dissected into various lymph node stations as per the Japanese classification of gastric lymph node stations. These lymph node stations are placed in various formalin bottles, were labeled as station 1 to station 12 and were sent separately for histopathological examination along with gastrectomy specimen. Result: A total of 101 patients underwent gastrectomies during the period from August 2014 to March 2016 of which 2 were excluded from the study as they underwent only palliative gastrectomies. Of the 99 patients, intraoperative station wise nodal sampling was done in 71 patients. Most common age group is 60 to 70 years. Male to female ratio is 2.3:1. 84% of patients had nodal involvement. Distal growths account for 50% of cases. 59% of tumours are poorly differentiated. 87% of tumours are in grade 3 or more. Association was also shown with ASA grade of 3 or more. Conclusion: Intraoperative station wise nodal sampling should be done in all gastrectomies to increase the yield of nodes. It also helps in understanding the pattern of lymphatic spread. Since most of our patients present with locally advanced gastric malignancy and also with tumour biology of poorly differentiated adenocarcinoma, both of which are directly related to number of lymph nodes involved, it is advisable to do a radical D2 lymph nodal dissection in all patients with carcinoma of stomach.

**S19**

**Severity of Complications following Radical Surgery for Carcinoma Stomach and their Associated Risk Factors.** Deeksha Kapoor, Azhar Perwaiz, Amanjeet Singh, Adarsh Chaudhary, Medanta- The Medicity, Gurugram

Aim: Most studies about complications following gastric resection have been performed without considering its severity. The purpose of this study was to prospectively analyze all complications in patients undergoing radical gastrectomy for cancer according to the severity grade using Clavien-Dindo system, in order to identify risk factors for postoperative complications and their impact on overall outcome. Methods: Retrospective analysis of prospectively collected data was conducted of all patients undergoing radical gastrectomy for carcinoma stomach at our institution between March 2010 and June 2016. Complications were categorised according to Clavien-Dindo (Ann Surg 2004;240:205–213) classification, and correlated with their pre-operative factors. The following risk factors were studied: age, BMI, sex, operation method, extent of resection, duration of surgery, blood transfusions, disease stage, and lymph node ratio. Multivariate logistic regression was used to evaluate the association between risk factors and presence of complications. Results: Out of 363 patients who underwent surgery with a curative intent, 217 (59.7%) events occurred in 137 (37.7%) patients. The numbers of grade I, II, IIIa, IIIb, IVa/b, and V complications were 53 (14.6%), 89 (24.5%), 58 (15.9%), 8 (2.2%), 5 (1.3%), and 4 (1.1%), respectively. Grade I and II complications were commonest with surgical site infection being most frequent event. BMI of less than 22.5 kg/m2, preoperative neoadjuvant therapy, gastric outlet obstruction and need for peri-operative blood transfusion were significant associated risk factors on multivariate analysis. Clinically significant complications as IIIb, IV occurred in 17 (4.6%) and were associated with age >60 years (OR, 2.1 95% CI, 1.22-5.12, p=0.005), total gastrectomy (OR, 3.1 95% CI,2.14-6.33, p=0.005), positive lymph node of >7 (OR, 1.48 95% CI, 1.01-3.12, p=0.005). Association was also shown with ASA grade of 3 or more. Conclusions: Complications following radical gastrectomy largely are less severe in nature. Risk factors associated with clinically sever complication are mostly non-modifiable and need proper attention in postoperative period to optimize the overall outcome.
Expression of cyclin D1 and cyclin E2 in gastric carcinoma. Amit Kumar Tiwari, BHU, Varanasi

Introduction: Cell cycle regulators cyclin D1 and cyclin E2 function in G1/S transition by activating downstream cyclin-dependent kinases. D-type cyclins activate Cdk4/Cdk6 to initiate phosphorylation of retinoblastoma protein (Rb) family early in the G1 phase leading to the release of E2F transcription factors. Deregulation of this pathway can result in aberrant cell cycle resulting cancer development.

Objectives: To investigate the clinical correlation of the expression profiles of Cyclin D1 and Cyclin E2 in Gastric Carcinoma. Methods: In this study we recruited a total of 92 subjects including 20 controls and 72 cases of histopathologically proven gastric carcinoma. RNA extraction: Total RNA was isolated from tissue samples using TRI reagent according to the manufacturer’s protocol. RT-PCR: Good quality RNA was reverse transcribed by standard protocol which was further used as template in RT-PCR to profile the expression level of the gene using gene specific primers. Immunohistochemistry: Formalin fixed tissues were processed for immunohistochemistry using standard protocol. Anti-human mouse monoclonal cyclin D1 and cyclin E2 antibodies (Biogenex Laboratories) were used for the localization of protein. Receiver operator characteristics analysis was done for determining diagnostic utility of cyclin D1 and cyclin E2.

Results: Our semiquantitative data show a significant upregulation of cyclin D1 in 50% of samples (p=<0.0001, n=72) and cyclin E2 in 61.1% of samples (p=0.007, n=72) as compared to normal gastric mucosa. Similar to RT-PCR results, immunoreactivity data showed a significant upregulation of cyclin D1 in 44.4% of the tumors (p=0.0001, n=72) and cyclin E2 in 11.1% of samples (p=0.0003, n=72) as compared to normal gastric mucosa. Interestingly, expression of cyclins D1 and E2 significantly correlates with different clinical parameters such as gender, histological type (intestinal and diffuse), tumor location (proximal, middle, and distal), tumor differentiation (differentiated and undifferentiated), tumor invasion (serosal, lymphatic, and venous) and tumor metastasis (lymph node, peritoneal, ascites, and liver). Cyclin D1 has significantly higher sensitivity and specificity as diagnostic biomarker than cyclin E2.

Conclusions: Our results suggest that overexpression of cyclin D1 and cyclin E2 is an early event in gastric carcinogenesis. The differential expression of these cyclins may be useful as diagnostic biomarkers for early detection of gastric carcinoma.

Surgical management of peptic ulcer: Where are we? Ashish George, Anand Narayan Singh, Sujoy Pal, Nihar Ranjan Dash, Peush Sahni, AIIMS, New Delhi

Introduction: Peptic ulcer is one of the commonest causes of upper gastrointestinal (UGI) bleed. However, with widespread use of proton pump inhibitors, eradication strategies employed for Helicobacter pylori, and advancements in endoscopic interventional techniques, the surgical management of peptic ulcer bleed has seen a steep decline. This study aimed to assess the clinicopathological correlates and outcomes of surgical management of this decreasingly common gastrointestinal emergency and compare the results over the years.

Methods: All patients who were operated for bleeding peptic ulcer from 1985 to 2015 at the Department of Gastrointestinal Surgery and Liver transplantation, AIIMS, New Delhi, were included. Data regarding demographic and clinical parameters, surgical therapy and outcome were extracted from a prospectively maintained database and analysed.

Results: A total of 226 patients with peptic ulcer bleeding were operated in the study period. Of these, 88.1% were male. The median age of cohort was 44.5 (10-82) years. Nearly half of these patients (45.6%) were hemodynamically unstable at the time of operation. The most common ulcers were duodenal (57.5%) followed by the gastric (28.3%). History of NSAIDs intake was present in 35.8% patients and 11.1% patients were alcoholic. The average preoperative blood transfusion was 5 (2-30) units. Comorbidities were present in 9.3% patients. The most common surgical procedures performed included antrectomy (39.8%) and pyloroplasty (33.2%), with or without truncal vagotomy (79.2%). Less commonly, subtotal or total gastrectomy, gastrojejunostomy and wedge excision of ulcers were performed. The mean blood loss was 1800 (500-8000) ml. The average intraoperative blood transfusion was 2.3 (0-10) units. Overall in-hospital mortality was 21.2% and morbidity was 41.6%. The incidence of re-bleeding was 18.6% and reoperation was required in half (9.3%). When we compared the patients operated recently (2001-2015), with those in the early part of our experience (1985-2000), fewer patients were operated in the later half (71 vs 155). Also, patients operated in the second half were sicker (greater numbers with hemodynamic instability), had higher numbers with NSAIDs intake and alcoholism. However, despite a poorer risk population undergoing surgery, there was no significant difference in terms of mortality, morbidity, re-bleed rate and need for reoperation over time.

Conclusion: Overall, the need for surgical intervention for peptic ulcer bleed has declined. Sicker patients are being operated but the mortality and morbidity and salvage rates have remained similar over the years.

Meningitis carcinomatosa due to gastric cancer: Rare manifestation of a common malignancy. Baskaran Dhanapal, Sarath Chandra Sistla, Gomathi Shankar, Balamourougan Krishnaraj, Ranjith Kumaran, JIPMER, Puducherry
Meningitis carcinomatosa occurs due to infiltration of the leptomeninges by neoplastic cells. It is very rare in solid tumours. Among the solid tumours, leptomeningeal involvement is more common in breast carcinoma, lung carcinoma and malignant melanoma. Leptomeningeal involvement secondary to gastric carcinoma is very rare. Most of the patients with meningitis carcinomatosa have advanced gastric malignancy with metastasis in other sites. Thus, it is usually a manifestation in patients who are already diagnosed to have advanced gastric cancer and confined to palliative treatment. Very rarely, patients may present initially with symptoms secondary to leptomeningeal involvement without symptoms due to the primary malignancy or due to other metastasis, and mimic common neurological disorder like a stroke. In such cases, the diagnosis of underlying malignancy can be challenging. Here we present a patient who presented to us with symptoms suggestive of a stroke, how he was investigated and how we arrived at the diagnosis. Our patient presented with neurological manifestations which mimicked a left hemiplegia. He was initially admitted in MICU. Subsequently he developed dysphasia, bilateral sensorineural hearing loss and right side limb weakness. Infectious disease like neurosyphilis/HSV/TB/Infectious mononucleosis or multiple sclerosis was suspected and CSF analysis and MRI of the brain were done. CSF showed presence of metastatic cells. Nodular meningeal lesions were seen in T1 MRI of brain, typical of meningitis carcinomatosa. Subsequent UGIE revealed growth in pylorus of stomach, biopsy of which was diffuse type adenocarcinoma.

S23
Minimally invasive treatment of gastric gastrointestinal stromal tumors: laparoscopic and endoscopic approach. Dhawal Sharma, C Palanivelu, R Parthasarathi, GEM Hospital, Coimbatore

Introduction: The gastric GISTs represent approximately 70% of all gastrointestinal GISTs. With evolving multimodality approach for management of GIST, surgical resection remains the mainstay of treatment. Many surgical groups have shown feasibility and good short term outcomes with the laparoscopic approach, however long term oncological results are still lacking. Laparoscopic surgery is considered a good option, since the biological behavior of these tumors allows for curative resection without the necessity for large margins or extensive lymphadenectomies. Aim: This study aimed to assess the feasibility and the long-term outcomes of a minimally invasive approach i.e. laparoscopic, endoscopic, and combined laparo-endoscopic approach for the treatment of gastric gastrointestinal stromal tumor (GIST). Methods: Our study is a retrospective review of prospectively maintained database of gastric tumors that were pathologically confirmed as GIST. A total of 33 patients who underwent surgical resection for gastric GIST from Jan 2005 to July 2016 were analyzed. The demographics, tumor characteristics, short term outcomes and long term disease free and overall survival were analyzed. Results: In our study mean age was 56.70 years (range: 23–79 years). Out of these 11 (33.3%) underwent laparoscopic, 2 (6.0%) endoscopic and 16 (48.4%) laparoendoscopic resection of gastric GIST. Mean tumor size was 3cms (range: 0.5–12 cm), with the majority of the lesions (45.4%) located in the proximal stomach. Mean operative time was 110 minutes (range: 50–310 minutes), the mean blood loss of 80 mL (range: 10–600 mL), and the mean length of hospitalization was 4.5 days (range 2–12 days). There were no major perioperative complications or mortalities. All lesions had negative resection margins (range: 2–40 mm). Four patients had 5 or more mitotic figures per 50 high power fields. At a mean follow-up of 36 months, 31 (93.93%) patients were disease free, 1 patient had local recurrence, and 1 patient died of metastatic disease. No distant or port site recurrences have been identified. 20 patients were followed till 5 years, recurrence was detected in 2 patients and 2 patients died, (one patient died unrelated to disease). Conclusions: Minimal invasive approach-laparoscopic surgery, endoscopic and combined laparo-endoscopic surgery are effective surgical treatment options for gastric GIST particularly for small tumors with good short term and long term outcomes.

S24
Operable carcinoma stomach– Demographics, survival and outcomes. An analysis of 427 patients in a tertiary care Indian hospital. Joshua Franklyn, Sam Varghese George, Myla Yacob, Vijay Abraham, Sudhakar Chandran, Inian Samarasam, Christian Medical College Vellore

Introduction: Surgery is generally considered as the only potentially curative treatment for carcinoma stomach. Data from Cancer registries suggest the gastric cancer survival in India is lower than 20%. There is sparse Indian data on operable carcinoma stomach. We present a large series of operable stomach cancer from a high volume upper gastrointestinal surgery unit in South India. Aim: To study the clinical and histopathological demographics of operable, non-metastatic potentially curable carcinoma stomach. To study the overall survival (OS) and disease free survival (DFS). To analyze the factors that significantly affect 5 year DFS and OS. Methods: All patients diagnosed to have operable stomach cancer between January 2006 and December 2014 were retrospectively studied. All patients had surgery followed by adjuvant therapy as directed by a MDT discussion. Data was collected from electronic hospital records and telephonic interview when possible. Results: Four hundred and twenty seven patients who underwent gastric resections for adenocarcinoma
were studied. Subtotal gastrectomy was done in 291 patients and total gastrectomy was done for 136 patients. Seventy percent of all patients were male with a male female ratio of 2.4:1. Tumour was located in the pyloro-antral region in 263 patients (61.7%). Two hundred and fifty nine patients (60.6%) underwent D1+ gastrectomy followed by adjuvant chemotherapy. One hundred and ninety six patients (45.9%) had T4 disease and 160 patients (37.5%) had N3 disease. Stage wise classification revealed 43 patients (10%) with stage I, 40 patients (9.3%) with stage IIa, 59 patients (13.8%) with stage IIb, 76 patients (17.8%) with stage IIIa, 95 patients (22.2%) with stage IIIb and 112 patients (26.2% with Stage IIIc). Follow up was available for 73.8% with a mean follow up of 30.4 months. Five year disease free survival (DFS) and overall survival (OS) was 39% and 59% across all stages. The stage wise 5 year overall survival (OS) was as follow – Stage I- 85.5%, Stage IIa - 82.3%, Stage IIb- 61.5%, Stage IIIa- 51.9%, Stage IIIb- 47.3%, Stage IIIc - 42.9%.The stage wise 5 year disease free survival (DFS) analysis was as follows – Stage I- 82.3%, Stage IIa- 46.5%, Stage IIb – 37.7%, Stage IIIa – 32.2%, Stage IIIb– 19%, Stage IIIc – 5.5%. On multivariate analysis, TNM staging, type of resection (R0/R1/R2) and median lymph node positivity ratio significantly predicted worse 5 year DFS and OS. Conclusions: Operable carcinoma stomach presents at an advanced stage in India. The 5 year disease free survival and overall survival of operable Gastric cancer is better than previously reported from cancer registries in India.

S25
Role of Peritoneal Cytology and Peritoneal Histology in Gastric Cancer. JMV Amarjothi, Karthikeyan Mahalingam, Amudhan Anbalagan, Prabakaran R, Bennet Duraisamy, Anand L, Kannan D, MMC, Chennai

Methods: This was a prospective experimental study from 1st July 13 to 31st April 15. 27 gastric cancer patients with no macroscopic metastatic disease were included. Demographic details, staging data, histology, cytology and outcome parameters were analysed. Standardized staging protocol was followed. Staging laparotomy to exclude macroscopic peritoneal or omental spread. A standard resection technique with D2 lymphadenectomy. The extent of surgery was decided based on the location and extent of the tumour. Peritoneal wash cytology done using standard described technique. For histology, a 2 sq cm peritoneal strip biopsy is taken from both diaphragmatic surface, Bilateral paracolic peritoneum, Pelvic peritoneum and Omental tissue. Results: 8 (66.7%) patients with positive peritoneal fluid cytology had T4 stage (p=0.0001). 15 patients with pT1-pT3 stage patients had negative peritoneal fluid cytology. Fisher's Exact Test: p=0.0001 (<0.05). 10(37%) of 27 patients had positive omental biopsy. Of these 8 patients (29.6%) had positive peritoneal fluid cytology (p=0.00). Conclusion: Most gastric adenocarcinomas will eventually spread to the peritoneum sooner or later in their natural history, even in absence of lymph node involvement. The peritoneum was the most frequent site of recurrence in patients with gastric cancer who received curative resection. Furthermore, the frequency increased with increased depth of invasion of the gastric wall (subserosal invasion, 34.9%; serosal invasion, 46.7%; and invasion of adjacent organs, 60.0%). The majority of patients with positive cytology on peritoneal lavage develop peritoneal metastasis, although the latter also occurs in patients with negative cytological results.

S26
Clinicopathological Correlation with Her2/Neu Overexpression in Carcinoma Stomach. Pushkala S, Anitha Muthusami, Sreenath GS, Rajesh NG, Vikram Kate, JIPMER, Puducherry

Introduction: Carcinoma stomach is an aggressive tumor ranking second in cancer related mortality worldwide. HER2/neu is found to be over-expressed in 7 to 34% of carcinoma stomach and targeted treatment with trastuzumab have shown to improve the survival in these patients. The over-expression of this receptor HER2/neu, cannot be generalized in a country like India. There are many studies which reported the HER2/neu prevalence in India between 6 to 40%. This study was carried out to evaluate HER2/neu expression in the population attending a tertiary care hospital in South India and to correlate it with various clinicopathological parameters. Methods: This prospective observational analytical trial was carried out in a tertiary care hospital in South India from January 2105 to August 2016. 126 consecutive patients with carcinoma stomach were included in the study. HER2/neu testing was done by indirect immunohistochemistry method using DakoHercept kit and scoring done as per consensus guidelines. HER2/neu expression in endoscopic biopsy was correlated with Helicobacter pylori (H. pylori) using 2 stains (Haematoxylin and Giemsa) and with HER2/neu expression in resected specimen. A short term follow up was also done for 6, 12, 18 months based on the time of enrollment of the patient in the study. Results: 71.4% of patients were male and majority (39.7%) of patients were in age group 50 to 60 years. Pain and weight loss was the initial presenting complaints with all patients having pain and 67% patients experiencing weight loss. 50% patients had gastric outlet obstruction and 58.7% had palpable epigastric lump. On pre-operative CECT scan, 62.7% had evidence of metastasis. Non-cardia cancers were more common (60.3%) and 58.7% had intestinal variant. 91.3% tumors were fungating type according to Borrmann classification and majority were moderately differentiated. Resection was possible only in 30% of tumors. 4 of the patients had H. pylori infection. Among 126 patients 9 lost follow-up. There were 81 deaths
during follow up. The mean survival was 4.4 months with maximum deaths in first 4 months of diagnosis. HER2/neu was found positive (3+) in 13 patients (10.3%) and 2 were equivocal (2+), which was grouped with negatives. The HER2/neu correlation with various clinicopathological features showed significant association with female gender (p=0.02). The HER2/neu over-expression did not correlate with other clinical features like age, metastasis, H. pylori, Lauren type or survival. Among 39 patients who underwent resection, the HER2/neu score of endoscopic biopsy correlated with that of resected specimen (p=0.001). Conclusion: The prevalence of HER2/neu over-expression in carcinoma stomach in our study was 10.3%. The HER2/neu over-expression did not correlate with any clinicopathological parameters except female gender. The four quadrant biopsy technique was comparable to representative section from non-necrotic area of growth in resected specimen for HER2/neu testing.

**S27**

Management of Spontaneous Perforations in Gastric Cancer - Our Experience. Livin Jose Jr, Villalan Ramasamy, Bennet Duraisamy A, Prabhakaran Raju, Amudhan Anbazhagan, Anand Lakshmanan, Kannan Devy Gounder, Madras Medical College, Chennai

**Aim:** This study analyses the demographics, pattern of presentation, therapeutic strategies adopted in the management of spontaneous gastric cancer perforation and the outcome from a tertiary referral centre. **Methods:** This is a retrospective analysis of a prospectively maintained database from 2001 to 2014. Patients who had a spontaneous gastric perforation with either a pre or post op diagnosis of Gastric cancer were included in the study. All the patients were initially resuscitated and their general condition optimized. Further evaluation and management were individualized. **Results:** Of the 35 patients diagnosed to have gastric cancer perforation 29 were males and 6 were females. The age group ranged between 45 and 86 years. The time of presentation varied from 5 hours to 6 weeks. Pre operatively only 6 patients had established diagnosis of gastric cancer. 25 patients presented with generalised peritonitis, 4 had lesser sac collection and 6 had a contained perforation. The commonest presentation was with pneumoperitoneum. Majority of the patients were in sepsis with or without shock. Two patients were unwilling for any form of treatment. Three patients were moribund and were offered only flank peritoneal drainage. Three patients had open peritoneal drainage and staged resection. For Five patients with disseminated disease only a tube gastrostomy was done. Two patients had primary tube gastrostomy and delayed resection. Six patients had primary vascularised patch closure of which 4 had staged resection and 2 had only a staged bypass procedure. In 3 patients nothing more than a patch closure was possible. Primary resection was possible in 11 patients, of which nine had subtotal gastrectomy and two had total gastrectomy. The in-hospital mortality was 9. Major morbidity included prolonged ICU stay, duodenal blow out, anastomotic leak and ARDS. **Conclusion:** Management of advanced gastric cancer presenting with spontaneous perforation demands judicious therapy. The major determinants are the status of the patient and the stage of the disease at presentation. The expertise of the management team also plays a pivotal role.

**S28**

Palliative gastro-jejunostomy for carcinoma stomach – is it worthwhile? Selvakumar Balakrishnan, Rajneesh Kumar Singh, Anand Prakash, Anu Behari, Ashok Kumar, Vinay Kumar Kapoor, Rajan Saxena, SGPGIMS, Lucknow

**Introduction:** Palliative gastro-jejunostomy (GJ) is a commonly done palliative procedure for advanced carcinoma stomach with gastric outlet obstruction (GOO). However its utility has been questioned due to the high incidence of non-function and availability of nonsurgical options like palliative chemotherapy and self-expanding metallic stents. **Methods:** We aimed to study the outcomes and morbidity of palliative GJ done for advanced carcinoma stomach with GOO, using a prospectively collected database of patients with carcinoma stomach treated with surgery at our department, between June 2007 to Sep 2015. Patients with a palliative GJ were studied for morbidity, mortality, ability to take orally at discharge and hospital stay. Gastroparesis was defined as need to re-insert Ryle's tube at any time in the post-operative period after starting oral feeds. The Clavien-Dindo system was used to grade morbidity. SPSS v 21.0 software was used for statistical analysis. **Results:** Out of 314 patients with carcinoma stomach who underwent surgery in this period, 35 had only a palliative GJ as the procedure done. At laparotomy, 94% patients had evidence of grossly disseminated disease in the form of liver, omental, peritoneal nodules or ascites; 63% patients had adjacent organ involvement. Loop GJ was done in 34 patients and one patient underwent a partition GJ, to exclude the tumor bearing distal stomach. The GJ was antecolic in 97% and retrocolic in 3%. All of them had a trans-anastomotic naso-jejunal intubation of the efferent limb. Overall morbidity was 49%. Among patients with morbidity (n=17), gastroparesis was present in 15, upper GI bleed in 4, post-operative pneumonia in 2 and asciites, thrombophlebitis, central line sepsis, sheath dehiscence and anastomotic leak in 1 patient each. The patient with sheath dehiscence required re-surgery (secondary suturing) and one patient with pneumonia required ICU care (for mechanical ventilation). The post-operative overall morbidity was <= Grade 2 in 71% (n=12) patients and => Grade 3 in 29% (n=5) patients. There were no deaths. The median hospital stay was 15 days. Gastroparesis was the
most common post-operative complication (43%; n=15). Among patients with gastroparesis, 47% (n=7) could not tolerate soft oral diet at discharge. All these patients were discharged with a feeding naso-jejunal tube (n=7), while some in addition required Ryle’s tube insertion (n=4) for decompression of the stomach. **Conclusion:** Palliative gastro-jejunostomy should not be considered a minor palliative procedure for patients with advanced carcinoma stomach. It is associated with major morbidity and prolonged hospital stay, with almost half the patients having postoperative gastroparesis. There is need to consider alternative options for palliation for patients who are not candidates for potentially curative surgery on preoperative staging.

**S29**
Neutrophil-Lymphocyte Ratio and Platelet-Lymphocyte Ratio in Gastric Cancer. Srinivasan Muthukrishnan, Villalan Ramasamy, Perungo Thirumaraichelvan, Prabhokaran Raju, Bennet Duraisamy, Amudhan Anbalagan, Kannan Devy Gounder, Rajiv Gandhi Govt General Hospital & Madras Medical College, Chennai

**Aim:** The aim of our study is to find out if any positive association exists between the NLR, PLR and the resectability of the locally advanced Gastric carcinoma.

**Methods:** From January 2012 to December 2015, 687 patients who were diagnosed to have gastric cancer in Rajiv Gandhi Government General Hospital, Chennai were selected. All the patients who were potential candidates for a curative resection (n=430) were included in the study. Those who had metastatic disease or were planned for a non surgical management were excluded (n=257) from the study. The study population was divided into two groups: group A - patients who had a curative resection (n=233) and Group B - patients who were found unresectable during surgery and hence had a palliative bypass (n=197). The preoperative NLR and PLR for both the groups were calculated from the ratio of absolute neutrophil, lymphocyte and the platelet count. The NLR and PLR of both the groups were compared. Also, a subgroup analysis of males and females in both the groups were analysed. **Results:** The mean age in Group A was 54.36 years and in Group B was 53.90 years. The M:F sex ratio was 2.8:1 in group A and 2.9:1 in group B. The mean NLR in group A was 3.086±3.0 which was much less than group B 3.851±2.9 and the difference was statistically significant (p=0.009). Similarly, the mean PLR in group A was 151.18±100.3 being much lower than in group B 184.96±125.3 and the difference showed statistical significance (p=0.002). On sub group analysis, among the males, the mean PLR between two groups had significant difference (p=0.016) and in the case of females, the NLR showed a significant difference (p=0.000). **Conclusion:**

The NLR and the PLR can be used as a surrogate marker to assess the resectability of the tumour in a case of locally advanced gastric cancer. A specific cut-off value for NLR and PLR could not be derived from the study. Further studies in this aspect may help to find out a specific cut-off value.

**S30**
An analysis of patterns of recurrence in patients after curative gastrectomy. JMV Amarjothi, Villalan Ramasamy, Amudhan Anbalagan, Bennet Duraisamy, Prabakar R, Kannan D, MMC, Chennai

**Introduction:** Gastric cancer in the Indian setting commonly presents as advanced disease obviating the need for curative resection. Therefore, in the proportion of patients who are undergoing curative resection, patterns of disease recurrence are of paramount importance for understanding tumour biology, patient prognostication and survival. **Aims:** The study is to elucidate the patterns of recurrence after curative R0 gastrectomy for carcinoma of the stomach in our institution. **Methods:** Patients with recurrence following curative R0 gastrectomy from 2011 to 2014 were subjected to complete history, physical, radiological examination of the abdomen, chest and upper GI scopy. Recurrence was divided into the following categories-locoregional, metastatic & both. Disease recurrence to proximal stomach, stomach bed, nodes & anastomotic site were in the locoregional sub category. Metastatic recurrence included liver, peritoneum, anterior abdominal wall, other organs and nodal involvement to left supraclavicular nodes. **Results:** It was found that 52 of 177 (29.37%) patients who underwent R0 gastrectomy presented with recurrence. Of the 52 with recurrence, 98% (n=51) developed recurrence within 2 years of the curative resection. Locoregional involvement alone was seen in 25% (n=13), distant metastasis in 48.07% (n=25) and combined (locoregional and metastatic) in 26.9% (n=14) patients. Most common site of metastatic recurrence was to the peritoneum resulting in ascites in 48.7% (n=19) followed by the liver in 41% (n=16). It is to be noted that 55.76% pts (n=29) of patients did not receive any adjuvant chemotherapy. The mean overall time for recurrence after curative resection in all was 10 months which was prolonged to 14 months in those who received adjuvant chemotherapy. Most recurrences (n=32) (61.5%) occurred in those with poorly differentiated histology at initial operation. **Conclusion:** Almost all recurrence occurred within 2 years of surgery implying on the need for effective follow up immediately following resection. Histology (poor differentiation) at the time of initial resection plays a role in early recurrence requiring aggressive follow up in this sub group. In our set up, metastatic disease involving the peritoneum resulting in ascites followed by liver involvement, was more common than locoregional recurrence.
I1  
Malignant gastrointestinal stromal tumor of the jejunum with liver metastasis.  
Jignesh Patel, Mamta Hospital, Surat

A 61-year-old woman was admitted to our hospital because of appetite loss and nausea. On admission, physical examination revealed anemia with lump in right side of abdomen. Her hemoglobin level was 7.2 g/dL, high TLC and other laboratory data were normal. Abdominal ultrasound and computed tomograms revealed a 14x13x7 cm heterogeneous mass lesion with central necrosis in hypogastrium and another 8x7x6 cm size solid lesion abutting other lesion in right lumen region and well defined heterogenous mass 9x8x7 cm size in seg IVA & IVB in the liver. A malignant gastrointestinal stromal tumor arising from the jejunum with liver metastases was suspected. FNAC from liver mass s/o metastatic GIST. Partial resection of the affected jejunum and enucleation of the liver mets were performed. The resected primary tumor was 14x9x8 cm and oval soft tissue liver mass 14 cm diameter. The tumor was mainly submucosal, but extended outside the jejunum; it was elastically firm and multiloculated. The metastatic liver tumors were solid with diameters of 14 cm. Patient discharge from hospital on POD 5, tolerating oral diet, on regular follow up. This case was a malignant GIST originating in the jejunum with liver metastases. The primary tumor and liver metastases were successfully resected simultaneously. Histopathological examination revealed that the tumors were characterized by fascicular proliferation of spindle-shaped cells. IHC staining was positive for CD34 and c-kit, and negative for S-100 protein and smooth muscle actin. Oncophysician opinion taken post operatively, Imatinib started. Patient is on regular follow up and well since 4 months. Repeat CT scan of abdomen shows no e/o residual or recurrent jejunum or liver metastatic lesion.

I2  
Laparoscopic Management of a Rare Ileal Duplication Cyst in the Elderly.  
Kamal Sunder Yadav, Priyanka Akhilesh Sali, Hitesh Mehta, Lilavati Hospital and Research Centre, Mumbai

Gastrointestinal duplication cysts are rare and generally found in infants and young adults. However, its occurrence in the elderly population is seldom seen. Surgical resection is deemed appropriate for their management due to complications like obstruction, hemorrhage, perforation and malignant degeneration are known to occur. Resection of only the cyst may be adequate incompletely isolated cases. However, others may require resection of the adjoining small bowel. We present an elderly lady who presented with pain in the right iliac fossa. Imaging showed a terminal ileal duplication cyst that was managed by laparoscopic right hemicolectomy. Histopathology confirmed an ileal duplication cyst with chronic appendicitis. We highlight the rare occurrence in the elderly, the possibility of it leading to chronic appendicitis and its management laparoscopically.

I3  
Limited distal duodenal resection: Surgical approach and outcomes.  
Ankush Kalyan Golhar, Vivek Mangla, Shailendra Lalwani, Siddharth Mehrotra, Naimish Mehta, Samiran Nundy, Sir Ganga Ram Hospital, New Delhi

Introduction: Tumours involving the distal duodenum and the most proximal jejunum are mostly treated with pancreaticoduodenectomy, which though the preferred procedure for most patients, is associated with considerable morbidity. Limited distal duodenal resection can be done in patients with benign and some carefully selected malignant tumours involving the distal duodenum and the most proximal jejunum. We describe our experience with limited distal duodenal resection for benign and malignant tumors of the third and fourth part of the duodenum. Material and methods: We performed a retrospective analysis of prospectively collected data for all consecutive patients in our unit who underwent limited i.e. either local wedge or segmental distal duodenal resection from March 2011 to Nov 2015. Their demographic data, clinical history, peri-operative factors, postoperative outcomes and long-term outcomes were analysed. Results: Ten patients underwent the procedure (8 males and 2 females, median age of 47 years). Their most common presentations were pain in the abdomen (50%) and upper GI bleeding (40%). Median duration of surgery was 245 minutes and median intra-operative blood loss was 240 ml. Five had malignant tumors (adenocarcinoma: 2, neuroendocrine tumor: 2, non Hodgkin’s lymphoma1), 3 patients had GISTs and 2 patients had other benign tumors on final histopathological examination (lipoma n1, ectopic pancreas n1). The 30-day postoperative morbidity rate was 60% (n=6) though most of the complications were minor (Clavien grade 1 or 2). Delayed gastric emptying was the major cause for the postoperative morbidity and was seen in 6 out of 10 patients (60%). Their median postoperative stay was 9 days with range of 6 to 13 days. All ten patients are alive without clinical or radiological evidence of recurrence.
after a median follow up period of 29 months. **Conclusion:** Limited distal duodenal resection is a safe and effective surgical alternative to a pancreaticoduodenectomy for carefully selected patients with benign and malignant tumors of the third and fourth part of the duodenum.

**I4**
**Mesenteric Vessel Occlusion: A Retrospective Study of Cases Presenting to our Center in the past 2yrs.** Mustafa Razvi, Narsimhan Mohan, Ramesh Ardhanari, MMHRC Hospital And Research Center, Madurai

**Introduction:** Mesenteric vessel occlusion is a frequently seen serious condition presenting to emergency. Proper evaluation and management requires a systematic approach from diagnosis to management. **Methods:** We have retrospectively examined patients who have presented to our center with mesenteric vessel occlusion, mode of presentation, diagnosis and management. **Results:** Acute onset of abdominal pain was the most frequent presentation. CECT abdomen was the diagnostic modality of choice. Mesenteric vein occlusion was more commonly seen than mesentery artery occlusion. Thrombo-embolic phenomena was responsible for the arterial occlusion events. For venous occlusion an underlying coagulation abnormality was found. IV heparin was started in all patients, for those not requiring surgery in venous occlusion group tab warfarin was started, in arterial was started in all patients, for those not requiring surgery in underlying coagulation abnormality was found. IV heparin was started in all patients, for those not requiring surgery in venous occlusion group tab warfarin was started, in arterial group Tab clopidet 75 mg was given. In venous occlusion patients was kept on lifelong warfarin. **Conclusion:** 1) Mesenteric arterial occlusion is commonly due to embolic phenomena. 2) Mesenteric vein occlusion is commonly due to thrombus. 3) All patients of mesenteric vein occlusion should have a coagulation profile. 4) All patients of vein occlusion should be started on IV heparin and if he does not require a laparotomy tab warfarin should also be simultaneously started. 5) Patient should be kept on lifelong warfarin with frequent monitoring of INR to keep it in rage of 2.

**I5**
**Laparoscopic Management of Gall Stone Ileus.** Mustafa Razvi, Narsimhan Mohan, Ramesh Ardhanari, MMHRC Hospital And Research Center, Madurai

**Introduction:** A 60 yr old female came to our department with features of small bowel obstruction, investigations revealed gallstones ileus. CT scan showed Riglers triad. Patient was taken up for laparoscopic surgery, a stone around 3.5 cm was found in the terminal ileum obstructing small bowel obstruction. It was successfully removed in laparoscopy. Patient improved postoperatively and discharged. **Methods:** Video presentation. **Results:** It was managed affectively by laparoscopic surgery. **Conclusion:** Gall stone ileus is a very rare cause of small bowel obstruction. Few case reports are available in the literature of laparoscopic management of gallstone ileus. We present video of a case of gallstone ileus which was managed laparoscopically.

**I6**
**A Rare Case Of Eosinophilic Enterocolitis presenting as Intestinal Obstruction.** Raghu Sricharan

**Introduction:** Eosinophilic enterocolitis represents a subset of a broader disease group eosinophilic gastrointestinal disorders. The disease can affect patients of any age, but is more commonly seen in the third to fifth decades with a male predominance. Diagnosis is defined by three criteria: (a) the presence of GI symptoms, (b) biopsies showing eosinophilic infiltration of one or more areas of the GI tract (or with characteristic radiological findings with peripheral eosinophilia), and (c) no evidence of parasitic or extraintestinal disease. A peripheral eosinophilia may be helpful but is not necessarily a universal finding, and it may be absent in 20%–90% of cases. We present a unique case of eosinophilic enterocolitis presenting as intestinal obstruction without peripheral eosinophilia. **The Case:** A 18-year-old male presented to out patient department with chief complaints of abdominal pain and vomiting for 1 week. The vomiting was nonbilious, 3-4 episodes per day. He denied any allergies to medicines or foodstuff. He denied alcohol or recreational drug use. No history of previous surgeries. On physical examination, the patient was afebrile and vitals were within normal limits. Abdominal exam revealed mild tenderness in Right iliac fossa, abdomen distention. Total leukocyte count– 8000 (N-60, L-20, E-2), ESR– 100 mm/hr. Computed tomography (CT) of the abdomen and pelvis revealed narrowing in terminal ileum with proximal dilated bowel loops. Right hemicolectomy done and HPE came out as eosinophilic enteritis. **Conclusion:** Eosinophilic enterocolitis may represent an underappreciated condition. The recognition of eosinophilic enterocolitis constitutes a challenge. This may also present as intestinal obstruction.

**I7**
**Segmental duodenectomy for duodenojejunal fl exure tumours: Case series.** Saurav Sharma, Azhar Perwaiz, Amanjeet Singh, Adarsh Chaudhary, Medanta Hospital, Gurgaon

Segmental duodenectomy for tumours situated at and around the duodenojejunal (DJ) is technically challenging because of the difficulty of access, proximity of superior mesenteric artery (SMA), superior mesenteric vein and head of pancreas. Short duodenal mesentery hinders dissection and duodenojejunal anastomosis is difficult. Most published literature regarding such tumours is limited to case reports. Between March 2010 and June 2016, we...

Introduction: Emergencies in Crohn’s disease result in significant morbidity and mortality. Though transmural inflammation is the hallmark, free intestinal perforation peritonitis is rare in Crohn’s disease. We present a rare presentation of peritonitis in a patient with diagnosed Crohn’s disease. The Case: A 27 year old male patient, diagnosed as Crohn’s colitis since 8 years on treatment with steroids presented to the emergency room with features of peritonitis. He gives history of abdominal pain with multiple episodes loose stools of 4 days duration. Clinically abdomen was distended with diffuse tenderness and guarding. Blood investigations are normal except for elevated total leucocyte count and very low serum albumin (1.9 gm%). The Abdominal X-ray of the patient was inconclusive and peritoneal free fluid was confirmed by USG abdomen. Treatment: An emergency laparotomy was performed which revealed 4 litres of purulent fluid in peritoneal cavity The colon was oedematous with fat creeping and terminal ileum was inflamed too. However no site of perforation was identified. In view of Crohn’s colitis without evidence of visceral perforation elsewhere, subtotal colectomy with ileostomy was done. Postoperative period was uneventful and he was discharged on 8th post op day on oral soft diet and stoma working well. After 2 months he was readmitted for completion proctectomy and ileal pouch anal anastomosis with diverting ileostomy and was discharged uneventfully on postoperative day 4. Ileostomy closure was done after 5 months. Patient is now on steroids for secondary HPA axis suppression and for Crohn’s disease. He is doing well except for steroid induced diabetes mellitus. Conclusion: Micro colonic perforations should be suspected and managed timely in patients with Crohn’s disease. Emergency colectomy followed by staged restoration can be performed with adequate control of disease.


Introduction: Malignancy accounts for up to 20% of vesicenteric fistulae (VEF) and is the 2nd most common cause next to Crohn’s disease. We report a case of ileo-vesical fistula (IVF) secondary to metachronous metastasis from carcinoma Cervix. The Case: A 64 year old female presented with fecaluria, hematuria and dysuria of duration 3 weeks. She had been diagnosed as Carcinoma Cervix (stage III) four years back and underwent chemoradiotherapy. She had a local recurrence post one year after the initial therapy and undergone brachytherapy for the same. Her Clinical examination was non-contributory and laboratory evaluation was normal except for a positive urine culture. CECT of abdomen showed IVF with absence of any recurrent disease in abdomen and pelvis. Pap smear from vaginal vault was negative for malignancy. Cystoscopy revealed a papillary tumor-like appearance at the dome of bladder with evidence of EVF. Treatment: Laparotomy showed IVF from 10 cm proximal ileocecal valve and dome of urinary bladder. There was no omental or pelvic disease and ascites. The large bowel and uterus was free from fistulous segment. Segmental resection of ileum with wide excision of bladder dome was performed en masse followed by ileo-ileal anastomosis and repair of urinary bladder. Histopathology showed poorly differentiated squamous cell carcinoma. Postoperative period was uneventful and she was discharged on post operative day 7. Urinary catheter was removed after 4 weeks and SPC removed after 6 weeks. She is being planned for adjuvant treatment from RCC. Conclusion: Isolated metachronous metastasis from Carcinoma Cervix is very rare. Wide surgical resection should be considered in late VEF post brachytherapy in view of possible isolated metastasis or recurrent disease.

Jejunojejunal Intussusception: A Rare Complication after Feeding Jejunostomy in A Patient With Situs Inversus Totalis– A Case Report. Sakhthivel Harikrishnan, Harish Goutham, Rajkumar Nagarajan, Nakandishore Maroju, Srinivasan K, JIPMER, Puducherry

Adult intussusception accounts for only 5% of all cases of intussusception and 1-5% of all cases of intestinal
obstruction in adults. In small bowel, intussusception is usually due to a secondary organic cause either intraluminal or extraluminal. Presence of a long intestinal tube has been rarely reported to cause intussusception. Here we report a case of jejunojejunal intussusception after feeding jejunostomy in a patient of situs inversus totalis. A 48 year old patient presented to us with absolute dysphagia. Evaluation showed an ulceroproliferative growth in the cervical oesophagus 18 cm from the incisors. Biopsy from the growth showed moderately differentiated squamous cell carcinoma. CECT thorax and abdomen showed cardiac apex, descending arch of aorta, spleen, stomach noted on the right side and liver on the left side suggestive of situs inversus totalis. There was a circumferential polypoidal growth involving cervical esophagus from C5 to T3 with loss of fat planes with the trachea. Patient was planned for ChemoRT and in view of absolute dysphagia laparotomy and feeding jejunostomy was done by Witzels technique. Post op after starting jejunostomy feeds patient developed intermittent colicky type pain and abdominal distension. Contrast study through the FJ tube showed suspected intussusception which was confirmed with a CECT abdomen. On re-exploration, there was a jejunojejunal intussusception and the tip of the FJ tube was found to be the lead point. The jejunojejunal intussusception was reduced. Post op patient had an uneventful recovery and tolerated jejunostomy feeds. Jejunojejunal intussusception is a rare complication after feeding jejunostomy and should be suspected if a patient develops intestinal obstruction after feeding jejunostomy.

**I11**

**Rare Presentation Of Adult Intussusception– Post Partum Period.** Anil Sundaram, Haridas TV, Govt Medical College, Thrissur

Intussusception occurs when a proximal segment of the gastrointestinal tract, called intussusceptum, telescopes into the lumen of an adjacent segment, also known as intussusciptiens. Most intussusceptions in adults are due to a lead point, which is an identifiable pathological abnormality. Its preoperative diagnosis and treatment in adults is difficult because of nonspecific abdominal symptoms. Rarely presents with the classic triad of vomiting, abdominal pain and passage of blood per rectum. We present a case of 22 year old female who presented with ileo-ileo-colic intussusception on post partum day 4 and underwent right hemicolectomy. Histopathology showed the lead point as Meckels diverticulum with ectopic gastric tissue.

**The Case:** A 22-year-old female patient presented to the emergency department on post partum day 4 with abdominal pain and distension, nausea and vomiting after normal vaginal delivery. Vitals: blood pressure-120/70mm Hg; Pulse- 72/min; Temperature-36.5°C. Physical examination revealed abdominal distension, guarding and rigidity. Haemogram-leucytosis, plain film showed air-fluid levels and dilated small bowel loops. Abdominal ultrasound showed a complex mass in the right hypochondrium and lumbar with a typical configuration of intussusception. Contrast-enhanced CT images showed a round target-shaped mass in the right upper abdomen consisting of different densities with distended fluid-filled small-bowel loops. Emergency laparotomy revealed ileo-ileo-colic invagination approximately 40cm proximal to the ileocecal valve with Meckels Diverticulum acting as lead point and the segment of bowel was in a pre gangrenous state. A right hemicolectomy was performed. Histopathology report-Meckels Diverticulum with ectopic gastric tissue acting as the lead point. Post operative period was uneventful and patient was discharged on post operative day 7 on normal diet.

**Discussion:** In adults, intussusception is a rare, but potentially serious condition that usually presents with mechanical obstruction and requires surgical management. Intestinal intussusception in adults is rare, particularly ileo-ileo-colic intussusception. It is estimated that only 5% of all intussusceptions occur in adults and approximately 5% of bowel obstructions in adults are caused by intussusception; 70–90% of patients have a lead point. Nausea, vomiting, and abdominal pain are the most common manifestations among adults. Most sensitive study to diagnose intussusceptions is abdominal CT, which provides a diagnostic accuracy of 83%.

One of the characteristic features described on CT scan is the presence of a target- or sausage-shaped lesion. CT has therefore become the preferred imaging study compared to colonoscopy, ultrasonography and small bowel series. Treatment usually requires resection of the involved bowel segment. **Conclusion:** In this case as the segment of bowel was in pregangrenous state we did a Right Hemicolectomy. Diagnostic value of CT scan is invaluable in adult ileo-ileo-colic intussusception. This is the first case in world literature with Meckels diverticulum with gastric ectopic tissue acting as lead point and causing intussusception in the post partum period.


**I12**

**Duodenal neuroendocrine carcinoma with Gastric Outlet Obstruction: A rare presentation.** Lalit Aggarwal, Rama Alagappan, Lady Hardingie Medical College, New Delhi

**Introduction:** Neoplasms of enterochromaffin/neuroendocrine cells origin with neurosecretory capacity that may result in carcinoid syndrome is called as neuroendocrine tumor (NET). About 22% of the NETs of small bowel arise from duodenum, while ileum remains
the most frequent site of NETs (>70%). Currently most NETs of duodenum are detected “incidentally” and therefore recognized at an early stage. We describe a male with Duodenal NET with unusual presentation of Gastric Outlet Obstruction. The Case: A 50 yr-old male with symptoms of vague upper abdominal pain and vomiting after food intake for 7 months, significant weight loss in 2 months. Clinical examination – Patient was having pallor with mild epigastric tenderness and succussion splash+. UGIscopy showed an ulceroproliferative growth at the antrum extending till D1-D2 junction. CECT abdomen showed polypoidal growth from the antero-medial wall of D1 extending superiorly into pylorus and inferiorly till D2 with no distant metastasis. Patient underwent a distal gastrectomy with extended duodenectomy[D1] with Billroth-2 procedure. Histopathology of the specimen showed well differentiated neuroendocrine carcinoma [G3]. Comments: Small Bowel NETs are rare entities and, most duodenal NETs are asymptomatic and are detected incidentally during UGIscopy. Sometimes there can be atypical presentations needing a proper evaluation.

I13 Internal herniation through falciform ligament- An unusual cause of small bowel obstruction. Raj Kumar Nagarajan, JIPMER, Puducherry

The common cause of Small Bowel Obstruction(SBO) is either post-operative adhesions or external hernia. Internal hernia, as a cause of SBO is very rare accounting for 2% of all cases. Hernia through the falciform ligament is even rare, accounts for 0.2% of internal hernia. It usually is secondary to congenital defect in falciform ligament or iatrogenic defect due to insertion of trocars. Excess visceral mobility and visceral displacement in the upper abdomen are contributing factors. We report a case of 75 year old male, a known case of diabetes and hypertension, post wide local excision for verrucous lesion in the great toe with no previous history of laparoscopy developed symptoms and signs of intestinal obstruction on post-operative day 6(POD 6). Laparotomy revealed a loop of ileum 20 cm from ileocolic junction with mobile caecum herniating through a defect in the falciform ligament with necrotic patch for a length of 10 cm. Division and suture ligation of falciform ligament with resection of the necrotic segment with stoma was done. Postoperative was uneventful. Herniation through the falciform ligament is rare, though increasingly frequent phenomenon, most likely due to rising trend of laparoscopic surgeries. Hence, it must be considered as a differential diagnosis for cases with small bowel obstruction.

I14 Gall Stone Disease After Ileostomy. Santosh C Gudimani, Abhishek Bhagvat, Mohan N, Ramesh Ardhanari, MMHRC, Madurai

Introduction: Ileostomy is one of the common surgery done in a gastroenterology unit. Generally done in an emergency setting, as a temporary measure to overcome the crisis. Aim: The aim of the study is to follow up these patients who have undergone ileostomy for various etiologies at our centre. Methods: A total of 144 patients underwent ileostomy for various etiologies from November 2011 to December 2015. These groups of patients were followed up with ultrasound abdomen scans during their visit to hospital for the development of gall stones. Results: One hundred forty four patients underwent serial abdomen scans during their visit to hospital, of which 31 patients developed (21.5%) gall bladder stones which were asymptomatic. A total of 50 female patients (34.7%) underwent ileostomy out of which 12 patients developed (24%) gall stone disease. Ninety four male patients (65.3%) underwent ileostomy out of which 19 patients developed (20.2%) gall stone disease. Conclusion: Regardless of the primary condition for which the ileostomy is done, the incidence of gall stone disease is higher than the normal population. We recommend gall bladder imaging in the follow up, for pre operative work up of ileostomates. Prophylactic cholecystectomy can be considered carefully in these set of patients.

I15 Primary Malignant Melanoma of the Duodenum- A Rare Case Report. Villalan Ramasamy, Amarjithi JMV, Gnanasekar Murugiyian, Amudhan Anbalagan, Anand Laxmanan, Kannan Devygounder, Madras Medical College, Chennai

Introduction: Malignant melanoma especially primary melanoma is uncommon in the gastrointestinal (GI) tract. Anorectal region and small bowel are the most common sites of primary and metastatic GI melanoma respectively. Surgery is the main stay of treatment for localized disease. The Case: A 43 years old male presented with abdominal pain, vomiting, lump in the right side of the abdominal, jaundice, high coloured urine, loss of weight for 4 months. He had no comorbidities and no previous history of surgery. OGD revealed Esophageal candidiasis, Multiple raised blackish spots seen starting from duodenal bulb extending upto D 3 and Ampulla appeared prominent, ulcerated with central blackish pigmentation. Endoscopic biopsy was negative. MRCP showed E/o 11*9.5*7.3 cm heterogenously enhancing exophytic T2 heterointense lesion with haemorrhage and necrotic components noted arising from medial wall of 2nd part of duodenum compressing the ampullary region causing dilatation of Proximal biliary system and main pancreatic duct. USG guided biopsy revealed features suggestive of Malignant melanoma. A complete history and detailed examination of skin, ocular, anal canal and any other location did not reveal any primary lesion. This diagnosis was confirmed.
at laparotomy and Whipples procedure was performed. The post operative specimen biopsy report confirmed the diagnosis of melanoma. So we diagnosed this case as a rare case of primary malignant melanoma of the Duodenum. **Conclusion:** Primary malignant melanoma of the Duodenum is an extremely rare oncologic entity. No other sites of melanoma were found and this diagnosis was made. Aggressive surgery remains the treatment of choice offering both symptom palliation and long-term survival.

**I16**
Comparison of Adapted enhanced Recover after Surgery Pathway versus Standard Care following Simple Closure of Perforated Duodenal Ulcer- an Open labeled Randomized Controlled Trial. **Subair Mohsina, Muthusami Anitha, Dasarathan Shanmugam, Sathasivam Sureshkumar, Pankaj Kundra, T Mahalakshmy, Vikram Kate, JIPMER, Puducherry**

**Introduction:** The Enhanced Recovery after Surgery (ERAS) pathways although widely used in elective procedures, its role in emergency setting remains uncertain; with only two published reports. The ERAS programme is often modified in elective procedures on an institutional basis and thus may have a role in emergency setting albeit in modified form. Hence, this study was carried out to investigate the feasibility and efficacy of adapted ERAS pathways in an emergent setting in patients undergoing simple closure for perforated duodenal ulcer. **Methods:** This was a single-center, prospective, open labeled, parallel arm, superiority, randomized controlled trial carried out in a tertiary care hospital between September 2014 and May 2016. Patients with perforated peptic ulcer undergoing simple closure were assessed for eligibility and randomly assigned in 1:1 ratio into the standard perioperative care group and adapted ERAS group. Patients with refractory shock, ASA class more than 3, perforation larger than 1 cm and having any concomitant definitive surgery were excluded. The adapted ERAS pathway was designed based on the components of the ERAS which could be applied in an emergency setting and aimed at multimodal opioid sparing analgesia, prevention of ileus, early enteral nutrition, early removal of tubes and early mobilization. The primary outcome was the length of hospital stay. The secondary outcomes were time for first flatus, first defecation, time of withdrawal of tubes and time of starting liquid/solid diet, morbidity (post-operative complications) and mortality. **Results:** A total of 102 patients were included in the study, 52 in the standard perioperative care group and 50 in the adapted ERAS group respectively. Among the 52 patients, three patients (ileal perforation, DU perforation larger than 1 cm, sealed perforation) were excluded from the study after randomization as per exclusion criteria. The demographic and clinicopathological characteristics were similar in both the groups. There was a significant reduction in the time (days) for the removal of nasogastric tube [2.15 (0.15) p<0.001 CI 1.85-2.45], urinary catheter– [0.45 (0.11) p<0.001 CI 0.23-0.67] and abdominal drain [3.66 (0.35) p<0.001 CI 2.96-4.36] in adapted ERAS group when compared to standard care group. Patients in adapted ERAS pathway group had a significantly early functional recovery(days) when compared to standard care group for appearance of first bowel sounds [0.56 (0.11) p<0.001 CI 0.33-0.78], passage of first flatus [1.47 (0.18) p <0.001 CI 1.12-1.83], passage of first stool [2.25 (0.20) p<0.001 CI 1.8-2.67], time for resumption of fluid diet [2.72 (0.38) p<0.001 CI 1.95-3.49] and resumption of solid diet [3.70 (0.44) p<0.001 CI 2.82-4.59]. Post-operative superficial surgical site infections were reduced in the ERAS group [5/50 vs.14/49 OR 0.28 p 0.02 CI 0.08-0.8), however, the leak rates from the omentopexy site were similar (1/50 vs. 2/49). There was no mortality encountered in the study. The length of hospitalization was significantly shorter than the standard care group [5.36 (1.39) vs. 9.7 (4.3); MD- 4.41 (0.64) days p<0.001 CI 3.14-5.68]. **Conclusion:** ERAS pathways, in a modified form are safe, tolerable and feasible for application in select patients undergoing simple closure of perforated peptic ulcer without an increase in the rate of complications.

**I17**
Closure Of Loop Ileostomies- A 17 Year Single Centre Retrospective Study. **Amir Parray, Anand Nagar, Siddharth Mehrotra, Vivek Mangla, Shailendra Lalwani, Amitabh Yadav, Naimish Mehta, Samiran Nundy, Sir Ganga Ram Hospital, New Delhi**

**Introduction:** De-functioning ileostomies are performed to protect against the leakage of a distal anastomosis and their reversal although associated with low mortality rates, may be accompanied by complications which are generally underestimated. We studied the indications, duration to closure and impact of the etiology on the duration to closure, and reviewed the complications associated with the procedure and predictors of these complications. **Methods:** Data was obtained from 457 patients regarding demographics, causes of ileostomy formation, time from creation to closure of ileostomy, anastomotic technique, duration of the operation, postoperative complications, and hospital stay after surgery who underwent closure of loop ileostomy from December 1996 to March 2016 at Department of Surgical Gastroenterology and Liver transplantation, Sir Ganga Ram Hospital, New Delhi. **Results:** There were 311 males and 146 females who had a median age of 46 years (range 1-86 years) and had ileostomies constructed after ii)105 (23%) ileoanal pouches (90 for ulcerative colitis,13 for familial adenomatous polyposis and 2 for Peutz Jeghers syndrome); (iii) 122 (27%) for low and ultralow anterior resections; (iii) 28(6%) for right and left colonic resections for locally advanced colon
malignancies; (iv) 60 (13%) for perforation peritonitis due to multiple reasons; (v) 30 (6%) for necrotizing pancreatitis with colonic involvement; (vi) 23 (5%) for sigmoid diverticulitis and associated complications; (vii) 15 (3%) for, blunt and penetrating abdominal trauma; (viii) 12 (3%) for tubercular abdomen; (ix) 10 (2%) for enterocutaneous fistula; (x) 16 (4%) for small bowel obstruction and small bowel tumors; (xi) 7 (2%) perineal gangrene and high fistula in ano (xii) 31 (7%) for other reasons. Side-to-side stoma closure was achieved using a standard two layer technique through a para-stomal incision. The median hospital stay was 7 days (range 3-116 days). The median time to closure was 18 weeks (range 3-104 weeks). The 30 day mortality occurred in 3 patients (0.7%). Complications occurred in 149 patients (33%), with 88 (59%) of them having ‘surgical’ problems: bowel obstruction 45 (30%), wound infection 21 (14%), abdominal collection in 5 (3%), peritonitis with anastomotic leak in 3 (2%), intra-abdominal abscess in 5 (3%), localized anastomotic leak in 3 (2%), and bleeding in 8 (5%). Re-exploration was done in 6 (1.3%) patients (3 for anastomotic leak, 1 for gangrene, 1 each for bleeding and abdominal dehiscence). 61 (41%) patients had non-surgical complications. Most complications (79%) were classified as group II according to the Clavien-Dindo classification. Male gender (p value=0.007), malignant etiology (p value<0.00000), prior chemoradiotherapy (p value=0.000004) and prolonged duration to closure (> 6 months) (p value=0.000001) were identified as statistically significant predictors of complications. Conclusion: Closure of a protective ileostomy is a common surgical procedure performed mostly as second stage to colorectal surgeries (56%) and is associated with complications in 33% of patients. Male gender, malignant etiology, prior chemoradiotherapy and prolonged duration to closure (> 6 months) were identified as statistically significant predictors of complications.

I18
Early Diagnostic laparoscopy is beneficial in Acute Mesenteric Ischemia. Vinit Wakade, Sujeet Jahagirdar, Ashwini Sahakari Rugnalaya, Solapur

Introduction: Acute mesenteric ischemia is a vascular catastrophe affecting the mesenteric vessels, which leads to long segment bowel gangrene requiring massive resections, and has high mortality and morbidity. The problem is compounded by a lack of awareness about the disease in the medical community, leading to a delay in diagnosis and institution of appropriate therapy. Also due to the increased availability of Multidetector CT scans the disease is being diagnosed with increasing frequency. There is a lack of clear guidelines as to timing of intervention, often intervention being delayed till the patient is in refractory multiorgan failure. Even on good quality scans the sensitivity to detect bowel gangrene in 70-80%. The use of diagnostic laparoscopy is a great minimally invasive tool to detect early patients who have established bowel gangrene, and hence can undergo definitive resections early, before sepsis and multiorgan failure sets in. Methods: The present study and was conducted in Departments of Surgical and Medical Gastroenterology Ashwini Sahakari Rugnalaya and Research centre Solapur, a tertiary referral institute intier 3 city. Patients from October 2012 to May 2016 were analysed. Patients were divided into two groups, one from 1st October 2012 to November 2013, and second group from December 2013 (after institution of early laparoscopy protocol) to May 2016. The age, sex distribution, etiology of acute mesenteric ischemia and presence of hypercoaguable states were analysed. Patient outcomes in both groups with relation to anastomotic leaks, and mortality were analysed. Results: A total of 42 patients were included in the study. The groups were divided into No early Laparoscopy Group (16) and Early Laparoscopy Group (26). The maximum incidence was between 51 and 60 year age group (18). 30 patients were males and 12 females. Predominant etiology of Acute mesenteric ischemia was Superior mesenteric artery thrombosis (20 cases) followed by Superior mesenteric venous thrombosis and combined SMA and Celiac artery thrombosis (7 cases each). Anastomotic leaks were identified in 72.2% of patients in No Early Laparoscopy group versus 27.2% patients in Early Laparoscopy group. Mortality in No Early Laparoscopy group was 43.5% versus 7.69% in Early Laparoscopy Group. Conclusions: Early diagnostic Laparoscopy is beneficial in patients with confirmed Acute Mesenteric arterial or venous thrombosis with regards to reducing morbidity and mortality and should be part of a protocol based treatment strategy.

I19
Adult intussusception- A case series study. Aravind S Ganapathi, Govt Medical College, Trivandrum

Introduction: The purpose of this study was to determine the aetiology, clinical presentation, common types and management of adult intussusception. Methods: The medical records of 77 adult patients with a final diagnosis of intussusception admitted in Medical College Hospital Trivandrum during 2011 to 2013 were collected and studied. Results: Of the 77 patients 47 (61%) were males and the mean age was 52 years. 68 (88%) patients were admitted through casualty with acute symptoms. The common presentations were abdominal pain (95%), vomiting (64%) and rectal bleeding (29%). Common examination findings were abdominal tenderness (45%), guarding (39%) and abdominal mass (38%). 12 (16%) patients had a prior episode of intussusception. All patients took plain Xray abdomen and USG abdomen. 22 (29%) and 33 (43%) patients had evidence of intestinal obstruction in X ray and
USG respectively. 50 (65%) patients had intussusception in USG with ileocolic (25) as the most common type. CT abdomen was taken for 28 (36%) patients in which 23 (82%) had intussusception with ileocolic (9) as the most common type. 53 (69%) patients underwent surgery and the most common procedure was right hemicolecction (25) followed by resection and anastomosis (23). Intra operatively 42(79%) patients had intussusception with ileocolic (23) as the most common type. Intra operatively 14 (26%) patients had bowel gangrene. 49 patients had a biopsy proven cause for intussusception with malignancy (21) as the most common cause. Conclusions: Most patients in our series presented to casualty with clinical triad of abdominal pain, vomiting and rectal bleeding. USG scan of abdomen could diagnose only 65% of cases while CT abdomen could diagnose 82% cases. The most common type of intussusception was ileocolic which is in contrary to previous studies where colocolic is considered as the most common type. Surgery is the mainstay of treatment with right hemicolecction being the most common surgery being performed. The most common cause in our series was malignancy. So we recommend early CT abdomen and early surgical intervention in adult intussusception. (This is the largest study on adult intussusception when compared to previously published studies)

I20
Managing Appendicular Mass– A single centre 10 year experience. Suraj Surendran, Sasank Kalipatnapu, Suchita Chase, Christian Medical College And Hospital, Vellore

Introduction: Appendicular mass is an inflammatory phlegmon which is formed as sequel to acute appendicitis. The management of appendicular mass is non-operative in nature. After the initial successful non-operative management, there is a lack of consensus on its further management. Aim: The experience in managing appendicular mass and its outcomes at a tertiary care centre in South India over 10 years was revisited. Methods: A retrospective study was done among adult patients who had been managed with appendicular mass in a tertiary care center over the last 10 years. We extracted data from the hospital records about demographic and clinico-pathological details and descriptive analysis was done. Results: There were a total of 46 patients with mean age of 41.76 years (15-85 years). 63.04% were men and 36.96% were women. The presenting symptoms were abdominal pain (100%), fever (56.52%) and nausea/vomiting (23%). The median total counts was 12400/cu.mm (6300 to 22300/cu.mm) and 13% had left shift. The primary imaging modality was ultrasound in 60.87% and CT in 17.39%. 7 patients (15.22%) underwent ultrasound and CT. Imaging findings were suggestive of an inflammatory mass in 56.52%, abscess in 23.91% and acute appendicitis in 9%. 40 patients (87%) was successfully managed with conservative approach (Ochsner-Sherren regimen). Choice of antibiotic was first line in 95.56% and broad spectrum in 4.44% with median duration of therapy being 10 days. Three patients (6.52%) required image guided drainage, but did not end up in an operation. Among the three who required operation, two developed complications. 24 patients (52.17%) underwent interval appendicectomy (IA). 5 patients (10.86%) had recurrent acute appendicitis. The mean follow up period was 11 months. Among all the patients who underwent an operation, 46.5% had chronic appendicitis, 18% had acute appendicitis and 10% were normal. In conclusion, majority of patients were managed conservatively. The rate of recurrent appendicitis was only 10.86%. 
Colon and Rectum

C1
Gastrointestinal stromal tumor (GIST) of the rectum: A rare case report. Ashok Kumar II, Ashok Kumar, Sandeep Verma, SGPGIMS, Lucknow

Introduction: The most common site of GIST is stomach (60%-70%), followed by the small intestine (20%-25%), whereas rectum involves only in about 5% cases of all GISTs. Rectal GISTs make up 0.1% of all tumors originating in the rectum. Here we report, a case of rectal GIST. The Case: A 64 year male presented with complain of recurrent bleeding per rectum for 3 years which increased in frequency and amount, for last two day. He had no history of constipation, diarrhea or urinary symptoms. Abdominal examination was unremarkable. Per rectal examination revealed a 1.5 cm fleshy growth start from anal verge at 4'o clock to 8'o clock position. Colonoscopy shows ulcerated rectal growth at anal verge extending proximally up to 10cm. CECT abdomen revealed a large heterogeneously enhancing mass lesion measuring 8X8.5X8.1 cm, arising from the rectum causing significant narrowing the lumen in distal rectum, above finding were confirmed by MRI pelvic. Abdomino-perineal resection done under general anesthesia. Gross findings: A large 10x10 cm polyoidal mass was present, about 1 cm above anal verge, rest colon was normal. Histopathology shows malignant GIST with mitotic activity 35/50 HPF, tumor was positive for CD117, CD34, S-100, Ki 67-15%. Result: Immediate post operative procedure period was uneventful, on 6th postoperative day he developed post operative SAIO, which was successfully managed with conservative treatment. Patient was discharge in satisfactory general condition with advice of adjuvant chemotherapy. Conclusion: Although rectal GIST is extremely uncommon, however, it should be included in differential diagnosis when a tumor in the rectum is detected. Biopsy of the tumor is essential, since this makes it possible to reach a sure preoperative diagnosis based on the immune-histological features.

C2

Introduction: Pneumatosis intestinalis is a rare disease characterized by intramural gas in intestine. It can occur anywhere in GI tract from esophagus to rectum. We present a case of small bowel pneumatosis intestinalis which was detected on laparotomy for pneumoperitoneum and later managed with hyperbaric oxygen therapy (HBOT). The Case: 55 year old male diagnosed case of schizophrenia on treatment presented in outpatient department with history of recurrent abdominal pain, distension and constipation. There was no history of vomiting or fever. Patient had history of corrosive ingestion in past for which feeding jejunostomy and endoscopic dilatation of esophagus was done. On evaluation patient had tachycardia, abdominal fullness and mild tenderness. X ray chest PA view and abdomen revealed pneumoperitoneum. CECT abdomen revealed pneumoperitoneum with minimal interloop free fluid. After optimization patient underwent laparotomy. Intraoperatively there was evidence of pneumatosis involving mid jejunum to terminal ileum. Adhesive bands were seen in distal ileum. There was no evidence of perforation, contamination. In the presence of extensive pneumatosis intestinalis involving more than 80% of small bowel, cause of obstruction could not be evaluated. So a decision second look laparotomy after HBOT was planned. Patient received 2 sessions of hyperbaric oxygen therapy at 2 atmosphere for 90 minutes. Re-laparotomy revealed significant decrease in pneumatosis and normal small bowel. Obstruction was ruled out. Patient received 9 more sessions of HBOT. Patient was started orally on day 3. Patient recovered well and symptomatically improved. Discussion: In Pneumatosis intestinalis, there is extraluminal gas accumulation in submucosal and subserosal planes of bowel. Most cases are asymptomatic and detected incidentally. CECT is most sensitive investigation for diagnosis of pneumatosis. If there are signs of bowel ischemia and peritonitis, emergency surgery should be done. Patients with symptoms of peritoneal irritation and radiological signs of pneumatosis should be managed conservatively. HBOT in carefully selected patients is safe and effective treatment. References: 1. Jamart, J. Pneumatosis cystoides intestinalis: a statistical study of 919 cases. Acta Hepatogastroenterol (Stuttg). 1979;26:419–422. 2. A. Koreishi, G. Y. Lauwers, and J. Misdraji, “Pneumatosis intestinalis: a challenging biopsy diagnosis,” American Journal of Surgical Pathology, vol. 31, no. 10, pp. 1469–1475, 2007. 3. Ho, L.M., Paulson, E.K., Thompson, W.M. Pneumatosis intestinalis in the adult: benign to life-threatening causes. AJR Am J Roentgenol 2007; 188:1604–1613. 4. Joseph D. Feuerstein; Nicole White; Tyler M. Berzin. Pneumatosis Intestinalis With a Focus on Hyperbaric Oxygen Therapy. Mayo Clin Proc 2014;89(5):697-703.

C3
Pleural extension of pseudomyxomaperitonei – A...
**Introduction:** Pseudomyxoma peritonei is a rare, low grade tumor of peritoneum. It is characterized by presence of mucinous fluid and tumor in abdomen. Pleural extension of pseudomyxoma is rare and is postulated to be due to iatrogenic damage of diaphragm during peritonectomy, presence of congenital or acquired pleura-peritoneal communication or direct transfer via lymphovascular spaces. We report a case of pleural pseudomyxoma in an operated case of pseudomyxoma peritonei managed with excision of tumor and heated intrathoracic chemotherapy.

**The Case:** 57 year old male, known case of pseudomyxoma peritonei had underwent staged complete cytoreductive surgery with HIPEC in 2012. Patient received adjuvant chemotherapy and was doing well till December 2015. Patient presented with history of progressive breathlessness of 3 months duration. On evaluation patient was found to have left pleural effusion. USG guided aspiration of fluid revealed mucoid material. CECT chest and abdomen revealed left lung collapse with effusion and minimal mesenteric disease with no ascites. After preoperative optimization patient underwent left lateral thoracotomy, excision of complete pleural tumor with decortication and heated intrathoracic chemotherapy. Intrathoracic chemotherapy was given with cisplatin at dose of 100mg/m² body surface area at 40 degree Celsius for 90 minutes. Post operatively patient had complete lung expansion. There was no air leak from lung, no chemotherapy related side effects. Patient was discharged on post operative day 8. On one month follow up patient was asymptomatic and had minimal residual disease in left pleural cavity for which oxaliplatin based chemotherapy was started.


**C4**

**Increasing Horizons of TEM - Hybrid TEM guided excision of large anorectal polyp.** Sanjeev M Patil, Yogesh A Bang, Shreeysh Modak, Pradeep R, Gurudu Venkat Rao, Asian Institute of Gastroenterology, Hyderabad

Trans anal endoscopic microsurgery (TEM) was developed for excision of rectal lesions to overcome technical limitations of conventional transanal excision. Over last 3 decades its use has been studied in various ano-rectal pathologies ranging from benign polyps to T1/T2N0 rectal adenocarcinomas. Hybrid TEM: TEM equipment consists of rectoscope, stereoscope, and long handled instruments with CO2 insufflator, suction and irrigation device. Rectoscope is usually 4 cm in diameter and 12 to 20 cm in length. Because of this anal or ano-rectal polyp excision is not possible with TEM as rectoscope occupies anal canal. Rather than local excision of these lesions we use Hybrid TEM. In this technique rectoscope is just entered into anal canal and excision of polyp is done without using CO2 insufflation or applying air tight faceplate over rectoscope. With this technique, anal or ano rectal can be resected using optical stereoscope with good illumination.

**The Case:** 42 year old male presented with history of intermittent episodes of bleeding per rectum since 8 months. Colonoscopy revealed large circumferential flat polyoidal lesion from dentate line extending 6 cm into rectum. Biopsy was suggestive of tubulovillous adenoma with low grade dysplasia. MRI pelvis revealed circumferential mucosal lesion in anorectum. Patient was planned for TEM guided excision of polyp. Under GA, with patient in lithotomy position, TEM rectoscope was placed in anal canal. There was large polyp with 280 degree circumference and 6 cm length. Submucosal infiltration of NS:Adrenaline was done. Without using CO2 insufflation under stereoscopic vision resection of polyp was started with 1 cm margin. Circumferential resection was done in anal canal and polyp was lifted up. Once anal canal part done, faceplate was applied over rectoscope and CO2 insufflation applied. Complete circumferential resection of rectal part of polyp was done. Mucosal defect was closed with PDS 3-0 continuous suture. Operative time was 120 minutes and there was minimal blood loss. HPE revealed tubulovillous adenoma with low grade dysplasia and margins were free. Patient improved well and was discharged on post operative day 1. **Discussion:** Traditional indications of TEM are a rectal polyp upto 10 cm in rectum, 4 cm size and 40% circumference. With Hybrid TEM, anal canal or anorectal polyp excision is also feasible. Once the malignany is definitely ruled out, even large ano-rectal polyp can be excised with complete margins using TEM. For anal or anorectal polyps hybrid TEM is easy, safe and good alternative to local excision in view of better visualization and better ergonomics.

**C5**

**Intersphincteric Resection.** Raghavendra BK, BGS Global Hospital, Bengaluru

We present an operative video of laparoscopic intersphincteric resection to highlight the feasibility of sphincter-saving approach as an alternative to APR in
selective cases. A 50-year old lady presented with bleeding p/r of 2 months duration and weight loss. Colonoscopy showed ulceroproliferative lesion at 5 cm from anal verge. Biopsy was adenocarcinoma. Imaging with CT and MR showed eccentric wall thickening of rectum with periserosal infiltration along left posterolateral aspect (Stage T3) with perirectal lymph nodes. She was not willing for neoadjuvant radiotherapy. She underwent Laparoscopic Intersphincteric resection with diverting loop ileostomy. Post-operative period was uneventful.

C6
A Rare Case of Fatal Appendiceal Mucormycosis in a Known Case of AML. Priyanka Akhilesh Sali, Kamal Sunder Yadav, Hitesh Mehta, Lilavati Hospital and Research Centre, Mumbai

Appendiceal mucormycosis is a rare life-threatening infection seen in immune-compromised patients. It is usually seen in chemotherapy induced neutropenia in patients with hematological malignancies. Clinically, the symptoms and signs may be masked due to ongoing corticosteroids. The condition may mimic bacterial appendicitis and the less serious condition, typhilitis. The disease demands prompt surgical debulking and aggressive antifungal treatment. However, surgery is delayed due to the poor performance status and severe neutropenia. This may lead to perforative peritonitis and further dissemination. The survival rates of such disease is dismal. Unfortunately, the diagnosis may be confirmed only on histological examination of the surgically excised tissue. Very few cases have been reported so far. We present here once such fatal case of appendiceal mucormycosis in a 14 year old boy who was immunosuppressed due to intensive induction therapy for Acute Myeloblastic Leukemia.

C7
Prognostic Significance of Thrombocytosis in Colorectal Cancer. Rakesh Kumar Yadav, King George's Medical University, Lucknow

Introduction: Thrombocytosis is known to be a poor prognostic factor in several types of solid tumors. The aim of this study is to retrospectively investigate the prognostic role of pretreatment thrombocytosis in colorectal cancer.

Methods: Seventy two colorectal cancer who were enrolled in our hospital between December 2009 and December 2014 were retrospectively reviewed. Thrombocytosis was defined as platelet >400×10^9/L. We compared patients with thrombocytosis and those without thrombocytosis in terms of survival.

Results: The median survival of patients of colorectal cancer with normal platelet counts was 34 months (95% CI: 29.5-38.5) and those with thrombocytosis was 9 months (95% CI:0.0-21.8) (log rank p value=0.002). Cox multivariate analysis demonstrated that thrombocytosis (hazard ratio, 3.1; 95% confidence interval, 1.4–7.1; P = 0.005) was independently associated with overall survival in patients colorectal cancer.

Conclusion: This study showed that thrombocytosis is a prognostic factor predicting overall survival in colorectal cancer patients.

C8
Laparoscopic Management of Colonic Perforation Post Colonoscopy. Mustafa Razvi, Narsimhan Mohan, Ramesh Ardhani, MMHRC Hospital And Research Center, Madurai

Colonic perforation post colonoscopy is a rare complication, occurring in upto 0.05% cases of diagnostic and 0.1% of therapeutic colonoscopies. Colonic perforation following scope can be identified and closed through laparoscopic means.

C9
Composite Gluteus Maximus and Antropyloric Graft for Neoanal Reconstruction in Cases with Severe Fecal Incontinence. Prabhu Singh, Nikhil Chopra, Saket Kumar, Abhijit Chandra, Pradeep Joshi, King George's Medical University, Lucknow

Introduction: Severe fecal incontinence (SFI) has a significant negative impact on patient's physical and mental wellbeing. Antropyloric valve (APVT) has been transposed perineally to achieve continence with encouraging initial results. However, lacks the voluntary control remains a problem in some patients. We have used Gluteus maximus (autologous skeletal muscle) wrap around the perineally transposed pyloric valve to provide voluntary control in such cases. Methods: Patients, who previously had undergone APVT, with inadequate voluntary control, were selected for gluteus muscle wrap. Informed written consent was obtained from all patients. They were explained about the possible risks of the procedure. Results: Total 8 patients (3 female and 5 male) underwent the procedure. Median age was 30.3 yr (Range: 13-45 yr). Improved voluntary control over defecation and reduced spontaneous leakage were seen in all patients following gluteoplasty. After surgery there was significant improvement in both resting and squeeze pressure (median resting pressure- 21 (range 2-30)and median squeeze pressure 95 (range 35-190). All patients were satisfied with the procedure. All patients having significant improvement in the St. Mark's incontinence score (range 4-10). Conclusion: Composite graft using APVT with gluteoplasty in patients of SFI can serve as efficient procedure for achieving good control. However due to morbidity and lack of long term data on the effectiveness of the procedure, it should be recommended for highly selected individuals in a controlled setting before recommending it for general population.
**C10**

**Prospective Assessment of Feasibility and Short Term Outcomes after Laparoscopic Ultra-Low Anterior Resection for Low Rectal Cancers.** Manish Jain, Subbiah Rajapandian, Ramakrishnan Parthasarthi, Senthil Ganapathi, Praveen Raj Palanivelu, Chinnawamy Palanivelu, GEM Hospital, Coimbatore

**Introduction:** Laparoscopic sphincter preserving surgery for low rectal cancers is always considered challenging because of the technical difficulties and poor QoL after surgery. The focus of this study is to assess the feasibility of laparoscopic sphincter preserving surgery, pathological radicality, and functional outcomes using a validated LARS questionnaire. **Methods:** It was the prospective, observational study from March 2014 till December 2016. All patients with rectal cancer having distal margin <9 cm from anal verge were followed up for 1 year after surgery and their bowel function assessed using LARS questionnaire. **Results:** The pathological radicality was assessed by average number of harvested lymph nodes which was 18.2±8.7. Distal margin was 2.9±1.8 cm. The distal margin <1 cm was found in 7 patients (12.7%). CRM was positive in 2 patients (3.6%). Anastomotic leak was detected in two patients. Anastomotic stricture developed in 6 patients (10.9%). Mean LARS score at 1 month (37.23±3.4) reduced to 13.45±6.9 at 1 year. Side to side anastomosis was the significant factor for low LARS at 6 months. Patient with ileostomies had significantly higher LARS score at 6 months. **Conclusion:** For sphincter preserving surgery in low rectal cancers, our study showed that laparoscopic approach is feasible and safe. It does not increase the short term oncological risks and complications. Both the incidence and severity of LARS reduce with time with most of the patients improve by 6 months to 1 year.

**C11**

**Neuroendocrine tumour of rectum.** Muppalla N V NYesaswy

Neuroendocrine tumours originate from neuroendocrine cells of endodermal origin, spreading along the gastrointestinal tract. Prevalence of neuroendocrine tumour is around 35/100,000, including all types. They are most frequently observed in gastrointestinal system (67%). In GI System, they are most frequently observed at ileum (34%) and secondly at rectum (27.4%). Rectal NETs compose 1–2% of all rectal tumours, and generally demonstrate benign clinical profile. We experienced a 60 yrs old male presented to us with complaints of mass descending per rectum during the act of defecation since 2 months. On further examination & investigation, we came down to diagnosis of Sessile polyp of distal rectum. Trans-anal excision of the lesion was done. Post op HPE report was Well differentiated NET of Rectum with low malignant potential. Pt was discharged on 3rd post op day. Pt is under follow up till date with no recurrence.

**C12**

**Adynamic Graciloplasty for Fecal Incontinence: Video.** Varun Dasari, V Venkatarami Reddy, Gavini Sivaramakrishna, C Chandramalaliteeswaran, M Brahmneswara Rao, Sri Venkateswara Institute of Medical Sciences, Tirupati

**Introduction:** Fecal incontinence is a socially crippling disorder affecting 2–7% of adults. Patients unresponsive to conservative measures are divided into two categories. Those with an identifiable anatomic sphincter defect benefit with overlapping sphincteroplasty. The second group includes those with extensive sphincter damage. **Methods:** Demographic data, cause of fecal incontinence and outcomes of the surgery were recorded in patients undergoing graciloplasty for fecal incontinence from Jan 2014 to April 2016. We present the video of one surgery depicting the steps involved in it. **Result:** Five patients underwent adynamic graciloplasty in our institute during the study period. Two of them had perineal trauma as the cause of fecal incontinence. Perinatal injury was the cause in the other three patients. All patients had an uneventful post operative recovery. On follow up, they had good recovery of sphincter tone and were continent. **Conclusion:** Adynamic Graciloplasty is an effective technique for selected patients with fecal incontinence with good outcomes.

**C13**

**Basidiobolomycosis A Rare and Underdiagnosed Fungal Infection Mimicking Eosinophilic Colitis.** Siddhant Vijay Mathurvaishya, AIG Hospital, Hyderabad

**Introduction:** Basidiobolomycosis is a rare fungal infection caused by the fungus Basidiobolus ranarum. Usually basidiobolomycosis is a subcutaneous infection but rarely gastrointestinal manifestations have been described. Victims of this infection are usually healthy immunocompetent subjects, in contrast to the commoner opportunistic fungal infections. The infection is presumably acquired through insect bites or exposure to the fungus following minor trauma to the skin. **The Case:** A 45 year old male presented with history of abdominal pain, intermittent loose motions and anorexia since 6 months. On evaluation...
A 5 year old boy presented with symptoms of one-month duration. He had no fever, jaundice or gastrointestinal symptoms. Colonoscopy showed ulcerative nodular growth at the hepatic flexure, biopsy from it showed granulomatous inflammation in favour of kochs etiology. He was started on AKT which he took for 4 months with no symptomatic improvement. Blood investigations showed mild anaemia and peripheral eosinophilia 25%. Serum IgE levels were significantly elevated 3635 IU/ml, absolute eosinophilia count was 1220 cells/mm3. Patient was then given a trial of steroids for two weeks in view of suspected eosinophilic colitis. Patient did not respond and later got admitted with obstruction, got operated and the histopathology report basidiobolomycosis is an emerging infection that leads to diagnostic confusion, morbidity and mortality. Diagnosis of this requires a high index of suspicion and awareness.

C14

Introduction: The small bowel is the second common site of gastrointestinal Lymphoma of which ileum (60%-65%) is the most common site. We report a case of Non Hodgkin’s Lymphoma (NHL) of ileum presenting as a Gall bladder (GB) mass. The Case: A 5 year old boy presented with abdominal pain and non-biliary vomiting of one-month duration. He had no fever, jaundice or gastrointestinal bleed. His laboratory evaluation showed Hb- 11.9 g/dl, TC- 17300 cells/mm³ (P 79, L20, E1), ESR-c10, and Total Bilirubin- 3.0 mg/dl. Abdominal USG and MRI revealed thickening of GB wall with a pseudocystic appearance of GB neck. CT abdomen revealed short segment wall thickening of distal ileum and a mass lesion in hepatic hilum with loss of fat plane with GB. Treatment: Diagnostic Laparoscopy revealed a mass lesion in the hepatic hilum adherent to GB and a focal circumferential thickening in distal ileum. Laparoscopic segmental ileal resection, cholecystectomy with hilar mass resection and liver biopsy were done. Postoperative period was uneventful and he was discharged on day 6. Histopathology showed NHL (Diffuse large B cell variant) of ileum and hilar mass with infiltration of GB wall and normal mucosa. Liver biopsy was negative for lymphomatous infiltration. He underwent chemotherapy (COPADM regime) and is healthy on nine months follow up. Conclusion: Ileal lymphoma presenting as a GB mass is rare and should be considered in the differential diagnosis of GB wall thickening especially in the pediatric age group.

C15

Introduction: Synchronous primary tumours are rare and present a diagnostic and therapeutic challenge. We report an unusual case of carcinoma rectum with incidental detection of duodenal malignancy and invasive colonic polyp in a non-FAP, non-PJS patient and the challenges faced during management. The Case: A 53 year old male, ECOG 1 performance status, presented with bleeding and mucus per-rectum, occasional constipation with loss of weight and appetite. He had a first-degree family history of colorectal malignancies. Per-rectal examination showed a mobile growth 4 cm from anal verge occupying 30% circumference. Laboratory evaluation showed a normal hemogram and liver function, CEA-9 and CA 19-9:91.3. CT Abdomen showed an incidental duodenal polyp involving distal D2 segment and three colonic polyps apart from the lower rectal growth without locally advanced disease. Colonoscopy revealed an ulceroproliferative growth 4cm from anal verge, sessile polyp in descending colon, 2cm polyp in transverse colon and asessile polyp in caecum. Biopsy of Polyps showed tubulovillous adenoma with high-grade dysplasia (HGD) and rectal biopsy moderately differentiated adenocarcinoma. Side viewing Endoscopy showed a periampullary mass lesion not amenable for endoscopic polypectomy, the biopsy of which showed HGD. Treatment: Following multidisciplinary evaluation, plan was made to target the primarily symptomatic tumor first. A total proctocolectomy for this patient however was not considered in view of the need for adjuvant local therapy for carcinoma Rectum, which will have deleterious effect on the subsequent ileal pouch. Moreover, the need for a concomitant pancreaticoduodenectomy will result in short bowel related morbidities. He was planned for Laparoscopic ultra low Anterior Resection followed by transduodenal polypectomy. Synchronous colonic polyps were planned for colonoscopic polypectomy in the follow-up period. Intraoperatively after Laparoscopic ultra low Anterior Resection, the duodenal polyp had a broad base, not amenable for transduodenal polypectomy and hence proceeded with an open Classical pancreaticoduodenectomy. Postoperative period was uneventful except for Grade A pancreatic leak, and he was discharged on day 12. Histopathology showed moderately differentiated mucinous adenocarcinoma Rectum (pT2N0M0; Stage I) and Duodenal Ampullary well differentiated adenocarcinoma (pT2N0M0; stage IB). One month after discharge, he underwent an elective uneventful colonoscopic polypectomy of the remaining three polyps. Histopathologically all were tubulovillous
adenomas with mild dysplasia for descending colonic polyp and HGD for cecal polyp. However the sessile polyp in transverse colon had HGD with stalk showing one focus of invasion. He was planned for adjuvant therapy (FOLFOX) and colonoscopic follow up in view of the morbidity of added colectomy. **Conclusion:** Synchronous primary tumors pose therapeutic challenge and factors like patient’s general condition, organ of origin, and stage of individual cancer need to be considered in decision making. If each of the cancers has a possibility for cure, radical surgery should be performed as single or staged procedure with emphasis on primarily symptomatic tumor.

**C16**
**Early Surgical Intervention for Ulcerative Colitis.**
Parvezikballahi Jamadar, KEM Hospital, Pune

UC is curative for the intestinal manifestations of the disease and nearly eliminates the risk of future malignancy. Proctocolectomy with IPAA can be performed safely with a low complication rate and maintains the normal route of defecation albeit with slightly altered frequency. Patients report significantly improved overall and health related quality of life after restorative surgery even when the surgery was performed for asymptomatic disease. At present, medical therapy does not decrease the markedly elevated risk of colonic malignancy associated with chronic UC requiring the patient to eventually undergo surgery even if they have asymptomatic disease. Aggressive medical therapy may be less cost effective than early surgery and may increase the morbidity of the surgical procedure. We operated 25 cases within 6 weeks of diagnosis and followed up over period of 5 yrs. no immediate post op complication. 2 patients had pouchitis managed conservatively. 1 has intestinal obstruction was explored n doing well. All are free of immunosuppressents.

**C17**
**Colonic Stricture in Ulcerative Colitis- A Case Report.**
Gopalan Sathiyavelavan, S Karupannan, Sholai Medical Center, Erode

A 58 years old female a known ulcerative colitis patient on treatment for past 10 years presented to us with pain abdomen, vomiting and increased frequency of stools for one week. Pain has become severe with abdominal distension and vomiting. On examination she was dehydrated with abdominal features of sub acute intestinal obstruction. She improved with resuscitation. Colonoscopy done showed a stricture at descending colon with active disease in rectum and sigmoid colon. Biopsy of stricture site was inconclusive. CECT abdomen showed stricture of descending sigmoid junction with partial obstruction. Proctocolectomy with end ileostomy was done. Post operatively patient recovered well and ileostomy was functioning well. Pathological analysis came as chronic ulcerative colitis with well differentiated adenocarcinoma (pT3N0Mx) and rest of bowel showed features of chronic ulcerative colitis with focal dysplasia. 19 pericolic lymph nodes examined were free of tumor. Patient was subjected to adjuvant therapy and is on regular follow up.

**C18**
**Natural Orifice Specimen Extraction (NOSE) with Single Stapling Colorectal Anastomosis using Single incision port technique for Laparoscopic Anterior Resection.**
Saurabh Bansal, Sheng-Chi Chang, William Chen, Action Medical Institute/Action Cancer Hospital, New Delhi, and China Medical University Hospital, Taiwan

**Introduction:** Natural Orifice Specimen Extraction (NOSE) can provide additional advantages to minimal access surgery eliminating morbidity and post-operative pain related to the extraction surgical site and is considered a prequel of Natural Orifice Transluminal Endoscopic Surgery (NOTES). Both the Double Stapling Technique (DST) and Triple Stapling Technique (TST) are among the most frequently described techniques for performing colorectal anastomosis in NOSE-LAR. Although the DST remains widely accepted, anastomotic leaks occur in 1-19% of patients14 and may be related to technical factors such as undue traction on the rectum during application of linear staplers, oblique stapler line, multiple linear staples, crossing of linear and circular staple lines and ‘dog-ears’ at each extremity of the linear staple line. These technical drawbacks associated with DST or TST anastomosis could possibly be avoided with the use of the single stapling technique (SST), as described for rectal transection in open surgery. Surgical technique- The patient were positioned in a Trendelenburg position. After open insertion of a LAGIPORT™ (single incision multiport) transumblical port a 10-15 mm Hg pneumoperitoneum was created. An extra 5mm working port was introduced in right iliac fossa for right hand. Diagnostic laparoscopy is completed. Growth was identified in lower sigmoid colon. Medial to lateral mobilization of the sigmoid colon by dividing the peritoneum from sacral prometer towards Inferior mesentery pedicle using monopolar scissors. Pedicle is dissected using scissors, high dissection and low ligation of IMA distal to left colic artery is done by applying hemoclips. Dissection is proceeded superiorly towards IMV (inferior mesenteric vein) which is clipped and divided. Medial mobilization is done up to lateral attachments along the line of Toldt’s safeguarding ureter and gonadal vessels. Lateral attachments are released up to splenic flexure. Rectum is mobilized up to mid rectum. A free silk tie is tied proximal to the point of division on
rectal stump, betadine-saline irrigation is done for rectal stump to avoid contamination of peritoneal cavity. Stump is divided using scissors after occluding proximal side with free tie. Colon brought in continuity through single incision port and divided maintaining adequate proximal margin. Proximal anvil is fixed in standard manner and loop placed back in peritoneal cavity. Rectal stump margin is purse string sutured using prolene 2-0 and tied over stapler anvil when kept open. Proximal and distal anvil is interlocked in standard way and a complete circular anastomosis is obtained using single stapling technique. On table anastomosis is checked using intraoperative colonoscopy. Jackson Pratt drain is placed in pelvis. Single incision wound is closed using vicryl and skin staplers.

C19
Laparoscopic Total colectomy with ileorectal anastomosis— Video presentation. Prasad Krishnan, Aster Medcity, Kochi

76 year old arabic male presented with bleeding per rectum on and off and constipation. No loss of appetite or weight loss. Clinically – Obese BMI 35. Abdomen- soft. DRE-NAD. He underwent colonoscopy which was suggestive of multiple colonic polyps-3-4 in the hepatic flexure and 3-4 transverse colon & sigmoid colon. There was a rectal polyp at 12 cm from the anal verge. Polyp biopsy was done. Rectal polypectomy was done. Biopsy of the polyps were suggestive of high grade dysplasia. The excised rectal polyp of size8mm was suggestive of high grade dysplasia and focus of carcinoma in situ. Preoperative localization of the rectal polypectomy site was done using methylene blue. Total proctocolectomy with ileorectal anastomosis done. Issues are: Obese patient, Diffuse bleed. Video presentation to show: 1. Difficulty of lap procedure in obese patient surgery. 2. Friable fatty tissue. 3. The anastomotic technique.

C20
Robotic Right hemicolecction- Video presentation. Prasad Krishnan, Deepak Varma, Vipin, Prakash K, Aster Medcity, Kochi

54 year old patient presented with the complaints of bleeding per rectum and altered bowel habits since 1 month. He had no associated abdominal pain, loss of appetite, weight loss. He was evaluated with a Colonoscopy which showed, large polyp 4x3 cm broad based with low grade tubuovillous adenoma, CT scan of the abdomen showed broad based hepatic flexure polyp. Patient was taken up for Robotic right hemicolecction. Per operatively, he had a mass felt in the hepatic flexure with an enlarged mesentric lymphatic system. Robotic right hemicolecction was performed. Through 4 cm midline incision, colon was taken outside and resected using staplers and anastomosed with distal ileum side to side. Patient had an uneventful post op recovery. Gradually his condition improved. Gradually his condition improved. At the time of discharge he is comfortable, vitals stable and wound is healthy. Video presented: To show the Robotic technique involved.

C21
First Ever Robotic Stage One ALPPS in India: For Colorectal Liver Metastasis. Jagadeesh Krishnamurthy, Adithya V Naragund, Basant Mahadevappa, HCG Hospitals, Bangalore

Introduction: In ideal patients normally 20% of the total liver volume is an acceptable future liver remnant (FLR). In today’s era of neoadjuvant chemotherapy (NACT) hepatocellular injury is common and up to 40% of FLR may be required. If a marginal FLR is inevitable, pre-operative PVE or two-stage hepatectomy with PV occlusion are used. Both take up to 14 weeks between stages and 30% of patients fail to reach the second resection either due to inadequate FLR growth or disease progression. A novel approach has been the development of a two stage short interval liver resection technique known as Associated Liver Partition and Portal Vein ligation (ALPPS). So far only less than ten totally Robotic ALPPS procedures have been described in the literature. This video demonstrates the technical aspects of totally robotic ALPPS stage-1. The Case: A 57 year old male with rectosigmoid adenocarcinoma with multiple right liver & segment IV A metastases. Received six cycles of NACT from Aug to Nov 2015 with FOLFOX/ Avastin. Received four cycles of CAPIRI+Avastin. MRI showed multiple well defined rim enhancing lesions in right lobe largest 2.2 cm and 5.7 cm x 2.6 cm lesion in sigmoid colon. PET CT scan done later revealed Interval progression of metabolically active neoplastic lesion in the sigmoid colon. Mild interval progression of multiple metabolically active hepatic focal lesions. Preoperative CT volumetric scan showed a FLR/TLV (Future Liver Remnant/Total Liver Volume) of 23%. Since patient received 10 cycles of NACT, ALPPS procedure was planned ahead of direct liver resection. Stage-I totally robotic procedure was done using DaVinci Si robot. Technique: Robotic ALPPS Stage 1 sparing left Lateral segment & IV B + Anterior resection was done. Infra umbilical midline camera port by open technique. One port on the patient’s right in mid clavicular line (MCL), second & third port on the patient’s left hypochondrium & flank with an additional port for the assistant on the left side. Rectal tumor resection followed by parenchymal transection between the FLR and the diseased part of the liver sparing segment IV B with concomitant right portal vein ligation done robotically. Patient did not require any blood/blood products transfusion with blood loss of around 100 cc. CECT abdomen done on POD7 showed hypertrophied Left lateral segment. Second stage was
performed on eighth postoperative day with a FLR/TLV of 40% by open approach. Postoperative pathology of liver & rectal tumor showed margins free from disease. Now patient is on 3 month follow up doing well with no recurrence. **Conclusions:** ALPPS procedure performed by robotic approach could be a safe and feasible technique in experienced centers with advanced robotic skills. Patient's recovery after stage-one is faster with lesser post-operative pain, early ambulation, lesser post-operative complications and most importantly FLR hypertrophy as good as open technique. **References:** 1. E. Solomonov, E. Nesher, S. Aizner et al, Robotic Alpps: Major Liver Surgery May Be Performed Safely Through A Minimally Invasive Approach. A Presentation Of Five Cases. Http://Www.Hpbonline.Org/ Article/S1365-182X(16)00155-6/Pdf.

**C22**

Laparoscopic Ultra-low anterior resection video presentation in a patient with adeno-carcinoma rectum. *Gigi Varghese, Christian Medical College, Vellore*

**Aims:** This is a high definition edited combined video presentation of 15 minutes duration of Laparoscopic Ultralow anterior resection procedure performed on a Male and a Female patient for low rectal adenocarcinoma after adequate waiting period following neo-adjuvant long course chemo-radiation therapy with 28 fraction 5040 cGy. The objectives of this video presentation is to demonstrate important steps and point out possible pitfalls during Laparoscopic Ultra-low anterior resection in a radiated pelvis. **Conclusion:** Sphincter preservation resection for low rectal adenocarcinoma is feasible with neo-adjuvant chemo-radiation followed by Laparoscopic ultra-low anterior resection after adequate waiting period.

**C23**

A prospective pilot study comparing extralevator versus standard abdominoperineal excision in low rectal cancer. *Ramakrishnan Ayyoor Seshadri, Nicholas West, Shirley Sundersingh, Cancer Institute (WIA), Chennai and Leeds Institute of Molecular medicine, UK*

**Aims:** To compare the rates of circumferential resection margin (CRM) involvement, intra-operative perforation, amount of tissue removed around the muscularis propria (MP)/internal sphincter (IS) of the lower rectum and intra and post-operative complications in patients with low rectal cancer undergoing extralevator (ELAPE) as compared to standard abdominoperineal excision (SAPE). **Methods:** Twenty patients were randomised to one of the study arms in a 1:1 ratio using random number tables. Surgery was performed after a minimum of 6 weeks after completion of neoadjuvant chemoradiation. The intact specimens were photographed using a digital camera with a metric scale in the anterior, posterior, right and left lateral positions. After fixation, the specimen was serially cross-sectioned at 5 mm intervals and the sections were also photographed. Using specialised morphometry software, the amount of tissue resected with each operation was measured. Specific measurements were taken in the distal 10 slices including the area outside of the IS/MP and linear distances to the anterior, posterior and lateral CRMs. Post-operative complications were recorded using the Clavien-Dindo score. **Results:** The two groups were comparable demographically. The mean duration of surgery was significantly longer for ELAPE when compared to SAPE (201.5± 34.3 vs 294± 32.6 minutes, p<0.001) although the blood loss and Grade 3-4 wound complications were not significantly different. There was a non-significant trend towards more intra-operative perforations in the SAPE arm (30% vs 0%). The ELAPE arm had less CRM involvement compared to SAPE (20% vs 40%) and a greater mean distance to the CRM (4.1± 3.3 mm vs 5.1± 5.3 mm) although these were not statistically significant. ELAPE removed a significantly greater amount of tissue around the IS/MP when compared to SAPE (1132.03 ± 370.97 mm² vs 1911.39 ± 381.69 mm², p<0.001). The mean distance from the outer edge of the IS/MP to the circumferential margin was significantly greater in the ELAPE arm when compared to SAPE in the posterior (9.63±2.85 mm vs 28.28±2.73 mm, p<0.001) and lateral (9.72±3.31 mm vs 13.69±2.77 mm, p=0.009) parts of the rectum but not in the anterior part (6.10±3.92 mm vs 6.74±1.77 mm). **Conclusion:** ELAPE removed more tissue around the muscularis propria in the lower rectum and resulted in a lower rate of IOP and CRM involvement although we could not demonstrate a statistically significant difference due to the small sample size. The morbidity after ELAPE is comparable to SAPE. Registered with Clinical Trial Registry of India (CTRI no: 2013/05/003661)

**C24**

A largest Case Series of Stapled Trans Anal Rectal Resection for Rectal Prolapse Up to 4 cm from Anal Verge. *Ashwin Porwal, Healing Hands Clinic, Pune*

**Aim:** Numerous surgeries have been invented for the treatment of rectal prolapse, yet no ideal procedure has been described. The present study aims to observe the effectiveness and safety of Stapled Trans Anal Rectal Resection surgery in the Management of rectal prolapse up to 4 cm from anal verge. **Method:** We performed retrospective analysis of 33 patients’ who underwent Stapled Trans Anal Resection of rectal prolapse up to 4 cm from anal verge. Symptoms were recorded on VAS scale. Subject followed for the period of one year. **Result:** A total of 33 consecutive patients (14 males and 19 females) were enrolled with mean age of 55 yrs. Patients had history of medical (n=29) and surgical (n=4) treatment for rectal prolapse. Clinical presentation were rectal bleeding in 9
patients and mucosal prolapse in 33 patients. The mean surgery time was 30 minutes and mean hospitalization was for 24 hours. Most of the patients were resumed their normal activities by day 5 post surgery. Postoperative mild pain was observed in 24.5% patients in average 5.06±1.02 on the first day (with narcotic analgesic) and 2.04±1.67 during 5 days which didn't require usage of narcotic analgesic. Also, 14.4% patients reported urgency. Patient subjective satisfaction with the treatment was 90%. Repeat surgery was performed if symptoms were not relieved in the first session. In the recurrent group the recurrence rate was 12.12% (n= 4) at 6 months and 9.09% (n=3) at 1 year in the prolapsed group. **Conclusion:** Stapled Trans Anal Resection is an effective procedure for treatment of rectal prolapse and can be performed safely without major morbidity.

**C25**
**Fate of retained rectal stump after subtotal colectomy for ulcerative colitis.** Saurav Sharma, Amanjeet Singh, Azhar Perwaiz, Adarsh Chaudhary, Medanta Hospital, Gurugram

**Introduction:** Majority of the patients undergoing subtotal colectomy (STC) for ulcerative colitis finally undergo an ileoanal pouch procedure (IPAA). Very limited information is available regarding the fate of the retained rectal stump in the subgroup of patients who did not undergo IPAA for various reasons. **Methods:** We conducted this study from our prospectively maintained database of patients undergoing STC for ulcerative colitis. Between January 2004 and April 2016, 178 patients underwent STC for ulcerative colitis. **Results:** Twenty eight (15%) of these patients refused any further surgical procedures and therefore had a retained rectal stump. Reasons of reluctance for second surgery were varied, ranging from sheer denialism to fears of sexual dysfunction. Despite being instructed for regular surveillance, 5 patients were non-compliant and lost to follow up. The 23 compliant patients were followed up with yearly endoscopy, mean duration of follow up being 6.7 years. Fourteen (52%) of these patients underwent subsequent proctectomy within 14 months to 8 years of STC. Three patients developed cancer (3, 4 and 7 years after STC) which was detected on routine annual surveillance, 6 had persistent symptoms of rectal bleeding and pain and 5 changed their mind because of fear of malignancy. Patients who underwent proctectomy had a good quality of life and are doing well. Of the remaining 9 patients, only 3 are completely symptom free, the remaining 6 patients have occasional pain, discharge and bleeding from the rectal stump. **Conclusion:** Considering the risk of cancer, possible bleeding and pain from retained diseased mucosa and safety of completed proctectomy, we recommend excision of the rectal stump after STC.

**C26**
**Risk Factors for Early Post Operative Morbidity in Colorectal Surgery- Single Institutional Study.** Santosh CGudimani, Abhishek Bhagvat, Mohan N, Ramesh Ardhanari, Venkareddy P, MMMRC, Madurai

**Introduction:** The aim of this study is to identify the risk factors that are influencing the postoperative outcome in the patient undergoing elective colorectal surgery. **Methods:** The data of the patients undergoing elective colorectal surgery is collected retrospectively for last 5 years and the records were screened for prolonged hospital stay. Post operative complications were recorded from minor fever to abdominal leaks causing sepsis or mortality in the patient. **Results:** A total of 392 cases were operated electively during 2011 to 2015. Total of 168 hemicolectomies, 144 anterior resections, and 80 abdominoperineal resections done in a single tertiary care centre by dedicated colorectal surgeons. Postoperative morbidity in the form of minor fever to major cause of sepsis like abdominal leaks were entered into the complication charts. A total of 125 (31%) patients had some form major infection requiring treatment or change of antibiotic or cross consultation and high dependency care. Minor form illness seen in 94 (24%) patients which was managed conservatively. A total of 13 (3.3%) patients expired. **Conclusion:** Several proven risk factors were analyzed in the study like perioperative blood transfusion, presence of comorbidity, neoadjuvant therapy, whether laparoscopic or open surgery. These factors showed significant association. Preoperative leukocytosis and level of hemoglobin and conversion from laparoscopic to open also had significant association for post of complication.

**C27**
**Early Vs Delayed Closure Of Temporary Loop Ileostomy After Colorectal Surgeries: A Prospective Randomized Study.** Varun Dasari, V Venkatarami Reddy, Gavini Sivaramakrishna, C Chandramaliteeswaran, Munusuru Brahmeswara Rao, Annareddy Dinakar Reddy, Sri Venkateswara Institute of Medical Sciences, Tirupati

**Introduction:** Temporary loop ileostomies are commonly performed to protect a distal anastomosis in colorectal surgeries. Although they have been shown to reduce the number of leaks requiring surgery, they remain a source of complications and have an adverse effect on the quality of life. A few non-randomized studies have shown the feasibility of early stoma closure. **Aim:** To compare the outcomes of early and delayed closure of temporary loop ileostomy in terms of operative parameters, morbidity, mortality, and quality of life. **Methods:** The study was conducted from May 2014 to September 2015. Following creation of loop ileostomy after colorectal surgeries, distal loop contrast study was done on POD 7. Patients who had no leak were
randomized to either early closure (8-13 days) or delayed closure (after 6 weeks) group. Patient demographics, operative parameters, morbidity, mortality and quality of life data were recorded in both groups. **Results:** After randomization, there were 24 patients in each group. Both groups were comparable in terms of demographic data except for age, which was significantly higher (p=0.012) in the early closure group. Incidence of stoma related complications (p=0.01) and Pittman ostomy complication severity index (p<0.01) were significantly higher in the delayed group. Operative time (p=0.033) and Surgeons assessment score (p=0.0012) for the stoma closure surgery were significantly lower for the early closure group. There was no significant difference in the duration of hospital stay and the incidence of postoperative complications in the two groups. Quality of life as calculated by the Ostomy Adjustment Index score (OAI 23) was better in the early closure group (p=0.014). **Conclusion:** Early closure of a temporary loop ileostomy is feasible with the advantages of decreased stoma related morbidity, operative difficulties without increased morbidity and mortality when compared with conventional delayed ileostomy closure.

C28
Comparative study evaluating role of HIPEC with curative surgery vs standard of care in patients with colon cancers at high risk for peritoneal carcinomatosis.

Yogesh A Bang, Vinay Bhat, Pradeep R, Gurudu VenkatRao, AIG, Hyderabad

**Introduction:** Synchronous peritoneal carcinomatosis is identified in approximately 5%-10% of patients at primary surgery. Up to 20%-50% of patients undergoing curative resection for colorectal cancer can go on to develop disease recurrence limited to the peritoneal cavity. The presence of peritoneal disease in the context of CRC confers a dismal prognosis. PC for Colorectal cancer have been treated with wide range of options from palliative chemotherapy to second look surgery with cytoreductive surgery + heated intraperitoneal chemotherapy (HIPEC) or prophylactic HIPEC at the time of primary surgery. **Aims:** This study intended to compare HIPEC related complications, toxicity of HIPEC and assess peritoneal carcinomatosis development in patients undergoing HIPEC with curative surgery vs standard of care in high risk colon cancers. **Methods:** This is a prospective, case control pilot study. Patients with high risk colon cancers (T3 lesion or T4 lesion, obstructed growth, bleeding tumor, positive peritoneal cytology) will be divided into two groups. No HIPEC will undergo radical surgery followed by adjuvant chemotherapy. HIPEC group will undergo surgery with intraoperative adjuvant HIPEC followed by adjuvant chemotherapy. Patients will be assessed for post operative complications of HIPEC and recurrence. We intend to continue the same study as RCT once results of this study are analysed. **Results:** Total 19 patients were studied of which 10 patients in NO HIPEC group and 9 in HIPEC group. Median age (51 vs 54 years), preoperative parameters (site of cancer, preoperative haemoglobin, albumin, grade of tumor) were nearly similar in both groups. Postoperative day 3 albumin was significantly low in HIPEC group as compared to NO HIPEC (2.6 vs 2.1 p-0.005). Surgical site infection was seen in 33.3% of patients of HIPEC group as compared to 10% in NO HIPEC (p-0.141). 1 patient in HIPEC group had anastomosis leak which required re-exploration and lavage. No mortality was observed in present study. 2 patients in No HIPEC group developed recurrence at median follow-up of 15 months. No recurrence was noted in HIPEC group. **Discussion:** In High risk colorectal cancer patients, Adjuvant HIPEC possibly leads to a reduction in development of peritoneal carcinomatosis in patients undergoing curative resection. Adjuvant HIPEC after primary tumor resection is safe and well tolerated with no mortality. Grade 1 morbidity with additional HIPEC is more but it’s not statistically significant. Single HIPEC procedure under general anaesthesia is safe and potentially associated with less morbidity and less discomfort for the patient. It is less likely to interfere with adjuvant systemic treatment and has advantage of reducing peritoneal recurrence with improved survival. This procedure seems to offer a promising alternative to those who recommend an early second look surgery.

C29
Long Term Outcomes And Factors Affecting After Restorative Proctocolectomy And Ileal Pouch Anal Anastomosis For Ulcerative Colitis.

Nikhil Jayprakash Jilawar

**Aim:** We evaluated the risk factors for late complications after restorative proctocolectomy and ileal pouch anal anastomosis for Ulcerative colitis. **Methods:** Preoperative and postoperative clinical status and follow up data were obtained for 32 patients who underwent TPC with IPAA between 2008 and 2015. Late complications were defined as those developed after 1 month. We studied risk factors including gender, body mass index, smoking, family history, extent of involvement, extraintestinal manifestations, preoperative albumin. Univariate analysis was done using chi square test. **Result:** The median follow up duration was 4.8 years. Late complications were found in 13 cases (40.6%), including pouchitis (n-6), incisional hernia (n-3), bowel obstruction (n-2), pouch leakage (n-1), erectile dysfunction (n-1). Univariate analysis suggestive of pouchitis (P= 0.03) and preoperative albumin (P=0.007) significantly related to late complications. **Conclusion:** This study demonstrated that a low preoperative albumin level and pouchitis risk factors for late complications of TPC with IPAA. Preoperative nutritional support, especially albumin, could reduce late complications.
**C30**

**Assessment Of Severity And Pattern Of Low Anterior Resection Syndrome In Patients Undergoing Low Anterior Resection For Rectal Cancer In A Tertiary Care Setup Based On The Scoring System Questionnaire.**

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**Introduction:** The survival of patients with rectal cancer has improved with refinements in treatment modalities. Majority of patients with low rectal cancer undergo low anterior resection. A significant number of these patients develop bowel dysfunction postoperatively known as low anterior resection syndrome which affects quality of life. The magnitude of this problem is often under estimated. Most of the data available are from Western literature. The present study was done to assess the severity and pattern of Low Anterior Resection Syndrome (LARS) using a validated questionnaire, the LARS questionnaire in the Indian population. **Aims:** 1) To assess the severity and pattern of low anterior resection syndrome in patients undergoing low anterior resection for rectal cancer in a tertiary care set up based on the Low Anterior Resection Syndrome scoring system questionnaire. 2) To assess the relationship between risk factors with post operative bowel dysfunction after low anterior resection. 3) To assess the prevalence of sexual and bladder dysfunction after low anterior resection. **Methods:** A single centre prospective observational study was performed in 72 patients undergoing low anterior resection over 2 years to determine the severity and pattern of low anterior resection syndrome (LARS) based on the LARS scoring questionnaire. Patients were followed up 6 months after surgery. The severity and pattern of bowel dysfunction of low anterior resection syndrome in these patients were assessed based upon the questionnaire. Severity was classified as mild, moderate or severe based on the response scores on the questionnaire. Data regarding details of patient, pre operative treatment, details of surgery were collected from hospital data records. These parameters were correlated with the pattern and severity of bowel dysfunction post operatively. All the statistical analysis was carried out by SPSS version 11.0. **Results:** Overall 63.8% of patients reported to have some form of low anterior resection syndrome. 36.1% did not have LARS, 38.9% had minor LARS, 25% had symptoms of major LARS among 72 patients at six months postoperatively. 9.7% of patients not have any troublesome symptoms, 22.2% had incontinence, 34.7% had frequency and 29.2% had urgency as predominant symptom. 4.2% had combination of symptoms. Various risk factors as age, gender, pre operative therapy, open/laparoscopic surgery, anastomosis type, level of anastomosis, bowel mobilisation extent were compared with post operative bowel dysfunction. Only statistically significant association was found between the preoperative treatment and severity of LARS. (P= 0.031). 16.7% of patients experienced bladder dysfunction, 12.5% had some form of sexual dysfunction. A significant association between bladder and sexual dysfunction with LARS, was not detected in this study. **Conclusions:** LARS affects a significant percentage of patients post low anterior resection in Indian population. Most predominant symptoms are frequency and urgency. Perioperative treatment appears to be the only significant risk factor. The incidence of sexual and bladder abnormalities are less when compared to bowel dysfunction. A correlation between bowel dysfunction and urogenitary dysfunction was not detected in this study.

**C31**

**Laparoscopic Anterior Resection using Single Stapling Technique (SST) for Colorectal Anastomosis with Natural Orifice Specimen Extraction (NOSE)-Technique, Feasibility and Outcomes.**

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**Introduction:** Double and triple stapling techniques to close the rectal stump in laparoscopic anterior resection are fraught with technical drawbacks that could possibly be avoided with the use of the single stapling technique. However, little is known of its safety in laparoscopic surgery or outcomes when combined with natural orifice specimen extraction. **Aim:** To analyze the feasibility, operative and immediate postoperative outcomes of single stapled anastomosis and natural orifice specimen extraction with conventional techniques. To evaluate technical variations related to colon, mesentery and pelvic anatomy characteristics. **Methods:** consecutive series of 188 patients undergoing elective surgery for benign or malignant lesions between 10-40 cm from the anal verge, 5 cm or less in diameter on radiological examination, stage T1-T3, Nx, M0, with two different methods of rectal stump closure (purse-string vs. linear stapled closure) associated with single or double stapling, respectively, and per anus vs. conventional specimen extraction. Setting: China Medical University Hospital, Taiwan, a tertiary referral center, between from January 2012 to April 2015. Main outcome measures: feasibility, operative and immediate postoperative outcomes. **Results:** Single stapled resection (SST) with NOSE was feasible in 94% patients with 11% perioperative morbidity rate. The patients required statistically significantly less analgesia, had earlier return of bowel movements and shorter hospital stay while there was no statistically significant difference in the overall readmission rate, overall morbidity including anastomotic leakage. Of the 82 patients sustaining SST-NOSE-LAR in our series, 48 underwent extracorporeal anvil fixation while intracorporeal anvil fixation with a proximal colon purse
string suture was necessary in 34 patients. The difference in overall morbidity for SST-NOSE-LAR was not statistically significant compared to double stapling technique (DST-LAR) (9.8% vs. 12.2%). Conversely, the conversion rate of SST-NOSE-LAR to DST–LAR was 6.1%. Inability to retrieve bulky specimen transanally or difficult purse-string suturing in a deep narrow pelvis are possible reasons for failure. Limitations: single center, retrospective case-matched study. Conclusion: Anatomic variations (short colon and short mesentery) can be managed adequately with intracorporeal anvil head fixation. SST is feasible and as safe as conventional double stapling techniques although technically more demanding. The TEO platform can be useful when rectal stump is long. Technical alterations are required to deal with variable colonic and pelvic anatomy to accomplish the procedure.

C32

Introduction: Many guidelines have been published for the management and surveillance of patients with ulcerative colitis. Indications for surgery, both elective and emergency settings, are well defined. Despite this, there is reluctance among physicians to refer patients for surgery. Aim: To assess whether standard guidelines are being followed in medical management and surveillance of patients with Ulcerative Colitis, for timely referral and planning of surgical management. Methods: We maintain a database of patients undergoing surgery for Ulcerative Colitis in our department. Between March 2010 and May 2016, 126 patients underwent elective surgery for ulcerative colitis. Data was collected from patients’ previous OPD and inpatient records. Previous colonoscopy, biopsy reports and treatment plans were reviewed. Results: Intractability (73 pts-57.9%), and malignancy (18 pts-14.3%) were the leading indications for surgery. Thirty six (28%) patients came for surgical consultation on their own, without referral from their respective treating physicians. All these patients had pancolitis, with duration of disease of more than 5 years, with symptoms causing repeated hospital admissions, leading to poor quality of life. In 22 (17%) patients, steroids were being continued for more than one year to maintain remission. All 18 patients with malignancy, had disease of more than 7 years duration, but regular surveillance colonoscopies had been emphasised in only 4 patients. In 14, out of these 18 patients, malignancy was diagnosed because of worsening of symptoms like bleeding and pain, and not on surveillance colonoscopy. Conclusions: Our experience suggests that though guidelines for management and surveillance of ulcerative colitis are well established, their clinical practice is still not optimal.

C33

Introduction: Most patients who undergo anterior resection have a covering stoma, which is closed after checking the integrity of the anastomosis by performing a gastrograffin enema. Some patients can have a radiologically demonstrable leaks but are asymptomatic. The management of such patients and their functional outcome after stoma closure is poorly defined. Methods: We performed a case control study of patients involving patients with radiologically detected occult leaks undergoing stoma closure. This study group was compared with a matched control group of patients who did not have a leak. The functional outcomes were assessed using validated fecal incontinence scoring systems. Results: From March 2010 to March 2016, 496 patients underwent anterior resection in our department. Twelve patients out of these, had radiologically detected asymptomatic leaks, between 4 to 6 weeks post surgery. As compared to the 12 patients in the control group, these patients had delayed stoma closure, poorer short term functional results and more need for anti-diarrhoeal medicines. Conclusion: Reversal of diverting Stoma in presence of occult radiological leaks does not affect long term results of AR.

C34
To Evaluate The Accuracy Of Preoperative Contrast Enhanced MRI In Histopathological Staging Of Rectal Cancer. Kapil Dev Sharma, Amanjeet Singh Arora, Azhar Perwaiz, Adarsh Chaudhary, Medanta The Medicity, Gurugram

Introduction: Rectal cancers are associated with poor prognosis and high local recurrence. Staging is one of the most important aspect in the management of rectal cancer. Choosing the most appropriate imaging modality depends on being able to identify the key tumor features which are known to be associated with poor prognosis. We evaluate the accuracy of preoperative MRI in histopathological staging and also the response to neoadjuvant treatment of rectal cancers. Methods: Study included 88 biopsy-proven resectable rectal carcinoma patients. Out of 88 patients, 16 underwent upfront surgery, rest 72 patients received neoadjuvant therapy. Patients in neoadjuvant group underwent restaging MRI followed by surgery 6 to 8 weeks after completion of CTRT. The overall MRI tumor (T) and nodal (N) staging and restaging were calculated. The agreement between MRI examination and histopathological assessment was evaluated in patients underwent upfront surgery and agreement between post CTRT MRI and histopathological examination was evaluated in those underwent neoadjuvant CTRT by using kappa statistics. Results: The overall diagnostic
accuracy for preoperative MRI T staging in patients those underwent upfront surgery was 75%. Kappa statistics revealed moderate agreement between preoperative MRI and pathology T staging (weighted kappa=0.543, 95% confidence interval=0.142-0.903, p value=0.046). The sensitivity of MRI in relation to N staging was 100% for NO stage. In neoadjuvant CRTRT group, comparison between restaging MRI and pathological T staging showed that the overall accuracy for T stage was 54.2%. Kappa statistics revealed fair agreement between restaging MRI and pathology T stage (weighted kappa=0.263, with 95% confidence interval=0.091-0.432 and p value <0.0001). Compared with the pathologic T staging, 28 (38.9%) of 72 patients were overstaged and 5 (6.9%) of 72 patients were understaged in restaging MRI T staging. The comparison between restaging MRI and pathological N stage showed that overall accuracy for N stage was 70.8%. Kappa statistics revealed moderate agreement between restaging MRI and pathology N stage (weighted kappa=0.664, 95% confidence interval=0.405-0.706 and p value <0.0001). Compared with the pathologic N stage, 12 (19.4%) of 72 patients were overstaged and 9 (12.5%) of 72 patients were understaged in restaging MRI N stage. Conclusion: Our results show that preoperative MRI is highly accurate for prediction of transmural invasion and there is moderate agreement between preoperative MRI and histopathological T staging. Preoperative MRI is highly sensitive for prediction of lymph node involvement. However, post chemoradiotherapy the accuracy of restaging MRI for prediction of pathologic T and N staging of rectal tumor is less, overstaging occurs more frequently than understaging. The agreement between restaging MRI and pathological staging, particularly in T stage is fair in comparison to those without neoadjuvant therapy which showed moderate agreement.

C35
End to End (Double stapled) Versus End to Side (Triple Stapled) Colorectal Anastomosis Following Anterior Resection for Rectal Cancer. Venkat Rami Reddy, Sri Venkateswara Institute of Medical Sciences, Tirupati

Introduction: Sphincter saving procedures for mid and lower rectal cancers are made possible with the use of Double stapling (DS) technique. Most important complication is anastomotic leak, which depends on the distance from anal verge and type of anastomosis. Our aim is to compare outcomes between End-to-End (DS) and End-to-Side (triple stapled) anastomosis following Anterior resection (AR). Methods: All patients who underwent AR/LAR for rectal cancer during the period July 2013 to December 2015 were included. Patients underwent either End-to-End (DS) or End-to-Side (Triple stapled) anastomosis. Intraoperative factors, and early postoperative outcomes were compared between two groups. P Value<0.05 was considered significant. Results: 73 patients were included in the study. 32 underwent End-to-End and 41 End-to-Side anastomosis. All patients with LAR had covering ileostomy. Demographic characteristics, nutritional status, BMI, preoperative chemoradiation, operative time, level of anastomosis and incidence of ileostomy were comparable. Doughnuts integrity was maintained better in End-to-Side group (87.8% vs. 65.6%; p=0.0438). Air leak test was positive in 7 (21.87%) in End-to-End group and 2 (4.87%) in End-to-Side group (p=0.0335). Postop leak was seen in 2 (6.25%) in End-to-End group and 2 (4.87%) in End-to-Side group (p=1.00). All leak patients underwent reexploration and loop ileostomy. One patient in End-End group expired. Conclusion: End-to-Side (triple stapled) anastomosis is easier to perform with better doughnut integrity with similar post operative leak rates.

C36
Laparoscopic abdominoperineal resection for carcinoma of anorectum– short term clinical and oncological outcome at a tertiary referral centre. Kshitij Sisodia, GB Pant Hospital New Delhi

Introduction: Laparoscopic abdominoperineal resection (LAPR) operation for anorectal cancer may be an alternative to open APR. Aims: To evaluate short term outcome of patient with LAPR for carcinoma the anorectum. Methods: This is a retrospective study was conducted on 19 patients with carcinoma of the anorectum who were managed with LAPR by single surgical team from 2011 to 2015. Clinical characteristics, operative details and post operative outcomes were analyzed. Results: Out of nineteen patients 36% were males. Median age was 38 years (26-67 years). Median distance of the tumor from anal verge was 10 mm (range 0 to 55 mm). Median length of tumour was 50 mm (30 mm-90m). Laparoscopic APR was successful in all patients. Median blood loss and duration of surgery were 200 ml (50 to 500 ml) and300 minutes (210 to 570 minutes) respectively. Median post-operative hospital stay was 8 days (range: 4-15 days). Perineal wound infection developed in 6 (31.5%) patients all were managed conservatively. Prolonged insertion of urinary catheter was required in 2 (10.5%) patients. All resections were R0 and median lymph node isolatedwere 12 (range 6-43) and median lymph node positive were 2 (range 0-23). Follow up period was 9 months during which no patients developed recurrence. Conclusions: Laproscopic abdominoperineal resection is a safe and feasible alternative to open abdominoperineal resection with acceptable short term outcome for patients with carcinoma anorectum.

C37
Combined Relaparoscopy and transanalendoluminal Repair (Hybrid approach) in the management of early postoperative colorectal anastomotic leaks– Technique and Outcomes. Saurabh Bansal, Tao-Wei Kee, Takashi Kato,
Introduction: Colorectal anastomotic leak are associated with high morbidity, persistent stomas, high cost to health care system and significant mortality (6-22%) after leaks. There is no clear general consensus for management of leaks and mostly depends upon surgeons experience or institutional protocols. **Aim:** To evaluate the feasibility of the combined laparoscopic (Relaparoscopy, peritoneal lavage and placements of drain after primary laparoscopic low anterior resection) and transanal endoluminal repair of leak site (Hybrid approach) for colorectal anastomotic leaks in the acute settings for Grade B and C leaks. Anastomotic leaks were defined as per the recent definition provided by International Study Group of Rectal Cancer (ISREC) in 2010. Secondary outcomes measured were successful control of leak and morbidity associated with the procedure. Last, we compared the outcomes of patients undergoing this combined approach in patients with early (<5 days) detection of leaks vs. late detection (≥5 days).  

**Methods:** Sixteen patients with Grade B (n=5) and Grade C (n=11) leaks, hemodynamically stable, with colorectal anastomotic dehiscence <50% of the circumference after laparoscopic anterior resection or low/ultralow anterior resection were included in the study. All patients underwent described Hybrid approach. Setting: China Medical University Hospital, Taiwan, a tertiary centre, from June 2012 to June 2014.  

**Results:** The median days to detection of leak and operative intervention was 4.5 days. The combined procedure was feasible in 13 out of 16 patients total length of stay including index surgery was 12 days. Control of anastomotic leak was achieved in 14 patients. Stoma closure was achieved in 14 out of 16 patients after median of 158 days. No anastomotic site sinus or fistula or recurrence was noted in one year follow up period. Univariate analysis showed that patients with stoma (p=0.041) and presence of low anastomosis (p=0.041) significantly affected the detection of leak while ASA (II vs. III), early vs. advanced stage and low vs. high vessel ligation did not affect the interval before detection of leak, duration of the second intervention or outcomes. Limitations: Single centre, prospective study. **Conclusion:** Combined re-laparoscopy and transanal endoluminal repair in the management of early postoperative colorectal anastomotic leaks is feasible and safe. It should reduce early and late post-operative morbidity associated with anastomotic leaks. However, early detection and early re-intervention remain the key issues for success.

**C39**  
**Long-term functional and oncological outcomes following intersphincteric resection for low rectal cancers.** Vinod Kumar Mudgal, Ramakrishnan Ayloor Seshadri, Surendran Veeraiah, Cancer Institute (WIA), Chennai

**Aims:** Surgery for low rectal cancer often involves a permanent stoma. Intersphincteric resection (ISR) with coloanal anastomosis is a valuable sphincter sparing surgical procedure that avoids the need for permanent stoma in patients with low rectal cancer. The aim of this study was to analyze the long-term functional and oncological outcomes following ISR.  

**Methods:** This was a retrospective analysis of patients with low rectal cancer who underwent ISR with colo-anal anastomosis in our institution between 2007 and 2015. All patients had a diversion stoma. Bowel function outcomes were assessed prospectively using Wexner incontinence score, low anterior resection syndrome score (LARS) and the Cancer...
We were not able to demonstrate a significant difference in 46.2% in the Lap and Open groups respectively (p=0.38). The 3-year, 5-year and 10-year overall disease-free survival in the Lap and Open groups was 68.7% vs 54.2%, 61.3% vs 47.9% and 48.8% vs 41% respectively (p=0.16). The median follow-up in these patients was 48 months (range 18 to 85 months). One patient had recurrence in the paraaortic nodes. No patient had local recurrence. Bowel function was assessed in 18 patients who had a minimum stoma free period of 1 year. After a median of 43 months following stoma closure, the median weexner score was 3.56 (Range 0-19), median LARS score was 4.78 (Range 0-33) and the mean Cancer Institute quality of life (QoL) score was 151.56 (SD-15.741). The QoL was average to very high with an overall acceptable quality of life. Conclusion: In this study, ISR was associated with acceptable long-term functional and oncological outcomes. It can be considered as a safe alternative to a permanent stoma in selected patients with low rectal cancer.

C40
Laparoscopic versus open surgery after neoadjuvant chemoradiation in rectal cancer: long-term outcomes of a matched case-control study. Abhijit Das, Ramakrishnan Ayloor Seshadri, Rajaraman Swaminathan, Ayyappan Srinivasan, Madras Cancer Care Foundation, Cancer Institute (WIA), Chennai

Aims: To compare the long-term outcomes of laparoscopic and open surgery for low and middle rectal cancer after neoadjuvant chemoradiation. Methods: A consecutive series of 72 patients who underwent laparoscopic surgery for rectal cancer after neoadjuvant chemoradiation between 2004 and 2010 (Lap group) were matched with 72 patients who underwent open surgery for rectal cancer in the same period (Open group) for gender, type of surgery and American Society of Anaesthesiologists (ASA) class. The survival and recurrence patterns were compared between the two groups. Results: The 3-year, 5-year and 10-year disease-free survival in the Lap and Open groups was 68.7% vs 54.2%, 61.3% vs 47.9% and 48.8% vs 41% respectively (p=0.16). The 3-year, 5-year and 10-year overall survival was 81.5% vs 69.7%, 66.9% vs 60.2% and 49% vs 46.2% in the Lap and Open groups respectively (p=0.38). We were not able to demonstrate a significant difference in stage wise disease-free survival between the Lap and Open groups. After a median follow-up of 69.5 months (range 0-138 months), 20 patients (27.7%) in the Lap group and 33 patients (45.8%) in the Open group had a recurrence. Isolated local recurrence rate was 5.5% and 9.7% in the Lap and Open groups respectively. These differences were not significant. Conclusion: Laparoscopic surgery after neoadjuvant chemoradiation for low and middle third rectal cancers was associated with similar long-term oncological outcomes when compared to open surgery.

C41
Selective Pelvic Lymph Node dissection in mid and lower rectal malignancy. Nikhil Gupta, Syed Asif, Shivendra Singh, Rajiv Gandhi Cancer Institute, Delhi

Introduction: The incidence of lateral pelvic lymph node metastasis in middle and low rectal cancer is around 15%. The significance of lateral pelvic lymph node dissection (LPND) in middle and low rectal cancer remains unclear. Most centers follow the policy of selective LPND. We present our initial experience of selective PLND in rectal cancer. Methods: From August 2013 to July 2016, 13 patients with locally advanced rectal malignancy underwent pelvic lymph node dissection. 18F FDG PET scan or pelvic MRI done before neoadjuvant treatment was used to identify patients with significant pelvic lymph nodes. LPND dissection was performed in all these patients irrespective of the response to neoadjuvant treatment. Results: Out of 155 patients with rectal malignancy who underwent surgery, LPND was performed in 13 patients. All patients had adenocarcinoma except one who had melanoma. MRI detected PLN in 5 patients and PET scan in 8 patients. Mean prechemotherapy CEA level was 10.42 ng/mL. 2 patients received neoadjuvant chemotherapy and 10 patients received neoadjuvant chemoradiotherapy. 1 patient underwent upfront surgery. Mean duration of surgery was 222.3 minutes (120-310 minutes) and mean blood loss was 228.84 mL (25-1200). Only 1 patient required blood transfusion. Bilateral PLND was performed in 6 patients, left in 5 patients and right sided in 2 patients. 2 patients developed urinary retention which was managed conservatively. Main complication was increased drain output which eventually settled conservatively. Average duration of drain placement was 10.3 days and mean hospital stay was 8.1 days (6-11 days). There were no mortalities. Three out of 13 patients had histopathological evidence of disease in LPNs. Conclusion: In mid/low rectal cancer with clinically metastatic LPNs, LPND dissection can be safely performed without significant morbidity or increase in operating time.

C42
Extralevator abdominoperineal Excision (ELAPE) for locally advanced carcinoma rectum: Single center
experience. Nikhil Gupta, Ketul Shah, Shivendra Singh, Rajiv Gandhi Cancer Institute, Delhi

Introduction: Extralevator abdominoperineal excision is associated with superior surgical outcomes at the expense of increased perineal complications for locally advanced carcinoma rectum. Methods: All patients with confirmed diagnosis of carcinoma rectum underwent MRI pelvis. In patients where MRI was suggestive of either anal sphincter involvement, pelvic floor muscle involvement or presence of fistula in ano were considered for ELAPE. All the patients received neoadjuvant concurrent chemoradiation. Results: From January 2014 to July 2016, 16 consecutive patients who underwent extralevator abdominoperineal resection were evaluated. There were 14 males and 12 females. The mean age of the patients was 51.3 years (25 years – 69 years). 6 patients presented with fistula in ano, 5 patients with bleeding per rectum, 3 with perianal pain, 1 patient had fecal incontinence which aggravated after radiation and had to go diverting loop sigmoid colostomy and 1 patient presented with constipation and alteration in bowel habits. Mean CEA was 15.16 (1.53-84.3). 13 cases were operated by conventional open method, 2 cases with robot and 1 case laparoscopically. All patients underwent pelvic floor reconstruction-- myocutaneous flaps in 4 cases and biological mesh in 12 cases. Mean duration of surgery was 293.75 minutes (180-540) and mean blood loss was 329.37 mL (50-1200 mL). 3 patients required blood transfusion. 5 patients (31.25%) developed perineal wound infection which was managed with daily dressings. Of these, 2 patients had urinary retention also. Average duration of perineal romodrain was 10.37 days (6-15 days). R0 resection could be achieved in 12 out of 16 patients (75%). Conclusion: ELAPE can be done in locally advanced lower rectal cancer with acceptable perineal wound complications.


Introduction: Defunctioning ileostomy, practiced routinely for ultra low anterior resections (ULAR) has its own complications which may require reoperations and decrease the quality of life. With experience, the leak rate and complications of stapled anastomosis at the pelvic floor after ultralow anterior resections are less. Hence the role for routine defunctioning ileostomy is becoming questionable. We present our initial experience of ultralow anterior resections without routine ileostomy. Methods: It is a prospective observational study of all patients undergoing ultralow anterior resections from January 2013 till June 2016. 33 patients with low rectal tumors underwent ultralow anterior resection. From January 2015, routine ileostomy with ultra low anterior resections was stopped. The leak rates and complications were analyzed, comparing two arms. Univariate and multivariate analysis were done. Results: Of 33 patients who underwent ULAR during the study period, 15 patients had ileostomy and 18 patients did not have defunctioning ileostomy. All 11 consequent patients after January 2015 did not undergo ileostomy. Only one patient without ileostomy developed anastomotic leak, requiring peritoneal lavage and diversion ileostomy on post operative day 3. One among the 15 patients with routine ileostomy had reoperation in the same admission for ileostomy obstruction. Though patients with ileostomy had early return of bowel function, there was no difference in the duration of hospitalization. Operation time and blood loss were low in the arm without ileostomy. Conclusion: Our initial experience of performing ultralow anterior resections without routine diversion ileostomy has been promising. Early diagnosis of leak and peritoneal lavage with diverting ileostomy in case of a leak is a safe option instead of routine diverting ileostomies.

C44 Laparoscopic Anterior Resection- is it time to avoid a diverting stoma? Sathchith S, Arunkumar ML, Noushif M, Mohamed Abdullatheef Thirunavayakalathil, Vishnu Sobha Ravidas, Emil Joseph Eliston, Sree Gokulam Medical College and Research Foundation and GG Hospitals, Thiruvananthapuram

Introduction: The social stigma and morbidity of an abdominal stoma result in delaying timely surgery in patients with recto-sigmoid cancers. With advances in minimal access surgical techniques and stapled anastomosis, the need for a routine diverting stoma has been questioned. We report our experience of avoiding a routine diverting stoma following Laparoscopic Anterior Resection (LAR) for recto-sigmoid lesions. Methods: Retrospective review of prospectively maintained database regarding patients who underwent elective LAR between 1st March 2014 and 31st May 2016 was done. All patients had low residue liquid diet and laxatives for three preoperative days as per unit protocol, without a formal mechanical bowel preparation. Patient demographics, tumour distance from anal verge, ICU and hospital stay, time to return of bowel function, pathological stage, number of lymph nodes harvested, distance of lesion from the distal resection margin and early complications if any were analyzed. The need for stoma was decided if any one among the “three point criteria” - adequate colonic end vascularity, tension free anastomosis or a negative air leak test - were not achieved. Results: Twenty seven patients (mean age 60.81 years (range-36-87); M:F-13:14) underwent LAR. 21 (77.78%) patients were operated for malignancy and 6 (22.22%) for
benign causes. The mean distance of the lesion from anal verge was 9.67 cm (range 4-30). The mean ICU and hospital stay was 3.11 days (range 1-15) and 5.52 days (range 3-20) respectively. The mean time for return of bowel function was 4.18 days (range 2-14). Tumours were histopathologically Stage I (n=9; 42.86%), II (n=7; 33.33%), III (n=3; 14.29%), IV (n=2; 9.52%) with a mean lymph node yield of 9.48 (range 0-22). The mean distance of the lesion from the distal margin was 2.26 cm (range 0.2-6.5). None of the patients required conversion to open surgery or intra operative blood transfusion. None of the patients had anastomotic leak or margin positive resection. One patient with stage 2A disease and a benign polyp at distal resection margin had an anastomotic site recurrence at 6 months follow-up while on adjuvant chemoradiotherapy and underwent open re-resection. One patient had anastomotic stricture that responded to serial dilatation. Two patients had transient incontinence to flatus and liquid stools in the early postoperative period. One patient had retrograde ejaculation. One patient had adhesive ileal obstruction in the early post-operative period requiring re-laparoscopy on day 12 and underwent a diverting ileostomy. None of the patients had a diverting stoma during the primary surgery as the “3 point criteria” for a safe anastomosis was ensured in all cases.

**Conclusion:** A routine diverting stoma in patients undergoing elective LAR may be avoided if adequate vascularity of the anastomotic ends, tension free anastomosis and a negative air leak test are attained. This will avoid stoma related morbidities and undue delay in providing adjuvant therapy.

**C45**

Laparoscopic completion appendectomy for stump appendicitis: Experience from a tertiary care centre in south India. Bhushan Chittawadagi, R Parthasarathi, Samrat Jankar, Sandeep Sabnis, S Saravana Kumar, Dharmesh Dhanani, C Palanivelu, GEM Hospital And Research Centre, Coimbatore

**Introduction:** With increasing use of laparoscopic techniques, stump appendicitis may be more frequently observed. Laparoscopic appendectomy has the potential to result in incomplete removal of the appendix owing to misidentification of the appendico-caecal junction during appendectomy. A stump left too long has been suggested as the key to the occurrence of this complication. This is relatively rare entity, with actual incidence difficult to estimate, most of case under reported. We present our experience, comprehensive review of prevention, diagnosis & management of stump appendicitis. **Methods:** From April 2012 to March 2016, we found 12 cases of stump appendicitis treated at our hospital, from a prospectively maintained electronic database. **Results:** Patient presented 1 month to 4 years after initial appendectomy. Initial appendectomy was performed laparoscopically in 11 patients and one patient undergone open procedure. Two patient with stump appendicitis diagnosed on CT scan suggestive very small residual stump treated conservatively with iv antibiotics, improved well without any consequences. Other 10 patient undergone laparoscopic completion appendectomy. Intraoperative finding during completion appendectomy includes inflamed stump in 5 cases, stump perforation with collection present seen in 4 case, cecal perforation seen in 1 case. All underwent laparoscopic completion appendectomy. One patient required limited resection with ileocolic anastomosis. Mean length of stump 1.8+/− 1.2 cm (0.5-5 cm). Post-operative period, two patient had paralytic ileus treated conservatively. Overall, mean length of hospital stay 3.6 days (1-7 days). **Conclusion:** Awareness of the possibility of stump appendicitis combined with a high index of suspicion can help to make an early diagnosis and to prevent possible complications associated it. Most patients require completion surgery. Meticulous dissection of entire appendix during index surgery helps prevent occurrence of stump appendicitis. Laparoscopic completion appendectomy is safe and feasible if expertise available.
L1
A rare and unexpected complication of ADPKD. Senthil Muthuraman, Asian Institute of Gastroenterology, Hyderabad.

A 67 year old lady who was a known case of ADPKD for past 16 years being evaluated for combined liver-kidney transplantation. CECT abdomen showed multiple cysts in liver and kidney. Intrahepatic IVC was compressed with patent hepatic vein draining into patent supra hepatic IVC. Intra operatively there was dense adhesion of liver to stomach and supra IVC is fibrosed up to right atrium. Donor supra hepatic portion of IVC was anastomosed with right atrium through abdominal approach. Patient was discharged POD 11. Combined liver-kidney transplantation may be the only surgical option for patients with ADPKD with decompensated liver and chronic kidney disease. Extrinsic mechanical stress on the IVC seemed to induce thrombosis within the IVC. Thrombosis of IVC determines the extension of the surgical resection and with reconstruction is required to supply a patent venous drainage. A high index of suspicious should be there for patients undergoing liver transplant for BCS, ADPKD with CT evidence of narrowed/thrombosed IVC. An extended resection of cava up to the right atrium and advanced vascular reconstruction techniques with grafts or prostheses may be required.

L2
Laparoscopy in hemodynamically stable patients of blunt trauma abdomen. Lohith Umapathi, Yashoda hospital, Hyderabad

Introduction: This study evaluated the use of laparoscopy in hemodynamically stable patients of blunt abdominal trauma with moderate hemoperitoneum. Methods: We retrospectively reviewed the medical records of hemodynamically stable blunt abdominal trauma with moderate hemoperitoneum patients. 1) Patients admitted from April 1, 2012, to March 31, 2014 (prior to the adoption of laparoscopy for patients with blunt abdominal trauma) were categorized as group A. Patients admitted from April 1, 2014, to March 31, 2016, when laparoscopy was included in the algorithm for the management of blunt abdominal trauma, were categorized as group B. 2) Computed tomography (CT) scan was used in grading of solid organ trauma, were categorized as group B. 3) Grade 3 and above liver and splenic injury patients with moderate hemoperitoneum were included. Results: There were 25 patients in group A and 15 patients in group B. There were no significant differences in demographic characteristics, injury severity score, and injuries requiring surgical intervention between the groups. Patients in group B had a early start of enteral nutrition (1 day vs 3 days, P <.001), shorter hospital stay (3 days vs 7 days, P <.001) and shorter ICU stay (0 [0, 1] days vs 3 [2, 6] days, P <.001). In group A, 2 of 25 patients (8%) underwent a non-therapeutic laparotomy. In contrast none of 15 patients in group B underwent a non-therapeutic laparotomy. Complications like ileus and bile leak were noted in group A, but not in group B. Conclusions: Laparoscopy is safe and feasible option in hemodynamically stable patients of blunt abdominal trauma with moderate hemoperitoneum. It helps as both diagnostic and therapeutic tool. Hence significantly reduces hospital stay and ICU stay.

L3
Open Right Hepatectomy for Hepatoblastoma. Shaifali Arvind Goel, Hitesh Chavda, Sterling Hospital, Ahmedabad

Hepatoblastoma (HBL) is the most common primary liver tumor in children, and is usually diagnosed during the first 3 years of life. Over the last three decades, the annual incidence of HBL in children has gradually increased. Serum alpha-fetoprotein (AFP) is the most important clinical marker for HBL, and remains the key clinical marker of malignant change. Helical CT findings of hypervascular lesions in the liver with delayed contrast excretion are highly suggestive of a malignant liver tumor. These tumors are staged according to preoperative evaluation of the tumor extent (PRETEXT) staging system. The COG and JPLT studies have approved primary resection for children with resectable tumors, especially PRETEXT I or II cases. The Case: 10 month old female presented with history of low grade fever along with abdominal distension since 10-12 days. HCG was normal and AFP 29.05 ng/mL. Rest of the blood reports such as LFT, CBC, Viral markers were found to be negative. CT scan was suggestive of Primary malignant well defined hypodense lesion measuring 41X42X42 mm with significant contrast enhancement in arterial phase in segment V/VIII. Operation: After obtaining anaesthetic fitness, she underwent open Right Hepatectomy and cholecystectomy. Reverse ‘J’ shaped incision was kept in right upper abdomen. After obtaining access to peritoneal cavity, right coronary and falciform ligaments were taken down. Right lobe of liver was lifted off the retroperitoneum and IVC, right hepatic vein was dissected and looped. Gall bladder was taken down and cystic duct was cannulated for future bile leak tests. Portal structures such as right hepatic artery, right portal vein and hepatic duct were dissected and looped at hilum. These structures were clamped to...
mark parenchymal transaction line. Parenchyma was transected using CUSA, hemoclips and bipolar cautery. Portal pedicle was transected intraparenchymally. Post operatively, she was managed in ward. Her recovery was uneventful and she was discharge on 5th post op day. Follow up after 1 year shows no recurrence and child is gaining weight satisfactorily.

**L4**

Laparoscopic Percystectomy For Hydatid Cyst Of Segment III Of Liver Communicating With Bile Duct. Shaifali Arvind Goel, Hitesh Chavda, Sterling Hospital, Ahmedabad

Cystic echinococcosis (CE) is a widely endemic helminthic disease caused by infection with metacestodes (larval stage) of the Echinococcus granulosus tapeworm. Upon infection with CE, cyst formation mainly occurs in the liver (70%). Diagnosis involves serum serologic testing for antibodies against hydatid antigens, but preferably with imaging by ultrasound or CT/MRI. The laparoscopic approach is safe with acceptable mortality and morbidity for both conservative and radical resections in selected patients. Clinical outcomes are comparable to open surgery, albeit in a selected group of patients. The Case: 36 year old female presented with dry cough and low grade fever with epigastric pain since 1 month. She underwent USG and multiphasic CECT scan which was suggestive of 4.2X3.9X4.8 cm size cystic mass in segment III of liver. The hydatid serology was positive and LFT were normal. Operative technique: After obtaining informed consent and anaesthetic fitness, she underwent Laparoscopic Percystectomy for segment III hydatid. Patient was placed supine, in leg apart position. Patient was secured to the table and all the pressure points were adequately padded. Ports were placed (10 mm supraumbilical camera port 2 cm left of midline, 10 mm right hand working port in left upper quadrant of patient and another 5 mm left hand working port in right upper quadrant of patient). All the handling was very gentle so as to avoid any rupture of lesion. Harmonic was used to dissect in between liver parenchyma and outer pericyst layer. Intraoperatively, the cyst was found to be communicating with a bile duct, the duct with its communication was dissected all around and it was clipped. Hydatid cyst and its content were removed in endobag without any spillage and drain was kept near the cyst cavity. She was given medical therapy for 3 months post operatively. After 2 years of follow up she has reported no recurrence so far.

**L5**

Right Hepatectomy with caudate lobectomy for hilar cholangiocarcinoma. Hitesh Jayvant Chavda, Sterling Hospitals, Ahmedabad

Introduction: Hilar cholangiocarcinoma is an aggressive malignancy and needs aggressive surgical treatment. The radical resection with caudate resection and lymphadenectomy is needed to achieve a long-term survival. The Case: A 30 yr old male patient had complains of weight loss, anorexia itching and upper abdominal discomfort for three weeks. His Lab reports showed mild anaemia (Hb- 9g/dl), and slightly raised serum bilirubin (2.6 mg/dl) and alkaline phosphatase. His CA 19-9 was 209 U/ml. Rest of his LFTs and his HBsAg and Anti HCV Ab were negative. His CT scan and MRI showed well defined irregular heterogeneously enhancing lesion involving hilum and left hepatic duct with proximal dilation on both the lobes. After diagnostic laparoscopy, a J shape incision was kept, the gall bladder was taken down and cystic duct was cannulated for future bile leak tests. The right coronary and falciform ligaments were taken down. Right lobe of liver was lifted off the retroperitoneum and IVC, right hepatic vein was dissected and looped. Portal structures such as right hepatic artery and right portal vein were dissected and looped at hilum. The bile duct was divided at the lower end with negative frozen section biopsy. The regional radical lymphadenectomy was completed. Parenchyma was transected using CUSA, hemoclips and bipolar cautery. Portal pedicle was transected intraparenchymally. Right hepatectomy with caudate lobectomy was performed. The left duct was divided and was negative for malignancy on frozen section biopsy. A roux en Y Hepaticojejunostomy with left hepatic duct was performed. His post operative recovery was uneventful and he was discharged on 8th post operative day. The final histology revealed Hilar cholangiocarcinoma with negative regional nodes.

**L6**

Laparoscopic excision of biliary cystadenoma of liver. Hitesh Jayvant Chavda, Sterling Hospitals, Ahmedabad

Introduction: Biliary cystic tumors are rare tumors encountered by hepatobiliary surgeons and they are often misdiagnosed as simple cyst or hydatid cyst preoperatively. The origin of these lesions is postulated to be proliferation of ectopic embryonic tissues that otherwise aid in development of the adult gallbladder. Patients are either asymptomatic or they present with pain abdomen and jaundice. They have high recurrence rate after incomplete resection and carry inherent risk of malignant transformation to cystadenocarcinoma. The Case: A 37 years female presented with epigastric pain and on investigation s found to have a 4.1X3.8X4.6 cm well defined complex cystic thick walled lesion in her segment IV of liver. Her LFTs, tumour markers and her viral markers were negative. She underwent laparoscopic excision of the cyst. Four ports were kept. 10 mm supraumbilical post was used as camera port. Right upper quadrant 10 mm port was used as right working port and left side upper quadrant 5 mm port used as left working port. The cyst was dissected
off the liver parenchyma and complete resection was done. The biliary communication was sutured with 4-0 PDS. A small J-P Drain was kept. She had uneventful recovery and her final histology revealed biliary cystadenoma with mesenchymal stroma.

L7
Radical surgery for hydatid cyst with cysto-biliary communication- Outcome analysis. Senthil Kumaran Govindaraj, John Grison, Benet Duraisamy, Prabhaharan Raju, Amudhan Anbazhagan, Anand L, Kannan D, Madras Medical College, Chennai

Introduction: Communication to the bile duct is the most common complication of hepatic echinococcosis (Hydatid Cyst). Optimal treatment for intra-biliary rupture of hydatid is not well described. Different treatment modalities have been employed with variable success rates. Various techniques have been described for management of cysto-biliary communication. In this study we retrospectively reviewed data of patients who underwent radical and conservative surgery in our department over a period of three years. Methods: Medical records of twenty-two patients who underwent surgical management of Hydatid cyst of liver at the Institute of Surgical gastroenterology, Madras Medical College between January 2013 and January 2016 were analysed retrospectively. Demographic and clinical data were recorded. Liver function test was recorded for all patients. Both radical as well as conservative procedures were performed. Results: There were 8 men and 14 women in the study group with a mean of 45 years at presentation. Nine patients had pre-op evidence of cysto-biliary communication. Four patients were found to have bile staining of cyst fluid at surgery. Ten patients underwent conservative surgery and twelve others underwent radical procedures. Cysto-pericystectomy was performed in five patients. Seven patients underwent classical anatomical right (n=3) and left hepatectomy (n=4). CBD exploration was performed in five patients in the radical surgery group. In the conservative surgery, partial pericystectomy (n=6) was the commonest. Post-operative bile leak was identified in four patients in the conservative surgery group and in none in the radical surgery group. There was no mortality in both the groups. Conclusion: In our experience, when a cysto-biliary communication was present, a radical procedure was associated with less number of postoperative biliary fistula and morbidity.

L8
Management Of Hepatolithiasis In A Tertiary Care Center In South India- Retrospective Study. Abdul Rehman, Madras Medical College, Chennai

Aims: Hepatolithiasis is rare in this part of the world. We are presenting 19 cases of hepatolithiasis managed in our center. Methods: This is a study in hepatolithiasis between August 2011 to August 2015. The age range was between 24 to 70 years. The study includes 19 patients (M6:F13). Out of them, 17 patients underwent surgery. Hepatolithiasis was done in 9 patients. Right hepatectomy (1), left hepatectomy (1), left lateral segmentectomy (5), left lateral segmentectomy with segment 6, 7 resection (1), left lateral segmentectomy with resection of segment 6 choledochal abscess (1). All these patients had access to the bile duct through access loop to the first part of duodenum (5) or choledocoduodenostomy (3). Others had cholecystectomy and choledocoduodenostomy (10), cholecystectomy and hepaticojejunostomy (7). PTBD (2).

Results: One patient who underwent right hepatectomy came back after 4 years with IVC thrombosis and recurrent stones in left duct due to stricture, was managed with anticoagulants and left hepaticojejunostomy. One patient had recurrent stone removal through choledocoduodenostomy 1 year after the primary surgery. Conclusion: Hepatolithiasis is rare in South India. Surgical management depends on liver parenchymal status, cholangitis, diameter of CBD, biliary stricture and distribution of stones. The access to the biliary system was made either by access loop to the first part of duodenum or choledocoduodenostomy.

L9
Ante situm hepatic vein and IVC reconstruction with in situ cold perfusion of liver for chronic Budd-chiari syndrome. Chinthakindi Madhusudhan, Sepuri Suresh Kumar, Koyyoda Prashanth, Tripuraneni Venkata Aditya Chowdary, TR Ravimohan, Busineni Mokshaprasuna, Ramalingam Pratap Reddy, Osmania General Hospital, Hyderabad

Introduction: Membranous Obstruction of the Vena Cava (MOVC) is a rare condition characterized by progressive stenosis of the retro hepatic inferior vena cava (IVC) which can result in hepatic vein outflow obstruction and chronic Budd-Chiari Syndrome (BCS). The patient was a 24-year-old male with MOVC (Intrahepatic IVC and hepatic veins ostia were tightly stenotic). IVC stenting was attempted but failed so IVC and Hepatic veins reconstruction was done with hepatic ante situm technique combined with hypothermic in situ perfusion of the liver. We present here a video on a new technique of IVC and Hepatic vein reconstruction for BCS. The Case: 24 Yrs. male patient presented with dilated and enlarged veins in both lower limbs and abdominal wall since childhood. He was also complains of recurrent episodes of bleeding from engorged veins. History of easy fatigability and weakness present. Moderate size splenomegaly was observed. UGI Endoscopy shows Grade III oesophageal varices. USG Doppler shows Stenosis of intra hepatic IVC and Hepatic
veins with altered liver echotexture, splenomegaly and dilated collaterals. Triphasic CT Abdomen reveals Atresia of intrahepatic IVC and Hepatic veins ostia with multiple and hugely dilated collaterals along anterior Abdominal wall and peri hepatic area. IVC gram shows tight obstruction of intra hepatic IVC with huge collaterals communicating with ayzygous veins. Guide wire could not be negotiated beyond IVC obstruction. First extracorporeal veno-venous by pass between the right femoral and right internal jugular vein was established. Abdomen was opened through the inverted T incision. Full mobilization of the liver with transection of the supra hepatic vena cava after total vascular exclusion, followed by rotation of the liver was done so that the vena cava and hepatic veins are anterior and accessible. Then perfusion cannula was inserted into the portal vein and hypothermic in situ perfusion of the liver was done with cold HTK Solution. Hypothermic perfusion allows the liver to be maintained without blood flow for more than one hour without significant parenchymal damage. The stenosed portion of IVC and Hepatic veins ostia were excised. IVC and Hepatic veins were reconstructed with Dacron Y graft. Results: Total duration of surgery was 10 hours. Total cold ischaemia time was 4 hours. Patient received 6 units packed cell RBC. Patient received anti-coagulation. No operative mortality. Postoperative CT angiogram showed patent graft and well perfused liver. Doppler USG was normal after one and half year follow up. Discussion: Ante situm hepatic veins and IVC resection and reconstruction was originally described for tumours involving the IVC and hepatic veins junction. IVC Stenting is the first line of treatment for MOV C. When IVC Stenting fails the commonly done surgical procedure is combined cavo atrial and porto caval shunt. This type of shunts are more prone for shunt thrombosis due to long length. Our novel procedure allows more physiological restoration of hepatic venous drainage without shunt induced encephalopathy.

L10

Robotic roux en-y bilioenteric reconstruction. Manoj Kumar Singh, Sanjay Goja, Arvinder Soin, Medanta Liver Institute, Gurugram

Introduction: Robotic surgery is gaining ground in liver surgery with growing usage and enthusiasm among liver surgeons; the results comparable to open surgery along with benefits of minimal invasive approach. The authors describe robotic bilioenteric anastomosis (Roux en-Y hepatico-jejunosotomy) done for benign biliary stricture and choledochal cyst. Methods: Retrospective chart review of a case of benign biliary stricture and choledochal cyst done at our institution in 2015. Results: The patient with benign distal biliary stricture was a 57 y/o male who was diagnosed during workup for abdominal pain and jaundice. He had undergone spincterotomy and stent placement few months before and presented to us with recurrent symptoms of cholangitis. Imaging including CT and MRI showed diffuse dilation of intra and extrahepatic biliary system with tapering at distal bile duct. Patient underwent robotic side to side roux-en-y hepatico-jejunostomy and choledectomy. Patient's intra-operative and post-operative course was uneventful with hospital stay of six days. The other case was a 35 y/o female found to have a type IVa choledochal cyst during workup for recurrent upper abdominal pain associated with nausea/vomiting and fever. Robotic excision of choledochal cyst was performed followed by creation of roux limb and hepatico-jejunostomy. Patient had uneventful intra-operative and post-operative course with hospital discharge after five days. Pathology findings were consistent with inflammed choledochal cyst. Conclusion: The authors present cases of robotic roux en-y hepatico-jejunostomy done in benign biliary stricture and choledochal cyst, adding on to the growing literature on the feasibility and safety of robotic surgical platform for hepatobiliary surgery.

L11

Primary Hepatic Lymphoma Treated With Liver Resection And Post Operative Chemotherapy. Sreeharsha Korukonda, Nishkarsh Mehta, A Anandhi, Vishnu Prasad NR, Debasis Gochhait, JIPMER, Puducherry

Introduction: Primary hepatic lymphoma (PHL) is a type of GI lymphoma and a very rare clinical entity. Here we are reporting a case of PHL treated with primary hepatic resection and post-operative R-CHOP chemotherapy regimen and diagnosed after post-operative biopsy report. The Case: A 55 year old female presented with dull right upper quadrant abdominal pain, anorexia and weight loss. She had hepatomegaly and no other significant finding. CECT abdomen revealed well-defined solid mass with central hypodense fluid attenuating area in the liver with thin pseudo capsule. Biopsy or FNAC not taken in view of suspicious vascularity. Metastasis, hepatocellular carcinoma and hemangiomia were considered as differential diagnosis. Abdominal imaging, sigmoidoscopy and upper GI endoscopy were normal. Since liver lesion looked operable according to CT, left hepatectomy was performed. Post op biopsy revealed large B cell lymphoma. Appropriate chemotherapy improved patient’s condition markedly. Discussion: Primary hepatic lymphoma is a rare form of extra nodal lymphomas, accounting for less than 1% of all extra nodal lymphomas. In order to define the condition as PHL, liver has to be the only site of lymphoma occurrence or to be involved in a major degree with minimal non liver disease. Most PHLs are of B-cell origin with large cells as the main cell type.
**L12**

**Living Donor Liver Transplantation in Budd Chiari Syndrome: surgical challenges and outcomes.** Manoj Kumar Ayyappath, Divakar Jain, Furquan Ahmad, Gaurav Sood, Kausar Makki, Vishal Chorasiya, Punnet Dargan, Vivek Vij, Fortis Hospital, Noida

Budd–Chiari syndrome (BCS) is a rare and potentially life threatening disorder characterized by obstruction of hepatic venous outflow resulting in increased hepatic sinusoidal pressure and portal hypertension. Living donor liver transplantation in this setting is a technically demanding surgery with unique problems in view of venous outflow reconstruction. **Methods:** We performed 427 LDLT from 2012 till date. We retrospectively analyzed the prospectively maintained data. The patient characteristics, stage of the disease, cause of the disease, pre transplant management were noted. The operative records were accessed to note the surgical techniques used and telephonic interviews were done to understand the survival data. SPSS software was used to analyze the survival data. **Results:** Among these, 13 patients had BCS (10 males and 3 females). Eleven patients had chronic BCS, one acute and another sub acute. Surgical technical innovations in these patients included veno-atrial anastomoses, cavoplasty with portal vein patch reconstruction. We have achieved 86.4 percent 4 yr survival at a median follow up of 25 months (1-46 mths). **Conclusion:** Budd Chiari syndrome poses unique challenges while undergoing Living Donor Liver Transplantation. With innovative surgical techniques, these patients can achieve excellent outcomes.

**L13**

**Laparoscopic Left Lateral Sectionectomy for a Large HepatoCellular Carcinoma in Non Cirrhotic Liver.** Manoj Kumar Ayyappath, Vysakh Rajan, Amala Institute of Medical Sciences, Thrissur

**Introduction:** Laparoscopic liver resections are technically demanding procedures. As the expertise increases, the utility of laparoscopy in managing various liver tumors including Hepatocellular carcinoma are on the rise. The only potentially curative option for patients with HCC in non cirrhotic background is resection. This video demonstrates Left lateral sectionectomy for a large HCC in the left lateral segment of the liver. **Methods:** After a staging laparoscopy, two 10mm ports and three 5 mm ports were placed. The resection was proceeded along the following steps. It started with the mobilization of the Left lateral lobe after the division of the Falciform ligament and the Left triangular ligament. The portal pedicles were clipped and divided early in the surgery. Hepatic transection was done with the aid of Ultrasound shears, Kelly lysis and vascular staplers. The liver was retrieved through a suprapubic Pfannensteil incision. The patient recovered well and was discharged on third post operative day. **Conclusion:** The minimally invasive approach for resection of Hepatocellular carcinoma is feasible and safe. Larger studies are needed to determine the oncological and survival benefits of these procedures.

**L14**

**Intrahepatic cholangiocarcinoma involving all the major hepatic veins- liver resection with MHV reconstruction.** Rohan Jagat Chaudhary, Prashant Bhangui, Sanjay Yadav, Amit Rastogi, Arvinder Singh Soin, Medanta Liver Institute, Gurugram

**Introduction:** When advanced hepatobiliary malignancy involves the major vein that are requisite for venous drainage from the remnant liver after Hepatectomy, it may be unresectable, unless the hepatic vein involved by the tumor can be reconstructed after combined resection with hepatectomy. Liver parenchymal abnormalities that happen in hepatic regeneration in liver remnant with insufficient venous drainage may foster cancer cells proliferation and play a role in tumoral microenvironment, thus worsening oncological outcomes. **The Case:** 68 year old Female, with BMI of 26 kg/m², known Hypertensive, presented with abdominal discomfort on and off. On Ultrasound Abdomen an incidental liver SOL of size 3.5 cm was found between porta and hepatic vein confluence with no IHBRD, PVT, ascites or CLD. A differential diagnosis of HCC vs CRLM vs infective vs inflammatory was made. Liver function tests were normal. Ca 19 9, CEA, AFP were normal. Hydatid and amoebic serology were negative. PET CT triphasic whole body was done which revealed an intrahepatic hypodense FDG avid (SUV max 12.34) mass of size 4.5x4.6x3 cm involving segments 8, 4a, 2 and extending into caudate. The mass showed no arterial enhancement, but it was heterogenous in portal and delayed phases. MHV and LHV were involved. RHV and seg 7 vein abutted the lesion. RIHVs were uninvolved. The lesion was abutting the IVC causing indentation of IVC but without its direct involvement. There were few FDG avid lymph nodes in aorto caval, peripancreatic and mediastinal LNs which were reactive on FNAC. Biopsy from the liver lesion revealed intrahepatic cholangiocarcinoma. Patient was evaluated for surgery, HVPG was 3 mm Hg, Fibroscan showed CAP–326 and E– 4.9 kPa. Left trisegmentectomy was planned. Liver volumetry showed a remnant (right posterior sector) of 38%. To get R0 resection at RHV, irreversible electroporation was done for 2 cm tumor around RHV. On Diagnostic laparoscopy, inferior liver quality was evident. So nonanatomical resection of seg 8, a, 2 and caudate lobe was planned. Transsection line was marked 1 cm beyond the mass under intraoperative ultrasound guidance. Transsection was done with CUSA, under low CVP; without Pringle's manœuvre as in Live Donor Hepatectomy. MHV was reconstructed using a cryopreserved portal vein.
graft to maintain the venous drainage of seg 3, 4b, and 5. Histopathological examination revealed a free margin of >1 cm around the tumor of size 4.5 cm with <1 mm free margin near RHV. The tumor was positive for CK 7, CK 19 and CK 19.9 and negative for CK 20 which are characteristic of Intrahepatic Cholangiocarcinoma. Patient was discharged on POD5. Patient is doing well after 10 months of follow up with patent MHV and no recurrence. Conclusion: If Hepatic tumors involve major hepatic veins which precludes resection because of major hepatectomies and smaller remnant, then we should do segmental resection with reconstruction of major outflow veins. It helps us to achieve both the goals of good functional liver remnant and good oncological clearance.

L15
Right Lobe Donor Hepatectomy using Upper Midline Incision. Rohan Jagat Chaudhary, Amit Rastogi, Manoj K Singh, Arvinder Singh Soin, Medanta Liver Institute, Gurugram

Introduction: Wound related problems, cosmesis and Incisional Hernia are the chief complaints of live donors in both short and long term. We present a video showing our technique of right donor hepatectomies using upper midline incision (UMI) in order to avoid muscle cutting and improve outcomes. Methods: Right Donor Hepatectomies using UMI have been performed in more than 200 donors at Medanta Liver Institute since Feb 2011. Previously our exclusion criteria for using UMI for Right donor hepatectomies were 1) grafts > 800 gm on CT Volumetry, 2) obese donor, 3) donors more than 80 kg, 4) narrow subcostal angle, 5) presence of >1 preservable inferior hepatic veins (IRHV). After case 57, we have extended our criteria and include graft upto 1000 gm weight on CT volumetry and any number of preservable IRHV, irrespective of donor BMI, weight and subcostal angle. Video Description: Video shows UMI from below xiphoid to above umbilicus. Thompson retractors are placed at upper end and Balfour retractors are placed at lower end of incision. Right lobe is mobilised and anterior cava dissection is done. Retrograde cholecystectomy is performed and cholangiogram is done. Porta hepatis dissection is done and replaced right hepatic artery (RHA) and right portal vein (RPV) are looped. Transection line is marked after temporary clamping of RHA and RPV. Under low CVP, transection of liver is done using a combination of CUSA, drip bipolar and monopolar diathermy along with suture ligation of bigger vessels. Right Hepatic Duct (RHD) is looped and divided, continuity of remnant duct with CBD is confirmed by probing. Hanging maneuver is performed for the remaining parenchyma with 12 Fr nasogastric tube as a sling and transection is completed after ligating the caudate pedicles. 4000 IU of heparin is given I.V for graft harvesting. MHV is stapled with 35mm vascular linear stapler. RHA is clamped and divided. RPV is clamped and divided at bifurcation. RHV is clamped and divided with a cuff of cava. Graft is removed and perfused with cold UW solution. Stumps of the RHV, RPV, RHA and RHD are closed. Methylene blue test is done to check for leaks. Completion cholangiogram is performed to check for bile duct patency. Remnant left lobe (falciform ligament) is fixed to undersurface of the diaphragm. Abdominal wall is approximated with nonabsorbable sutures followed by subcuticular skin closure. Conclusion: The midline incision for right donor hepatectomies is feasible, safe and reproducible in experienced centers. It is associated with improved cosmesis, reduced post operative pain and early discharge.

L16

Aim: To analyse safety of liver resections in symptomatic giant Haemangioma. Introduction: Haemangioma are the most common Benign liver tumours. Less than 10% become large enough to cause symptoms. We had interesting cases of Giant Haemangioma admitted & treated in our department with various symptoms. Methods: We Retrospectively analysed 12 Giant Hepatic Haemangioma cases, who underwent treatment between June 2011 and June 2015. Their epidemiology, symptomatology, blood investigations, imaging, Intraoperative period, post operative period were analysed. They were followed for minimum period of one year. Results: Among them, 63% cases were females. Mean age was 47 years. Their symptoms were – Intestinal obstruction (1) Jaundice (1) Ascites (1) Early satiety (2) fever (2) massive hepatomegaly with feeling of heaviness (5) upper abdominal pain (12). Mean Haemangioma size was 15*10 cm. Sr AFP was normal in all cases. H/o OCP intake was present in one case. Multiple haemangioma was found in 3 cases. Platelet count were normal in all cases. No extra hepatic haemangioma was seen. 8 cases underwent surgical management as follows– Right Hepatectomy (2) left lateral segmentectomy (2) Enucleation (4). Patient presented with intestinal obstruction underwent Right Hepatectomy and resection of obstructed distal ileum. Post operative bleeding occurred in one case managed conservatively. 4 cases with minimal symptoms underwent conservative management and was on regular follow up. There was no mortality. Symptom relief was obtained in all surgical patients. Conclusion: Surgical management of Symptomatic Giant Haemangioma liver offers best way of symptomatic relief without added morbidity and mortality.
L17
Role of surgical resection in Giant hepatic hemangioma.
JMV Amarjothi, Villalan Ramasamy, Amudhan Anbalagan, Bennet Duraisamy, Anand L, Kannan D, MMC, Chennai

Introduction: Hepatic hemangiomas are the most common liver tumors with the majority being incidental findings on imaging. Less than 10% are symptomatic or need clinical attention. This is with the exception of Giant hemangiomas (lesions more than 10 cm). Aim: The aim of this study is to discuss the outcomes of surgical resection for giant hemangiomas, the various modalities of resection and outcomes after the same. Methods: This is a retrospective analysis of hepatic giant hemangiomas treated in our hospital from March 2012 to March 2015. The size of the lesion, lobe involved. Intra operative blood loss, intra operative and post operative complications, various techniques used in liver resection, duration of the procedure, and management of the remnant liver was analysed. Results: Out of ten (n=10) patients with giant hemangiomas, eight (n=8) underwent anatomical resection. Most of the patients were females (n=9), solitary, asymptomatic, involving the right lobe with a mean size of 16 cm. During surgery, median blood loss was 380 ml, and the average operative duration was 195 minutes. Resection surface bleeding was arrested with suture ligation in a majority of the cases. Intraoperatively one patient had persistent bleeding from the resected liver surface necessitating perihepatic packing and successful removal the day after. Liver resection was done using Kelly clamp and diathermy in most cases. Post operatively, there was one mortality due to liver failure. The median duration of stay was about 8 days. Conclusion: Giant hemangiomas are generally not innocuous and are prone to complications. They are best treated by complete surgical resection which can done with acceptable morbidity and mortality. Pre operative tumour embolisation if feasible reduces tumour size and enables resection. Special care must be given to control bleeding and manage the remnant liver during the procedure.

L18
Biliary cyst adenoma in left liver with a solid component extending into hilar biliary confluence- Operative video.
Anand Bharathan, Gokul Kruba Shanker R, Vadiraj Hunnur, Shujaath Asif, Madhura Prasad Suman, Saravanan Subburaj, Mohanprasad VG, VGM Hospital, Coimbatore

A 52 year old woman presented with abdominal discomfort and jaundice for 1 month. Discomfort was in the upper abdomen, did not have any periodicity and was non-radiating. She noticed high colored urine a month ago. There was no pruritus or pale stools. She had low grade, intermittent fever. She reported anorexia and had lost 20 kilogram weight over the last 1 year. There was no gastrointestinal bleeding. Stools were normal. She did not have any comorbidity. She did not undergo any operation in the past. She frequently looked after a cat that was living near her house. Clinical examination revealed a moderately nourished woman, who was icteric. There were no signs of liver cell failure. There was no supraclavicular lymphadenopathy. Abdomen was not distended and was soft. Non tender hepatomegaly was present. There was no palpable mass. There was no clinical evidence of free fluid in abdomen. Examination of other systems was unremarkable. Serum bilirubin was 2.6 mg/dl. Conjugated bilirubin was 2 mg/dl and alkaline phosphatase was 560 IU/ml. Ultrasound scan abdomen revealed a complex cystic lesion in segment 4 and 5 of liver with dilatation of intrahepatic biliary radicles bilaterally. CT scan of abdomen revealed a complex cystic lesion in segment 4 and 5 and the same was encroaching the umbilical fissure. A solid component of the lesion extended into the hilar biliary confluence occluding it. There was no vascular invasion or metastatic disease. ERCP did not reveal any hydatid cyst elements in the extrahepatic biliary tree. Preoperative diagnosis was biliary cystadenocarcinoma. We performed left hepatectomy with segment 5 liver resection with resection of extrahepatic biliary tree and did cholangiojejunostomy to right sided sectoral ducts. Operating time was 8 hours and 30 minutes. Blood loss was 400 ml and we gave 1 unit blood transfusion. Patient recovered uneventfully. Biopsy showed biliary cystadenoma in liver with a solid component extending into hilar biliary confluence and obstructing it. We intend to show the preoperative imaging (video), planning of the operation and the operative video. Our video will illustrate the steps of hilar dissection, dissection of left hepatic vein-IVC junction, liver parenchymal transection, hilar biliary division and cholangiojejunostomy to right hepatic duct.

L19
One–Stage Thoracoscopic Treatment For Lung And Liver Hydatid Disease. Santosh C Gudimani, Abhishek Bhagvat, Mohan N, Ramesh Ardhana, MMHRC, Madurai

Pulmonary echinococcosis is prevalent in many parts of the world and especially in India. However liver hydatid disease is far more a common presentation. Sometimes patient come with both liver and lung hydatid cyst. Gold standard for management of pulmonary hydatid is surgery. With the increase in thoracoscopic surgery experience, management of pulmonary hydatid disease is being tried now through VATS. Now surgeons are increasingly preferring VATS approach for pulmonary hydatid due to less post-operative morbidity and equivalent surgical clearance of hydatid cyst. Various small case series have supported the efficacy of VATS for pulmonary hydatid cyst evacuation. To our knowledge only one case series of 4 cases is published documenting only thoracoscopic approach for handling pulmonary and liver hydatid disease. This is a case of right
Lung hydatid disease with right liver hydatid cyst with transdiaphragmatic communication between the two by a well formed tract diagnosed on CT chest and abdomen. Under Albendazole cover he underwent thoracoscopic evacuation of pulmonary and liver cyst. Single lung ventilation was used for this surgery. This video shows four port thoracoscopic approach for right lung hydatid evacuation with intra-parenchymal cyst evacuation, transdiaphragmatic tract exploration and liver hydatid cyst evacuation. After evacuation betadine solution wash was given and right ICD was placed. Duration of surgery was 75 mins. Later patient was kept on Albendazole treatment. On subsequent follow up right lung had completely expanded with no remnant pulmonary & liver hydatid disease.

Conclusion: This demonstrates that thoracoscopic approach is feasible in management of pulmonary and posteriorly situated liver hydatid cyst. It is safe and useful surgical technique and it avoids need of second surgery.

L20
Does Internal Stenting Influence Biliary Anastomotic Leaks in Adult Living Donor Liver Transplantation: A Pilot Study. Anila T, Vivek Mangla, Saumitra Rawat, Abhideep Chaudhary, Karisangal Ramaswamy Vasudevan, Sir Gangaram Hospital and Jaypee Hospital, New Delhi

Introduction: Biliary complications are the bane of LDLT because of their incidence, need for repeated treatment and the potential detrimental effects on graft and patient survival. Whether internal stenting of duct to duct anastomosis in LDLT can reduce incidence of biliary complications was not clearly understood. There are only few studies on the role of internal stent in reducing biliary complications in liver transplantation with conflicting results. This study aims to compare the biliary complications in patients with a stented versus non stented duct-to-duct anastomosis during LDLT in a randomized controlled trial.

Methods: A pilot study comprising 15 patients in each arm was carried out to assess the difference in terms of primary objective (bile leaks) between the two groups. The results of the pilot study were analyzed on intention to treat basis. All consecutive adult patients (more than 18 years), irrespective of graft type (right or left lobe) or etiology were included. Patients who had hepaticojejunostomy, retransplant were excluded from the study. Infant feeding tube of appropriate size that the duct could accommodate was passed across the anastomosis and through ampulla into duodenum as an internal stent. The primary end point was bile leak as defined by ISGLS and secondary end point was biliary stricture. All patients were followed up for 24 weeks as per the established existing protocols. Endoscopic removal of the stent was done at the end of 24 weeks. The required number of 30 patients for the pilot study were recruited by March 2015 and data was analyzed. Based on the results of the pilot study, a sample size of 138 was calculated and study was intended to continue till the target sample size is achieved. Results: In our study, the incidence of biliary complications was 16.6% (8/30), of which bile leak rate was 10% and stricture rate was 26.6%. Bile leak occurred in 2 out of 15 patients in the non stented group and 1 patient in stented group (13.3% vs 6.6%, P = 0.55), biliary stricture occurred in 3 out of 15 patients in the non stented and 2 in the stented group (20% vs 13.3%, P = 0.32). Although there is a trend towards a lower biliary complication rate in the stented group, this was not statistically significant. All patients with bile leaks in non stented group developed late biliary strictures on follow up. One stent related cholangitis episode occurred and stent was removed early. Graft and patient survival at 18 months was not statistically different in both the groups. Conclusions: We have shown in this prospective randomized pilot study that the use internal biliary stent may contribute to lower biliary complication rate in LDLT. DDA with internal stent is a safe and efficient technique of biliary reconstruction. We do, however, recognize the need for continuing the study till target sample size is achieved to come to a reasonable conclusion of role of internal stent in biliary reconstruction in LDLT.

L21

Introduction: Management of patients with advanced end-stage liver disease and critical coronary artery disease (CAD) not amenable to interventional stenting is a difficult clinical situation which often results in rejection of the patient for liver transplant. Live donor liver transplant (LDLT) may afford an opportunity to optimize selected patients to undergo combined LDLT and coronary artery bypass grafting (CABG) in experienced centers. We present our protocol and experience with the combined procedure at a center performing high volumes of both procedures. Methods: A total of 1150 patients underwent LDLT from January 2012. Pre transplant cardiac evaluation included Risk stratification, ECG, Dobutamine Stress echocardiography, Coronary CT Calcium Score (CaS) in all patients. This was followed by Coronary CT Angiogram (CTA) with or without Conventional Angiogram (CAG) on the basis of risk stratification and CaS, the cutoff of which was taken as 100. Cardiac evaluation revealed 44 patients to have critical CAD (stenosis>70%) suitable for revascularization prior to transplant. 26 patient had one vessel, 13 had two vessel and 5 had three vessel disease. 34 out of 44 patients underwent percutaneous angioplasty
and stenting and 6 refused further treatment or were lost to follow up. Four Patients who were found to be unsuitable for PCI were advised CABG out of which one refused further treatment and 3 underwent combined LDLT and CABG. Pre-operative optimization involved correcting Anemia, Coagulopathy and decreasing preload to heart. Operative protocol: CABG first followed by LDLT, donor surgery was begun once CABG was successfully completed. CABG by full sternotomy (1) & mid CAB (2) was done with standby begun once CABG was successfully completed. CABG by full sternotomy (1) & mid CAB (2) was done with standby cardiologist post CABG, continuous TEE, PAWP < 15 mm Hg, avoiding IVC clamp, fluid shifts and swings in blood pressure (MAP between 70-90 mm). Results: All 3 patients were male (57, 56, 67 years). Underlying liver disease was Hepatitis C, Alcoholic and Cryptogenic Liver Disease. All had HCC (within UCSF- 1, beyond criteria-2). CTP and disease MELD scores were 10/13, 10/20, 6/7 respectively. Cardiac workup showed critical stenosis in 3 vessels in first patient and 1 vessel disease in the other two; all these lesions were not amenable to percutaneous revascularization. Operation Duration for CABG/LDLT was 8/10, 2.5/14 & 2.5/11.5 hours respectively. Blood Loss was 4, 12 & 0.8 liters requiring 12, 20 and 1 unit of Blood transfusion respectively. Early post-CABG bleeding was detected from the sternotomy site in the first 2 patients, and controlled before starting the liver transplant. All had a smooth post-operative course apart from the third patient, who had atrial flutter on POD-5 which responded to pharmaco-therapy. There was no mortality. ICU stay of these patients was longer (8, 11 & 7 days) but the hospital stay (18, 17 & 13 days), was no different from the LDLT alone cohort. Conclusion: Combined CABG-LDLT is feasible in centers with extensive experience in both procedures. Multidisciplinary approach, meticulous selection, evaluation and coordination between the cardiac and liver transplant team can extend the benefit to those patients who would have otherwise been denied of LDLT alone or CABG alone.

L22 Complex Implantation in LDLT. Thiagarajan Srinivasan, Sanjay Goja, Arvinder Singh Soin, Medanta the Medicity, Gurugram

Introduction: Adult liver right lobe grafts with multiple outflow and very small pediatric recipients (often with anamolies) need complex bench reconstructions and complex innovative implantation techniques. Methods: Out of 2430 LDLT recipients (adults 2200 and children 230) complex bench reconstruction and innovative implantation techniques were required in 30% of LDLT recipients. The overall mortality was 8.9% and vascular complication rate was 3.1%. In this video there are 2 complex implantation examples. The issues in pediatric LDLT recipient were very low weight <8 Kg, status post kasai, atretic IVC, predouodenal portal vein (3mm) and monosegmental graft. The issues in adult LDLT recipient were renal dysfunction necessitating side clamping of IVC, low GRWR<0.8 and high portal pressure requiring hemiportocaval shunt, multiple outflow hepatic veins (6) (2 inferior hepatic veins, right hepatic vein, right superior accessoy hepatic vein, seperate segment 8 vein and middle hepatic vein. Complex Implantation Technique in Adult Right lobe LDLT: As the GRWR was less than 0.7 and the recipient had a portal pressure of 27mmhg before hepatectomy, a hemiportocaval shunt was made in the recipient with a autologous vein graft of diameter 8 mm with 6-0 prolene. In the bench the right lobe graft had 6 outflow hepatic veins. The 2 inferior hepatic veins were reconstructed with a single outflow PTFE boat graft. The MHV was extended by a 1 cm PTFE graft. The right hepatic vein, right superior accessoy hepatic vein and segment 8 vein (not amenable for reconstruction with MHV) were plastied by 6-0 prolene to make it into a single opening. During implantation a side biting clamp of IVC was used for all the hepatic vein reconstructions. During implantation the plastied right vein was anastamosed to the IVC. Then the boat graft was anastamosed with the IVC. Then finally the extended MHV was anastamosed to the IVC. The portal vein and hepatic artery were reconstructed according to standard protocol. The final view shows a well perfused graft without any congestion. Complex Implantation In a Post Kasai Child of Weight Less Than 7KG: After the recipient hepatectomy was done, the atretic IVC was isolated and clamped and divided. The monosegment graft (150 g) was implanted into the child after reducing the graft laterally and anteriorly. First the left hepatic vein was anastamosed to the IVC end with 6-0 prolene continuos suture. Then the left portal vein of the graft was anastamosed to the main portal vein of the recipient (3 mm) with posterior 7-0 prolene continuos and anterior interrupted sutures. Adequate mobilisation of the recipient predouodenal portal vein till he confluence is essential. The portal vein just above the confluence was used for anastmosing with the graft portal vein. The alignment and position of the graft and both portal veins is essential for adequate portal flow. The central tie of the portal vein is tied at first after saline flush and bleed out. The bile duct and hepatic artery was anastamosed according to standard protocol. The final view shows a well perfused monosegmental graft.

L23 Palliative Resection For Neuroendocrine Tumours With Liver Secondaries- Report Of Three Cases. Bala Murugan Srinivasan, Rajendran Vellaisamy, Anudhan Anbalagan, Prabhakaran Raju, Benet Duraisamy, Kannan Devy Gounder, MMC, Chennai

Introduction: Malignant neuroendocrine tumours of the GIT with liver metastasis are indolent, have 5 years survival of about 30% without resection. The survival as well as the quality of life can be improved with palliative...
resection. **Methods:** The study was between March 2013 to August 2015. Case 1: 62 year male with abdomen pain with CECT- 5x4 cm growth antropyloric region with bilobar liver metastasis. Gastrin 9000 pg/ml. Distal gastrectomy with non anatomical resection of right lobe of liver was done. Case 2: 24 years male with abdomen pain, CECT- 2.8x2.7 cm exophytic mass body of pancreas extending into peripancreatic space with multiple liver metastasis. Chromogranin level was 4655 ng/ml, EUS FNAC- neuroendocrine tumour, Distal pancreatectomy with splenectomy and liver biopsy done. Case 3: 47 years male with abdomen pain, CECT - 8x9 cm heterogenous lesion in liver segments 5 and 6 with multiple cysts within it. AFP, CEA, CA 19-9-WNL. Resection of segments 4b, 5 and 6. HPE is moderately differentiated neuroendocrine malignancy. **Results:** The follow up duration was 18, 26 and 20 months respectively for the three patients. The patients are asymptomatic till now with the good quality of life. **Conclusion:** Palliative resection for neuroendocrine malignancies with metastasis have good quality of life and good palliation atleast in the short term. Debulking of tumour even upto 90% results in equivalency to R0 resection. At 5 years the recurrence of liver metastasis is 84% and survival is 61% for cytoreductive surgeries.

**L24**

**To Evaluate The Role Of Implantable Doppler Ultrasound Surveillance In Intra-Abdominal Vascular Anastomoses.** Shrirang Vasant Kulkarni, Pankaj Rao, Sudeep Naidu, Arun Kumar Singh, Anuj Kumar Sharma, Vikram Trehan, Amit Gaur, Nishant Pathak, Army Hospital Research And Referral And Base Hospital, Delhi and Air Force Hospital, Jorhat

**Introduction:** Intra-abdominal vascular anastomoses including those for liver transplantation need monitoring in early post-operative period for better clinical outcome. Trans-cutaneous Doppler ultrasound monitoring is a standard reference modality for such surveillance, though associated with certain limitations. Implantable Doppler probe monitoring system is a relatively novel method, with some experience in post-operative monitoring of vascular anastomoses in free flaps in reconstructive surgeries. **Aim:** The aim of this study is to evaluate the role of implantable Doppler ultrasound surveillance in intra-abdominal vascular anastomoses. Study design: Diagnostic cross sectional study. **Methods:** A total of 40 patients who had undergone intra-abdominal vascular anastomoses over a period of two years, viz. from March 2014 to March 2016 were studied. Intra-abdominal vascular anastomoses were monitored with implantable Doppler probe monitoring system (study modality) as well as protocol based once a day trans-cutaneous Doppler ultrasound system (standard reference modality) for 5 post-operative days and the findings were compared statistically. **Results:** For the implantable Doppler probe monitoring, sensitivity as well as negative predictive value was 100% each, while specificity was 94.44% and positive predictive value was 66.66% with an overall accuracy of 95%. Same values for the classical trans-cutaneous Doppler ultrasound examination were 100%. However, mean lead time while identifying a complication by implantable Doppler ultrasound surveillance modality over routine transcutaneous Doppler modality was 10 hours. **Conclusion:** The implantable Doppler probe monitoring system is ideal for post-operative surveillance monitoring of intra-abdominal vascular anastomoses. However an abnormal positive finding on implantable Doppler probe monitoring system needs to be confirmed by conventional trans-cutaneous Doppler Ultrasound system. The implantable Doppler probe monitoring system, because of its inherent advantages, lends us with a good lead time by identification of a vascular complication well before the irreversible cascade of clinical catastrophe has set in with an additional benefit of tissue salvage.

**L25**

**Donor To Recipient Matching (DORMAT Score) In Living Donor Liver Transplantation.** Pulkit Sethi, Raghavendra Babu, Sudhindran Surendran, Puneet Dhar, Unnikrishnan Gopalakrishnan, Dinesh Balakrishnan, Ramachandran Menon, Amrita Institute Of Medical Sciences, Kochi

**Introduction:** Recipient outcomes in Living Donor Liver Transplantation (LDLT) depend on various characteristics in both recipient and donor. **Aims:** a) To identify recipient and donor characteristics in adult to adult LDLT retrospectively, seeking to determine factors that affect recipient morbidity and mortality after transplantation. b) To derive a score to match donor and recipient based on these factors. c) To validate this score prospectively and look for its effectiveness in predicting recipient morbidity and mortality. **Methods:** Retrospective analysis of 100 LDLT recipients and their respective donors were done. Factors in recipient which were analyzed were age, sex, Body Mass Index (BMI), Model for End stage Liver Disease (MELD) score, ascites, hydrothorax, history of encephalopathy, history of spontaneous bacterial peritonitis (SBP) or hepatorenal syndrome (HRS), presence of pulmonary shunts, right ventricular systolic pressure, serum sodium concentration, hypertension, cardiovascular and respiratory diseases, pre-operative blood culture positivity within a month before surgery, C-Reactive Protein (CRP), procalcitonin level, portal vein thrombosis and history of previous surgery. Donor factors analyzed were age, sex, BMI, blood group compatibility, relationship to recipient, diabetes mellitus, hypertension, dyslipidemia, alcohol intake, liver minus spleen attenuation index, expected graft to recipient weight ratio and portal vein anatomy. Statistically significant factors affecting recipient mortality from the above factors were chosen to derive a regression equation to calculate
the Donor Recipient Match (DORMAT) score. This equation was applied to 71 donor-recipient pairs prospectively and their outcome was analysed. **Results:** The factors which were found to significantly affect the early post-operative mortality in recipient were recipient age (0.019), recipient BMI (p=0.008), history of HRS (p=<=0.0001), history of SBP (p=0.049), pre-operative blood culture positivity within a month of surgery (p=0.054) and donor age (p=0.015). Regression analysis was done using the significant variables and a prognostic model to detect recipient mortality in early post-operative period was derived. This Donor Recipient Match (DORMAT) score was defined as [0.002 (Recipient age)+0.013 (Recipient BMI)+0.055 (SBP)+0.344 (HRS)+0.022 (Pre-op culture positivity)+0.01 (Donor age)-0.639]x100. This score was applied in 71 adult to adult LDLT recipients for validation. The c-statistic (area under Receiver Operator Characteristic curve) of DORMAT as a predictor model was 0.712 and cut off point for the score was selected as 30 after analysis of ROC curve. The difference in mortality of patients with DORMAT score 30 or less (12.82%) and patients with DORMAT score more than 30 (37.5%) was found to be statistically significant (p=0.01). When applied, there was a statistically significant difference in duration of ICU stay of the recipients as well. The positive predictive value was 41.38% and negative predictive value was 88.1%. Mortality rates for different DORMAT scores were calculated and plotted on Kaplan-Meier curve. The mortality rate was seen to increase with increasing DORMAT score. **Conclusion:** DORMAT score is the first model which matches both donor and recipient factors to predict the early post-operative mortality in recipients after elective adult to adult LDLT. It can be used to improve the outcomes in the recipients.

**L26**

**BCLC criteria is not “sin qua non” for resection in HCC: Outcomes following 100 consecutive Liver Resections for HCC- Indian Experience.** Manish Suresh Bhandare, Shraddha Patkar, Shailesh V Shrikhande, Mahesh Goel, Tata Memorial Hospital, Mumbai

**Introduction:** Surgery remains the mainstay of management of HCC, and the only modality that can offer cure in majority of situations. BCLC staging system is a useful tool to guide treatment, however recently there is a trend towards aggressive therapy for intermediate stage BCLC. **Aim:** To evaluate short term and long term outcomes of HCC that can be achieved by resectional treatment. **Methods:** Data was collected from a prospective database from GI & HPB department, Tata Memorial Hospital, Mumbai. All patients who underwent liver resection for HCC, were included, from June 2010 to June 2015. **Results:** 103 patients of HCC were taken up for surgical resection, of which 100 underwent complete resection, 3 were considered inoperable on exploration. The median age was 58 yrs. Cirrhotic resections for HCC were 43 (43%). According to the BCLC classifications the patients were staged (BCLC stage A-25, B- 64, C-11). Median tumour size was 7 cm (range: 2-30 cm). Preoperative therapy was administered in 36 (36%) patients and TACE was the most commonly used therapy. Postoperative morbidity and mortality was 38% (major 17%, minor 21%) and 08% respectively. At median follow up of 16 months (mean -20 mths), overall 1-, 3- and 5-year survival was 74.8%, 53.6% and 49.2% respectively. The 3 year survival for BCLC stage A, B and C was, 50.8%, 57.7% and 38.1% respectively (P = 0.191). **Conclusion:** In the era of Liver transplantation, resection (especially for larger tumours) is still preferred treatment option. Improved long term outcomes with acceptable safety can be achieved in most BCLC– B and selected BCLC– C stage patients. Neoadjuvant/preoperative TACE appears to be safe and have disease free survival advantage in select group of patients. Randomized trials are required to further elucidate these results.

**L27**

**A prospective single blind Randomized control Trial to compare the outcome after liver resection with or without intermittent portal infl ow control (Pringle’s maneuver)- LIPIINCOT Trial.** Abdul Rehman, Madras Medical College, Chennai

**Aim:** This study was performed to know whether Pringles maneuver during liver resection as a method of infl ow control has any influence on operative outcome. **Methods:** From 2013 July to 2015 March, 80 cases of proposed liver resections were randomly allocated into two groups based on whether Pringles maneuver (intermittent 15min-5min) will be used or not as a method of infl ow control. In both groups selective low CVP anesthesia and restricted volume replacement during parenchymal transactions were performed to minimize bleeding. 14 cases were left out as the disease is advanced on exploration in 14 cases. In the remaining 66 cases Group A (Pringle's group) consisted of 33 cases Group B (Non Pringle's group) consisted of the remaining 33 cases. Major hepatectomy is defined as if 3 or more segments removed. The blood lactate levels, Neutrophil lymphocyte ratio on first POD, LFT, creatinine on day 1, 3, 5, were performed. Demographic profile, Duration of surgery, amount of blood loss, transfusion, duration of postoperative hospital stay, morbidity &mortality were analyzed by Independent t test, Chi-square test, Fisher’s exact test, Pearson correlation test, Spearman’s rho test. **Results:** There was no significant difference in preoperative laboratory data.. The age and sex, condition of liver & disease condition, type of hepatectomy in Group A were comparable to Group- B. There was a need for conversion to Pringles in 2 cases. Overall there is no significant difference in operating time& blood loss. Sub group analysis shows Major, Right hepatectomy for highly
vascular tumours and diseased (cirrhotic & steatotic) liver had more blood loss. Transfusion requirement & hospital stay are more in Group-A. In Group-A liver enzymes lactate level & N/L ratio on day one is significantly increased. Grade B & C liver failure, Post operative hyperglycemia are significantly increased (P<0.05) in Group A compared to Group B cases. In Group A (p<0.05) 5 patients died of post op liver failure, 1 died of disease severity (Mets) whereas in Group B only 1 died of liver failure & 2 died of disease severity after 2months of surgery & 1 due to MI. Univariate analysis shows age, comorbidity, condition of liver, type of resection, bloodless, procedure duration, N/L ratio, lactate level, 50-50 criteria correlated well with morbidity & mortality. **Conclusion:** Applying Pringles maneuver during liver resection causes increased hospital stay and transfusion requirement & complications especially in diseased liver. It causes increased blood lactate and N/L ratio after hepatic resection which served as an accurate predictor of post operative liver failure and mortality. So it can be avoided in cirrhotic liver, minor & left lobe resections. But can be applied for selective cases of non cirrhotic liver, non anatomical resection & huge vascular Right lobe and central tumours where anterior approach is preferred.

**L28**

**Can the model for end-stage liver disease score predict post-operative outcome of hepatectomy?** Dinesh Kundlik Zirpe, Gopakumar CV, Somak Das, Sudeep Swain, Sri Harsha Kollu, Darshan Patel, Anand Ramamurthy, Apollo Main Hospital, Chennai

**Introduction:** Hepatic resections have become a routine in the management of liver conditions such as primary liver malignancies and certain secondaries. However, resection is associated with significant risks of perioperative morbidity depending on multiple known and unknown factors. Current preoperative testing protocols may not support a reliable risk stratification scheme for patients undergoing hepatectomy. Aim of study was to identify the correlation of the model for end-stage liver disease (MELD) score with outcome of hepatectomy. **Methods:** A prospective analytical observational study was performed based on consecutive patients who underwent hepatic resection for different benign and malignant etiologies between January 2014 and May 2016 at a tertiary health care centre in South India. **Results:** Total 55 underwent hepatic resection during the study period. Fifty one patients met inclusion criteria. The median age of the patients was 50 years (range, 21-76 years). The number of men was 27 (52.9%) and the number of women was 24 (47.1%). Of all, 49 (96.1%) were Child Turcotte Pugh (CTP) class A and only two (3.9%) patients of CTP class B. Most frequent surgery performed was right hepatectomy (47%) followed by left hepatectomy (13%). Most common liver disease undergoing hepatectomy was hepatocellular carcinoma (HCC) 31%. Major hepatectomy was performed in 40 (78.1%) cases. Median MELD score was 8 points (range, 6-18). Overall morbidity associated with hepatic resection was 43.2%. Hepatic dysfunction occurred in 4 (7.8%) patients. Operative mortality was 3.9% (n= 2). MELD score proved to be statistically significant factor when compared with morbidity (p=0.005), mortality (p=0.029) and total length of stay in hospital (p= 0.001). A MELD score of 13 had the strongest association with the subsequent development of post operative hepatic failure, with sensitivity of 75% and -specificity of 79%. (Area under the curve: 0.880) **Conclusion:** MELD score can be used to stratify or predict the post operative complications in patients within CTP class A and B patients undergoing hepatic resection.

**L29**

**Are drains required after donor hepatectomy?** Swapnil Sharma, Kapil Dev Yadav, Shailesh Sable, Ashutosh Chouhan, Sorabh Kapoor, Vibha Varma, Vinay Kumaran, Kokilaben Dhirubhai Ambani Hospital, Mumbai

Abdominal drainage after donor hepatectomy is a routine practice in most of the LDLT centres. But the routine abdominal drainage after donor hepatectomy is questioned as the drain increases the postoperative discomfort and also it hampers early ambulation of donor in postoperative period. At our centre we have done 142 liver transplant out of which 19 were DDLT whereas 123 were LDLT. We have done one dual lobe liver transplant. Retrospective study was performed in 124 donors. Drains were placed selectively with the surgeon deciding based on donor age, remnant volume, liver texture and personal preference. We have placed abdominal drain in 95 liver donors whereas abdominal drain was not placed in 29 donors. Average age of donors in which drain was placed was 36.7 years whereas average age of donors was 34.72 years in which drain was not placed. Male female ratio was approximately 1:1 among donors in which drain was placed whereas female donors were three times more common than male donors in which drain was not placed. Average blood loss was significantly more in donors in which drain was placed (559 ml Vs 403 ml, p <0.05). Blood transfusion was required in 9.5% donors in which drain was placed whereas blood transfusion was required in only 3.4% donors in whom drain was not placed. Average day of discharge was 9.2 postoperative day among donors with drain whereas average day of discharge was 8.86 postoperative day among donors without drain. Ascites at the time of discharge was present in 16.8% donors in which drain was placed, all of them were discharged with bag. Among donors in which drain was placed only two donors were having ascitic fluid leak from main wound one of which required PCD insertion whereas other was managed with bag application over the ascitic fluid leakage site in
the wound. Both of them improved. Among donors with drain, only one donor required re-exploration because of bleeding from caudate lobe. Bleeding was diagnosed because of clinical suspicion and drop in haemoglobin level. Drain fluid didn't show the sign of bleeding. Donors without drain did not require re-exploration. Postoperative bile leak was present in two donors in which drain was placed. One of them was having controlled fistula, hence donor was discharged with drain. Gradually drain output decreased and patient improved. Other donor was having bile leak after the drain was removed. This donor presented with clinical signs and required PCD insertion along with ERCP and stenting of biliary tree. Gradually drain output decreased and PCD was removed on same admission. Biliary stent was removed later on. Among patients without drain no one developed bile leak. Conclusion: Abdominal drain placement in donor hepatectomy should be individualised. Routine abdominal drain placement is not very helpful for early detection of complications.

L30
Liver regeneration in donors after living related liver transplantation: Prometheus revisited. Rajvilas Anil Narkhede, Vijaykumar C Bad, Balbir Singh, Venugopal Kota, Vivek Aery, Mohamed Rela, Global Hospitals, Hyderabad

Aim: Single centre adult right lobe liver donors were analyzed for the factors predicting liver generation in post donation period. Methods: Twenty six subjects undergoing right lobe hepatectomy for living related liver transplant were prospectively studied for postoperative liver regeneration (at 6 weeks). Variable preoperative (demography, preoperative investigations), intra-operative (remnant liver volume, blood loss, peak lactate fat fraction) and postoperative factors (serum phosphates, lactate, platelets, PT-INR, liver function tests) were compared to the CT volumetrically calculated liver regeneration. Follow-up till post operative 3 months was the endpoint of the study. Results: The mean graft regeneration in 26 donors was 806 112 gm (regeneration) with mean liver regeneration (LR = liver regeneration compared to standard liver volume) of 65 8.2% from RLV (remnant liver volume) of 35.5 8%. Donors were divided into donors with higher regeneration (group DH with LR > 60%) and donors with lower regeneration (group DL with LR < 60%). The LR for females was significantly higher than males (70.7% Vs 61.7%; p = 0.008) while for those with BMI <22.9 Kg/m2 was significantly lower than donors with BMI > 23 Kg/m2 (p = 0.024). The peak intra-operative serum lactate < 4.8 mmol/L (68.28 7.9% Vs 59.7 8.3%; p = 0.02), early normalization of postoperative serum lactate (68.2 6.5% Vs 59.6 8.3%; p = 0.01) had positive correlation with LR. Donor group DH, compared to group DL, had higher RLV (37.6 8.1% Vs 30.8 5.8%; p = 0.04), low peak intra-operative lactate (2.53 0.9 mmol/LVs 3.68 1.7mmol/L; p = 0.033), early normalization of postoperative serum lactate (83% Vs 12.5%; p = 0.001) and lower serum phosphate levels (1.720.4Vs 2.210.5; p = 0.014). However, serum triglycerides, blood loss, postoperative liver function tests including peak biliruiin, platelet counts and postoperative complications were comparable in both groups. Conclusion: Liver regeneration is better in female donors whereas it was significantly lower in patients with BMI < 22.9 Kg/m2. Intra-operative serum lactate and delayed normalization of postoperative serum lactate was found to be associated with poor liver regeneration. Postoperative hypophosphatemia is essential feature, correlated with increased metabolic phosphate demand for growing liver and should be supplemented.

L31
Impact of Portal Venous Hemodynamics on Outcomes after Major Hepatectomy. Subash K G, Saumitra Rawat, Suresh Singhvi, Deepak Chawla, Deeksha Rastogi, Sir Gangaram Hospital, New Delhi

Introduction: Major liver resection, defined by a removal of at least 3 anatomical segments, is increasingly being performed worldwide to treat malignant and benign lesions or to provide hemiliver graft in the setting of adult-to-adult living donor liver transplantation. Post hepatectomy liver failure accounts for half the cases of postoperative mortality and raised portal venous pressure is one of the important predictor of post hepatectomy liver failure. Allard et al did a retrospective analysis of 451 patients who underwent major hepatectomy and found that post hepatectomy portal venous pressure is an independent predictive factor of post hepatectomy liver failure. They concluded that a portal venous pressure >20 requires intraoperative modulation of portal venous pressure. Aim: The aim this study was to determine the impact of portal venous hemodynamics on outcome after major hepatectomy. Methods: A total of 51 patients underwent major hepatectomy at the Department of Surgical Gastroenterology and Liver Transplantation, unit II, Sir Gangaram Hospital between July 2014 and February 2016. All were donor hepatectomy. The data of all the 51 patients were analyzed prospectively. Portal vein pressure was measured intraoperatively by cannulating omental vein and connecting to transducer. The corrected portal pressure was calculated by subtracting portal vein pressure from central vein pressure. The corrected portal pressure was measured prior transection and post transection of liver. Patients were divided into 2 groups: group I with post transection corrected portal pressure => 7 mm of Hg and group II with post transection corrected portal pressure < 7 mm of Hg. The two groups were compared in terms of liver function test, coagulation profile, arterial blood gas analysis, ascites formation and liver regeneration. Results: There were 39 male donors and 12 female donors with male::female ratio of 3.55:1. The median age was 29
years with range between 18 and 48 years. There were 20 donors with post transection corrected portal pressure >= 7 mm of Hg and 31 donors with post transection corrected portal pressure < 7 mm of Hg. The remnant as percentage of total liver volume ranged from 28.3 to 61.75% with median remnant percentage of 38. Higher remnant weight and remnant as percentage of total liver volume were seen in patients who underwent Left hepatectomy. On arterial blood gas analysis done immediate postoperatively, there was statistically significant higher Serum Lactate (p=0.024) and Base Excess (p=0.0122) in Group I. However there was no statistically difference in blood Ph or Serum Bicarbonate and Base Excess (p=0.0122) in Group I. However there was no statistically significant difference in serum bilirubin, SGOT, SGPT, Serum albumin, PT-INR and Drain output on POD1, POD3 and POD7 in between the two groups. There was no statistically significant difference in the rate of liver regeneration in between the two groups. Conclusion: There is increase in the portal pressure after partial hepatectomy leading to transient postoperative liver dysfunction causing raised serum lactate and higher base excess level.

**L32**
Perioperative and Short Term Outcomes of Laparoscopic Hepatectomy of 41 consecutive patients from a tertiary care institute. Kailash Chandra Dhaker, Senthilnathan Palanisamy, Nalankilli Palanisamy, Anand Vijai Natesan, Srivatsan Gurumurthy, Senthil Anand Elavarasan, Sandeep C Sabnis, Palanivelu Chinnusamy, GEM Hospital and Research Centre, Coimbatore.

Aim: The aim of this study to analyze outcomes of laparoscopic hepatectomy done at our centre. Method: It is a retrospective evaluation of prospectively maintained data from 41 consecutive patients; who underwent laparoscopic hepatectomy for various benign and malignant lesions, between January 2012 upto March 2016. Result: Out of total 41 patients, 28 were males and 13 females with mean age of 59.3±16.2 years. Cirrhosis was noted in 21.4% (n=9). Twenty five patients (61%) underwent major hepatectomy (Right hepatectomy-31.7%, left hepatectomy–29.3%) while left lateral sectorectomy in 9 patients (21.9%). Mean blood loss was186.46±187.22 mL with mean operating time of 242.07±77.77 minutes. Mean ICU stay was 2.58±1.68 days. Majority of resections (70.7%) were performed for malignant lesions (n=29), among which hepatocellular carcinoma accounted for 55.2% (n=16). Eight patients (19.5%) had major complications (Clavien Dindo Grade III to V). Median length of hospital stay was 9 days (range 5-21 days). Resection margins were more than 2 cm in majority (51.7%) of resections for malignancy. only 13.8% (n=4) resections for malignancy achieved less than 1 cm margin. On multivariate analysis, CTP score (p = 0.049), operating time (p = 0.007) and Clavien-Dindo grade (p=0.049) were found to be statistically significant with hospital stay. We have 2.4% mortality Mean follow up was 20.48±14.2 months. Conclusion: Laparoscopic hepatectomy for benign as well as malignant pathology is feasible and safe as there was no major intraoperative adverse events, in experienced centre with skilled surgeon.

**L33**
Surgical anatomy of arterial supply of segment 4 of the liver: A cadaveric study. Hemanth Kumar, Shallu Garg, Thakur Deen Yadav, Daisy Sahni, Rajinder Singh, PGIMER, Chandigarh.

Introduction: Evaluation of arteries supplying segment 4 (S4) is critical and have an impact on pre-procedural planning during split and living donor liver transplantations and trans-arterial therapies for malignant liver lesions. Methods: Dissection on 100 cadaveric liver specimens was performed to evaluate the arterial anatomy of S4 of the liver. Results: The variant patterns of artery to S4 were classified in relation to its source of origin, number, course and arterial configuration of liver (standard or aberrant). In the present study, the hepatic arterial branch to S4 were classified into three major categories based on its site of origin from the hepatic arterial system: extrahepatic segment 4 artery (eA4, hilar origin of S4 artery, 59%), intrahepatic segment 4 artery (iA4, S4 artery originating in umbilical fissure, 18%) and middle hepatic artery (MHA, artery to S4 directly originating from common or proper hepatic artery CHA/PHA, 10%). The eA4 was first order branch of left hepatic artery (LHA, 35%) or right hepatic artery (RHA, 24%), iA4 originated from normal LHA (10%), replaced LHA (4%) or segment 3 branch of LHA (4%) and MHA was always a direct branch of normal CHA/PHA with hepatic arterial configuration of liver being standard in 2% and aberrant in 8% of these livers. The artery to S4 was dual in 11% and triple in 2% livers. Conclusions: The present study provides the detailed description and a concise nomenclature of the arterial anatomy of hepatic S4 and its clinical implications.

**L34**

Introduction: Budd-Chiari syndrome (BCS) is a group of disorders caused by occlusion of the major hepatic veins or the inferior vena cava (IVC) or both at or near the level of the hepatic vein ostia. Surgical decompression by a portosystemic shunt in Budd-Chiari syndrome depends on the caval state. A mere portocaval shunt was not
feasible because of a large pressure gradient across the intrahepatic stenosis which leads to reduced blood flow across the shunt and subsequent thrombosis. Similar risks are encountered in more complicated operations such as mesoaerial or cavo aerial shunt. We report our experience of a two-stage procedure with preoperative radiological dilatation and stenting of the narrowed intrahepatic IVC followed by a portocaval shunt. **Methods:** This is a retrospective study of surgical management of chronic BCS done at Osmania General Hospital, Hyderabad from 2008 to 2016. All clinically suspected chronic BCS patients underwent Doppler ultrasonography, Triphasic CT Abdomen, IVC gram and pressure studies. We did IVC stenting whenever IVC stenosis is associated with significant pressure gradient between supra hepatic IVC and infra hepatic IVC followed by portocaval shunt after 2 weeks. Uncovered metal stent for IVC and 2 cm diameter Dacron graft for portocaval shunt were used. All patients received anticoagulation. **Results:** A Total 14 number of patients were analysed. There are 3 Male patients and 11 female patients. The median age of presentation was 24 years with a range from 21 years to 65 years. 5 patients had only Hepatic veins block, 2 had IVC block and 7 patients had combined IVC and Hepatic veins block. 1 patient presented with acute Budd chiari syndrome due to IVC thrombosis treated medically. 13 patients presented with chronic BCS were treated surgically. IVC stenting and Porto caval shunt was done in 5 patients, only portocaval shunt in 3 patients, combined porto caval and cavoatrial shunt in 1 patient, only IVC stenting in 2 patients, Antesitum hepatic veins and IVC reconstruction with insitu hypothermic perfusion of liver in 1 patient and 1 patient underwent deceased donor liver transplantation due to hepatic decompensation. 30 day operative mortality was nil. 1 had chylosus ascites, 2 patients had shunt induced encephalopathy responded conservatively. One patient developed thrombosis of cavo atrial shunt after 40 days of surgery and died. Shunt was patent in the rest of cases. Long term follow up is 8 years. **Discussion:** Porto caval shunt will not work when a large pressure gradient exists across the intrahepatic IVC stenosis. Long shunts like cavo atrial or Meso atrials shunts get thrombosis easily. We used 2 stage procedure of IVC stenting and porto caval shunt to address above issues and achieved long term shunt patency rate. Very few case reports were described in the medical literature about this type of management.

**L35**


**Introduction:** Based on internal audit and experience of others, our live donor liver transplant (LDLT) technique has undergone continuous evolution over the last decade to ensure perfect infl ow, outflow and biliary drainage in the graft and remnant livers. We reviewed era-wise surgical complications in the context of the techniques used. **Methods:** 1245 consecutive primary LDLTs were performed from June 2010. This cohort was divided into 3 groups of 400/400/445 LDLTs. While there was no watershed between the groups in terms of technique, significant changes were as follows: donor-infra-hepatic IVC was slung early as safety measure from case 351, fibrin glue use on remnant cut surface until case 780, MHV taken with right lobe graft if remnant volume >35% until case 820, then only on the basis of clamp test of seg IVB vein (irrespective of remnant volume), seg 5/8 hepatic veins initially kept open until the end, but later ligated as encountered (from case 899). In recipient, porta-first dissection was used from case 332, caval side-clamping for implantation was initially used for renal compromised recipients only, but later where possible (case 1002 onwards), all accessory inferior hepatic veins (AIRHV)>4 mm were anastomosed, but later (case 712 onwards) those >2 mm were anastomosed, boat grafts used for multiple AIRHV from case 695, surgical loupes used more from case 845 (94% vs 99%) for hepatic arterial anastomoses. **Results:** Donor re-exploration rates (1, 1.5 and 1.4%) & biliary complications (1.2, 1.2, 1.4%) were similar between eras. Clavien grade I, II donor complications were 40, 48 and 28% (p>0.001), and Grade III, IV complications were 2.2, 2.5, 2.6% in eras 1, 2 and 3, respectively. One donor died in era 2. Recipient HAT and PVT rates were similar, whereas HVT (0.5, 0.5, 0.28%; p= 0.002), re-exploration (6, 9, 4%; p=0.03), blood product usage (7, 4.4, 4.5 units, p<0.001), and biliary complications (13.1, rate 12.9, 8.6; p=0.026) were lower in successive eras. 3 and 12 month recipient survival in the 3 eras were 86%/87%/89% (p<0.001) and 83%/86%/88% (p<0.001) respectively. **Conclusion:** With evolution and simplification in surgical technique, donor and recipient complications have been reduced and recipient survival has improved over the last 1245 LDLTs.

**L36**


**Introduction:** The double equipoise of deriving maximal recipient benefit at the cost of minimal donor risk is central to the success of live donor liver transplantation (LDLT). Here
we trace the evolution and effect of our selection policies over the past 5 years. **Methods:** A total of 1245 consecutive primary LDLT were performed in the 5 year period from June 2010. Donor/patient selection were analysed in the context of donor morbidity and mortality (Clavien grade) and recipient 3 and 12 month survival. The cohort was divided into 3 eras of 400 (364 adults)/400 (356 adults)/445 (418 adults) LDLTs and the following preoperative parameters were studied: donor - age, BMI, fat <10% vs >10%, remnant volume, GRWR, ABO-incompatibility; and recipient: MELD, age, renal dysfunction, ACLF/ALF, age > 65 years, weight >100 kg, and recent infection. **Results:** Donors with >10% steatosis (3, 4.2, 5.7% respectively; p=0.035), > 1 graft hepatic duct (40, 39, 46%; p=0.05), ABO-i (1, 4, 8; p= 0.09), low remnant% (40, 31, 38; p< 0.001), and lower GRWR (1.05, 1.01 and 0.97; p< 0.001) were more in successive eras. Minor (Clavien grades I, II) donor complications were 40, 48 and 28% (p<0.001), and major (Clavien grades III, IV) complications were 2.2, 2.5, 2.6% (p= 0.92) respectively in eras 1, 2 and 3. One donor died in era 2. There were more recipients with renal dysfunction (14, 23, 28%; p< 0.001), and > 65 years age (3, 6, 13%; p= 0.01) in era 3. MELD scores, ACLF/ALF etiology, pre-transplant infection, overweight recipients were no different between eras. Recipient 3 and 12 month survival in the 3 eras were 86/87/89 (p< 0.001) respectively. **Conclusion:** With experience, donors with more steatosis, lower GRWR, lower remnants, more biliary anomalies and ABO incompatibility, and older recipients with renal dysfunction were selected. This expansion in selection criteria did not compromise donor safety and recipient survival continued to improve. The limits of expanding selection criteria and the likely beneficial effects on an intention-to treat recipient survival need to be defined.

**L37**

**Laparoscopic repair of Incisional hernia among donors and recipients after Living donor liver transplantation.**

**Rahul Saxena, S Goja, AN Rastogi, P Bhangui, V Vohra, AS Soin, Medanta- The Medicity, Gurugram**

**Introduction:** Incisional hernia is a known complication after living donor liver transplantation, with reported incidence in donors and recipients varying between 5-15% and 5-34% respectively. Obesity, presence of ascites, surgical site infection, immunosuppression and use of steroids are the known risk factors. **Methods:** This is a retrospective study of 1354 living donor liver transplants (LDLT) performed between June 2010 and June 2015 at Medanta Institute of Liver Transplantation and Regenerative Medicine, Gurgaon, India. 10 donor and 25 recipients underwent incisional hernia repair during the study period and their characteristics were analyzed. **Results:** The overall incidence of incisional hernia among donors was 0.74% and in recipients 1.85%. The median time for the development of incisional hernia after surgery was 38.5 months in donors (range: 6-115 months) and 24.5 months in recipients (range: 8-72 months). The mean age at the time of incisional hernia repair was 43.6 year in donors and 52.2 year in recipients. Nine out of 10 donors (90%) who developed incisional hernia were females whereas 80% (20) of the recipients developing incisional hernia were males. Pre-transplant ascites, presence of umbilical hernia and BMI more than 25 were seen in 9 (36%), 6 (24%) and 7 (28%) recipients respectively. Open mesh repair was done in 16 patients and laparoscopic mesh repair in 19 of the patients (5 donors and 14 recipients). Mean defect size was 56 cm² in donors and 72 cm² in recipients. Mesh used were Parietex™ (Covidien-Medtronic, MN) composite ventral mesh (30x20 cm, 20x20cm, 20x15cm, 15x15cm) and Proceed™ (Ethicon Inc, NJ) Surgical mesh (20x30 cm). Recipient hernias are frequently multiple, extending along both right and left limbs of the mercedes-benz incision requiring placement of two or more meshes, this was done laparoscopically in 6 of our 35 patients (17%). Mean operating time for laparoscopic mesh repair was 135 minutes in donors (range 105 - 195 min) and 205 minutes (range 105 - 375 min) in recipients. In contrast, mean operating time for open mesh repair was 150 min (range 65 - 240 min). Postoperative complications following open hernia repair included seroma formation in one patient. Two patients in the open group had wound sepsis (both managed conservatively) and none in the laparoscopic group. Following laparoscopic repair, one recipient developed colonic perforation. On exploration erosion of tacker into transverse colon was found and patient was managed with closure of perforation and proximal diversion (ileostomy). Mean hospital stay after laparoscopic hernia repair, excluding the patient with colonic perforation, was significantly shorter (2.1 days; range 1-4 days) than open mesh repair (3.6 days; range 2-5 days). There was no recurrence of hernia during a median follow-up period of 12 months. **Conclusion:** Laparoscopic mesh hernioplasty is the standard of care for incisional hernia in both donors and recipients even though defects being multiple and bigger in size, requiring sometimes multiple meshes.

**L38**

**Does Outcome of Liver Transplantation in Post Kasai Biliary Atresia (BA) Differ from Non Operated BA Cases?**

**Rohan Chaudhary, Rahul Roy, Neelam Mohan, Chhaya Kumari, Amit Rastogi, Sanjay Goja, Prashant Vitas Bhangui, Vijay Vohra, Arvinder Singh Soin, Medanta-The Medicity, Gurugram**

**Introduction:** Sequential strategies combining Kasai operation as first-line treatment and liver transplantation as second-line option, if necessary, have been accepted for patients with biliary atresia (BA) which is one of the commonest diagnosis leading to Living related liver
transplantation (LDLT) in children. We hypothesized that previous operation can result in difficulties during the LT. **Aim:** The aim of this study was to review our experience in LDLT for biliary atresia (BA) in children, compare the outcome, complications, survival in patients who had LT with / without prior Kasai. **Methods:** Prospectively collected data of LDLT in children from Sept 2004 to August 2015 were analysed. The cases were divided into two groups: Group A - BA with previous Kasai PE; Group B: BA without previous Kasai PE. Primary outcomes were patient and graft survival. The short and long term complications and outcome were compared in both the groups. **Results:** 166 LDLTs were performed during this period. There were total 58 BA patients of which 38 were post-Kasai. Children in the Group A - 38 (65.5%) were older (40 months (5-156 months)) with M:F ratio of 20:18, mean weight 13.3 Kg (4.2-41 Kg). Mean Pediatric End-Stage Liver Disease (PELD) scores of 18 (7-37). In Group B (20), mean weight was 7.9 Kg (4.8-10.9) and mean age 10.9 months (4-24 months) and mean PELD 25.5 (11-37). 92% of patients in grp A and 90% in grp B required intraop BT. In comparison to Group B, group A had significantly more complications (7(19%) on the result. Of patients with lymphadenopathy due to metastasis, and 8% patients with lymphadenopathy in prospective LT recipients with HCC, and its impact on patient management. **Methods:** Prospective study from January 2013 to January 2016 at a tertiary care centre in India. All patients with HCC on initial imaging underwent a whole body FDG-18 PET-CT scan and radionuclide bone scan to rule out extrahepatic disease. Those patients with no other extrahepatic disease except for enlarged (usually > 1 cm) abdominal or mediastinal lymph nodes underwent EUS guided FNA. INR >1.5 or platelets <50000/cmm were cut-offs for need of fresh frozen plasma or platelet transfusion before EUS. **Results:** EUS guided FNA was performed in 50 prospective LT recipients with HCC; 42 had abdominal, and 8 had mediastinal lymphadenopathy. Median age of the patients was 57 years (range 53-62), 40 were males (80%). FNA provided a diagnosis in 92% patients; metastasis in 15 (30%, 14 nodes at porta, 1 mediastinal), granulomatous lymphadenopathy in 4 (8%, all abdominal, three had tuberculosis) and reactive change in 27 patients (54%). The material was inadequate for diagnosis in 4 patients (8%). One patient had slight mucosal ooze from FNA site which was managed conservatively. Thus, EUS guided FNA precluded transplantation in 30% of patients with lymphadenopathy due to metastasis, and 8% patients received anti-tubercular therapy before LT based on the result. **Conclusion:** In prospective LT recipients with HCC and concurrent lymphadenopathy, EUS guided FNA is safe, accurate, and can alter management in up to one third of patients.

**L40**

**Rare tumors of liver- Experience of tertiary care centre.**

**Abdul Rehman, Madras Medical College, Chennai**

**Aim:** The aim of this study is to analyze the clinical presentation, surgical management, outcome of uncommon liver tumors in a tertiary care center. **Methods:** This is a retrospective study design between January 2013 to August 2015. The study includes 17 patients. Male 11, female 6. The age group ranged between 13-74 years. The study excluded common indications like Primary hepatocellular carcinoma and Colorectal liver secondaries. The factors analyzed were Demographic profiles, clinical presentation, investigation, type of liver resection, associated surgical procedures, perioperative morbidity and mortality. The liver tumors were Biliary cystadenoma 3, Adenomatosis 1, Angiomyolipoma 1, Lymphoma Stomach with liver infiltration 1, Adult Hepatoblastoma 1, Embryonal Rhabdomyosarcoma 1, Intrahepatic cholangio-carcinoma 1, Primary liver carcinoid 1, Metastatic Liver GIST 3, Metastatic Neuroendocrine tumor 3, Mixed hepatocellular and intrahepatic cholangiocarcinoma 1. The liver resections performed were Right Hepatectomy 6, Left hepatectomy 2, Left lateral segmentectomy 4, Nonanatomical (Right) Liver resection 1, liver biopsy 1, segment IVb, V, VI excision 1. **Results:** The morbidity were wound infection 1, Transient
elevation of INR 4, persistent elevation of INR and Bilirubin 1, seizures 1 and bile leak in 1 patients. One patient died due to carcinoid crisis and other due to posthepatectomy liver failure respectively. Conclusion: Rare tumors must be kept in mind in all SOL Liver and have to be investigated thoroughly. GIST and embryonal Rhabdomyosarcoma mimic like hydatid cyst. In adolescent age groups, lesions like Embryonal Rhabdomyosarcoma and Hepatoblastoma have be kept in mind. Biliary cystadenomas mimic like simple cyst of liver and can be managed effectively with liver resection in a high volume center. These tumors occur mostly in non-cirrhotic liver and have better prognosis.

L41
Post Liver Transplant Recurrence In Patients With Hepatocellular Carcinoma: Not Necessarily The End Of The Road! Sanjay Kumar Yadav, Prashnat Bhangui, Sanjay Goja, Amit Rastogi, Arvinder Singh Soin, Medanta, The Medicity, Gurgaon

Introduction: Tumour recurrence after liver transplantation (LT) in patients with hepatocellular carcinoma (HCC) is the major determinant of long term survival in them. Management of post-LT HCC recurrence to try and prolong survival is challenging. Methods: Of the 2077 LT’s performed by our team till date, 330 were performed in patients with HCC. We accept HCC patients for living donor liver transplantation (LDLT) irrespective of tumour size and number, in the absence of extrahepatic disease and major vascular invasion; UCSF criteria are followed for deceased donor LT. We analysed patient and tumour characteristics, and outcomes using multimodality treatment strategies for managing HCC recurrence post-LT. Patients were treated with either sorafenib alone, or in combination with surgery (scar site or liver lesion resection or video assisted thoracoscopic surgery [VATS] for lung lesions), ablation (transarterial chemoembolisation [TACE] or radiofrequency ablation [RFA]) of liver or lung lesions, or radiotherapy for bone or lung recurrence. The post-LT and post-recurrence survivals were calculated using the Kaplan Meier method. Result: Post-LT HCC recurrence rate in our series was 17.27% (57 of 330 patients). The risk factors for recurrence on multivariate analysis were tumours beyond UCSF, preop AFP > 200 ng/ml and microvascular invasion. UCSF, preop AFP > 200 ng/ml and microvascular invasion. The mean age of study population (n=57) was 53 years, 90% were males, and HBV cirrhosis (in 36%) was the most common etiology for liver disease. The most common sites of recurrence were lungs (36.8%), liver (31.6%), and bone (21%). All patients with recurrence were put on sorafenib, it was tolerated well with dose adjustment in 75% of patients. In addition, 5 patients received radiotherapy, two underwent TACE, one underwent VATS, two each had a scar site or liver recurrence resection, and two each had ethanol injection in lymph nodes and RFA of lung lesions. The mean follow up post-LT in the 57 patients was 30 months (range 2.5 to 118 months). 1-yr and 3-yr overall survival (OS) after LT were 86% and 36%, respectively. After recurrence, 1-yr OS was 44%, and mean survival was 12.2 months (range 2 to 63 months). As regards treatment modalities used post-recurrence, patients who received only sorafenib had inferior OS compared to those who received sorafenib along with other modalities including surgery, ablation or radiotherapy (1yr/3yr OS 81%/29% in the former vs 100%/59% in the latter group, p=0.02). Similarly post recurrence survival in sorafenib-only group was significantly inferior to those who received multimodality treatment (1yr/3yr OS - 35%/6% vs 70%/31%, p=0.01).

Conclusion: Recurrence post-LT in patients with HCC was low in our series. Even after recurrence, use of multimodality treatment allowed further prolongation of survival, which calls for an aggressive approach to treat HCC recurrence in these patients.

L42
Biliary Complications in Living Donor Liver Transplant–Our Experience. Vibha Varma, Shailesh Sable, Sorabh Kapoor, Kapildev Yadav, Diptiman Roy, Gaurav Mehta, Subhash Agal, Vinay Kumaran, Kokilaben Dhirubhai Ambani Hospital, Mumbai

Introduction: Biliary complications (BC) following living donor liver transplant (LDLT) continues to remain a cause for morbidity. The reported incidence of BC is between 8.9 to 40%. We present our experience of BC following LDLT. Methods: Prospectively maintained database of LDLTs performed from March 2013 till March 2016 was analysed for BC (bile leaks-BL, biliary stricture-BS, combination-BLBS, and biliary stone). Data was analysed for the incidence, timing (early BC<90 days and late >90 days), demography of patients with BC, number of ducts, type of anastomosis (duct to duct-DDA or Roux-en-Y), and their outcomes. Results: Out of 118 LDLTs performed during this period, 29 (24.5%) recipients had BC (BL-13, BS-8, BLBS-7, and stone-1). Eighteen (15.25%) had early BC and 11 (9.32%) had late BC. Male to female ratio was 20:9; mean age was 41.21±13.06 (range 10-61 years). The mean follow-up was 18.56±12.60 (range 3-39) months. Of those with BC, 25 had received right lobe graft, 2 had left lobe, 1 had dual lobe (right and left lobe), and 1 had left lateral segment graft. BC were seen in 24 of 98 (24.4%) patients with DDA as compared to 5 of 21 (23.8%, p=NS) with Roux-en-Y reconstruction. BC were seen in 4/34 (11.7%) grafts with single duct as compared to 20/65 (30.7%, p=0.0479) with double duct, and 5/17 (29.4%, p=0.0365) with 3 ducts. Hospital stay for recipients with BC was significantly longer [29.15±11.38 (range 15-52) days] as compared to those without BC [23.9±8.64 (range 10-46) days, p=0.0168]. Readmissions were also significantly more in those with BC (20/26, 77%) compared to those without BC (17/74, 23%, p=0.0001). Major complications (Grade
Introduction: Liver transplant (LT) in recipients with active tuberculosis (TB) is generally considered a contra-indication; while LT is life saving in patients presenting with fulminant hepatic failure (FHF) due to anti-tubercular (ATT) drugs. The need for prophylactic ATT in recipients with past history of TB. Granulomas on explant liver/donor liver biopsy, does not mandate treatment with ATT in our country. Treatment needs to be individualised in these patients.

Conclusion: Incidence of BC in our series of LDLT was 24.5%. BC was significantly more in grafts having more than one duct and this led to increased hospital stay and readmissions. A quarter of patients had self limiting BL and majority resolved with non surgical interventions.

L43
Tuberculosis and Liver transplant– Treatment dilemma. Vibha Varma, Shailesh Sable, Sorabh Kapoor, Kapildev Yadav, Gaurav Mehta, Subhash Agal, Vinay Kumaran, Kokilaben Dhirubhai Ambani Hospital, Mumbai

Introduction: Liver transplant (LT) in recipients with active tuberculosis (TB) is generally considered a contra-indication; while LT is life saving in patients presenting with fulminant hepatic failure (FHF) due to anti-tubercular (ATT) drugs. The need for prophylactic ATT in recipients with past history of TB. Granulomas on explant liver/donor liver biopsy showed granulomas, Group-V-recipients developing TB post-transplant, and Group-VI-included the donors who were diagnosed to have TB. We analysed the organ involved, the treatment received/given in the peri-transplant period, and their outcome on follow-up (incidence of recurrent/new onset of TB).

Results: Eighteen (14 recipients/4 donors) of 130 LTs performed, formed the study group. Organ involvement was lymph node (2) and pulmonary/abdominal (1) in Group-I; pulmonary (1), pulmonary/abdominal (1) in Group-II; Pulmonary (4), abdominal (1) in Group-III; Hepatic (5) in Group-IV (recipient-2, donor-3); Pulmonary (2) in Group-V; pulmonary (1) in Group-VI (living donor). Group-I received ATT for 1 month, 2 months, and 6 months prior to LT, post-LT, they received modified ATT, in Group-II one did not tolerate ATT, while the other received 2 months of ATT prior to LT and 18 months post-LT. Group-III all except had received ATT in the past and no prophylaxis was given, none had relapse/new onset TB. Group-IV no one was treated or given prophylaxis for hepatic granulomas, except one recipient who had pulmonary TB also and was treated for 6 months. Two patients in Group-V got TB 5 months and 6 months post-LT, had no risk factor for developing TB, one presented with fulminant pulmonary sepsis (post treatment of acute cellular rejection) and BAL grew Mycobacterium, she succumbed in that episode of multi-organ failure, other patient was treated for 9 months, had retransplant 3 years later and died 2 years post-retransplant of unrelated cause. Group-VI donor received 6 months ATT for pulmonary TB post-donor hepatectomy. Prophylactic ATT was not given to anyone, and 16/18 patients are alive with no recurrence or new onset TB.

Conclusion: Contrary to the general belief, LT in recipients with active TB does not lead to flaring up of disease. Prophylactic ATT may not be required in recipients with past history of TB. Granulomas on explant liver/donor liver biopsy, does not mandate treatment with ATT in our country. Treatment needs to be individualised in these patients.

L44

Introduction: There exists conflicting data on the effect of Body Mass Index (BMI) on morbidity and mortality of patients undergoing Living Donor Liver Transplantation (LDLT). This study was designed to analyze the impact of extremes of BMI on outcomes following LDLT.

Methods: Prospectively collected data of 942 consecutive primary adult LDLT cases since 2011 were retrospectively analysed. Patients were stratified according to WHO BMI categories: underweight (<18.5 kg/m^2), normal weight (18.5-24.9 kg/m^2), overweight (25.0-29.9 kg/m^2), obese (30.0-34.9 kg/m^2), and morbidly obese (>35.0 kg/m^2). Underweight and morbidly obese were the study groups and normal weight being the control group. The primary outcome was evaluation of patient survival and secondary outcome being assessment of postoperative morbidity. Statistical analyses of variables were done using Cox Proportional Hazards method and survival using Kaplan-Meier curves.

Results: Out of a total of 942 patients: 27 (2.8%) were underweight, 894 (95%) standard, and 21 morbidly obese (2.2%). The sepsis rates were significantly higher in the morbidly obese (61.9%, p < 0.01) and underweight recipients (55.6%, p < 0.01) versus the normal-weight recipients (29.3%). The mean hospital stay was longer for the underweight recipients (27 days, p < 0.01) versus the normal-weight recipients (16 days). The morbidly obese patients had longer mean ICU stays than the normal and underweight patients (10.1 days versus 6.8 days versus 7.5 days, p < 0.01). The 30 days mortality was higher in morbidly obese (19%) versus normal weight (9.1%) (p < 0.001) but not in underweight group (7.4%) (p > 0.05) and...
the 90 days mortality was higher in both morbidly obese (30.8%) (p < 0.01) and underweight (22.7%) versus the normal weight group (13.8%) (p < 0.01). 1-year survival rate was significantly lower in morbidly obese (71%) and underweight (77%) in comparison to the normal weight (87%) (p < 0.01). Conclusion: Underweight and morbidly obese patients had significantly increased morbidity in terms of sepsis and consequently longer ICU and hospital stays after LDLT. These groups also had a significantly lower rate of survival.

**L45**

**Alpps For Liver Malignancies: First Ever Indian Case Series.** Jagadeesh Krishnamurthy, Adithya V Naragund, Basant Mahadevappa, HCG Hospitals, Bangalore

**Introduction:** The new two-stage liver resection combining insitu liver transection with portal vein transection, usually termed associating liver partition and portal vein ligation for staged hepatectomy (ALPPS) procedure is described as a promising method to increase resectability rates in patients with marginally resectable or locally unresectable liver tumors. An impressive and rapid hypertrophy (22% per day) of the future liver remnant (FLR) is reported. **Aims:** A total of 17 cases underwent two staged ALPPS procedure over three years (2013-2016) for cases of Hepatocellular carcinoma, Cholangiocarcinoma, Neuroendocrine tumour & Colorectal Liver metastasis. We studied the increase in Future liver remnant (FLR) volume, time required for 2nd surgery, Post hepatectomy liver failure was accessed using ISGLS criteria & overall survival. **Results:** Out of the total 17 patients, five were operated for colorectal metastasis, four had neuroendocrine tumour liver metastasis, two had cholangiocarcinoma & six had hepatocellular carcinoma. The increase in FLR was in the range of 10% to 16% of Total liver volume. Time duration required for second surgery was between 4–26 days. Post hepatectomy liver failure (ISGLS criteria) was seen in three cases all being grade-A. Overall survival of upto 36 months was achieved. We also noticed patients with Hepatocellular Carcinoma took longer time for the increase in FLR after stage one compared with Colorectal Liver metastasis patients. One patient underwent complete Robotic stage-1 ALPPS for Colorectal liver metastasis. **Conclusion:** ALPPS is a safe procedure proven its efficacy worldwide for the patients with low FLR, fatty liver, & with high risk for post hepatectomy liver failure. This gives a new lifeline to those patients undergoing major liver resections for potentially unresectable tumours. It gives an extra advantage over portal vein embolisation which usually takes minimum upto three weeks for increase in FLR volume with high chance of disease progression. Compared to our case series we have done the second stage ALPPS as early as after four days post stage one with sufficient FLR due to faster hypertrophy. Since radiation & chemotherapy induced Liver toxicity is also on the rise; ALPPS will provide a new ray of hope for all advanced liver malignancies.

**L46**

**Intraoperative transfusions – How much & what product as predictor of post transplant infections & outcome especially in pretransplant infection naive patients.** Thiagarajan Srinivasan, Vikram Raut, Ragavendra Babu, Sanjay Goja, Vijay Vohra, Arvinder Singh Soin, Medanta The Medicity, Gurugram

**Aim:** To analyze the effect of intraoperative transfusions (volume & product type) in patients with post living donor liver transplant (LDLT) infections & outcome (conflicting previous reports) with specific interest in pretransplant infection naive recipients (no previous report). **Methods:** Retrospective analysis of prospective database of LDLT patients from Jan 2014 to Feb 2015. Data included intraop blood & blood products transfusion, patient characteristics, surgical details, preoperative variables for intraoperative bleed, post & pre LT infection characteristics, complications & survival. Statistics included Cox’s proportional hazards & propensity score-adjusted analyses for transfusion to control for selection bias. **Results:** n=355. The median intraop requirement of PRBC was 4 units (U). Preop variables renal dysfunction (Cr>1.2) (p<0.04), INR>2.5 (p<0.003), platelet <38000/ mmcube (p< 0.024), Hb<7.5 g/dl (p<0.001) were independent risk factors of massive intraop transfusion(PRBC>4U) in multivariate analysis but not MELD score (p<0.087) or CTP status (p<0.097). 68.2% were preLT infection naive (Rest were treated to clear their infection atleast 5d before LT) & 44% had clinically significant postLT infections. In all patients, intraop PRBC transfusion>8U (p<0.008), intraop SDCP>2U (p<0.010), preLT renal dysfunction (p<0.003), preLT ICU admission (p<0.034) were independent risk factors for postLT infection in multivariate analysis. In preLT infection naive (n=242), intraop PRBC>5U (p<0.001) & any SDCP (P<0.022) were independent risk factors of posttransplant infections. Intraop PRBC>4U was risk factor for post LT intraabdominal infections (25% vs 46%) (p< 0.032), >7U for pneumonia (12% vs 35%) (p<0.008) and >8U for blood stream infections (21% vs 39%) (p<0.021). The overall inhospital mortality was 10% and 1yr survival was 87%. Higher incidence of early graft dysfunction (p<0.033) & intraabdominal complications (p<0.043), longer mean ICU stay (6.6 d vs 4.2 d) (p<0.002), postop renal dysfunction (p< 0.011) & higher inhospital mortality (32% vs 8.5%) (P<0.023) were found in patients with both intraop PRBC>11U & SDCP > 2U vs without. **Conclusions:** Massive intraop blood (>5U) and any platelet transfusion in preLT infection naive patients predicted posttransplant infections (signalling a causal association). Massive transfusion of both blood and platelets predicted postop mortality and morbidity.
L47
Outcomes In Relation To Graft To Recipient Weight Ratio (GRWR) In Living Donor Liver Transplant (LDLT) Recipients. Pushpendra Kumar Naik, Naimish Mehta, Shailendra Lalwani, Vivek Mangla, Siddharth Mehrotra, Samiran Nundy, Sir Gangaram Hospital, Delhi

Introduction: The problem of graft size is one of the critical factors limiting the expansion of LDLT. Smaller size grafts can enhance donor safety and expand donor availability. Traditionally, studies in LDLT have reported that the small graft demonstrated poor graft survival and a minimum GRWR greater than 0.8% has been recommended to improve the graft survival and prevent early graft dysfunction. In contrast, some recent studies have shown no significant difference in graft survival or patient survival even in small grafts, with a GRWR of less than 0.8% or a graft volume/standard liver volume ratio of less than 40%. Thus, the safe lower limit of GRWR in LDLT remains undefined and controversial at best. We studied graft survival and recipient outcomes according to GRWR. Methods: Out of 234 liver transplantations done during the period from 1st January 2011 to 30th December 2015, 186 consecutive adult LDLT recipients were included in the study after excluding paediatric transplants, and those done for acute liver failure, combined liver & kidney and dual lobe grafts. This study retrospectively compared groups with GRWR greater than 0.8 (n=160) and GRWR less than 0.8 (n=26).

Results: Demographic data and baseline clinical profile was similar between both the groups. Mean CTP score was 10 and mean MELD score was 19 in both groups and ascites was the commonest form of decompensation followed by hepatic encephalopathy and hepatorenal syndrome. The actual mean graft weights (712.4 cc and 531 cc) and mean GRWR (0.98 and 0.69) were significantly different (P=0.001) between the groups. Ten patients had GRWR less than 0.8 detected on CT scan preoperatively. The cold and warm ischaemia times and duration of surgery were not statistically different but the anhepatic phase was shorter in group with GRWR less than 0.8 (192 minutes) than in group with GRWR greater than 0.8 (231 minutes) (P=0.001). The mean blood loss, blood transfusion requirement and ionotropic support were not different. The hospital stay was shorter in group with GRWR less than 0.8 (18.1 days) than in group with GRWR greater than 0.8 (16.6 days) (P=0.01). Small for size syndrome was significantly higher in group with GRWR less than 0.8 than in group with GRWR greater than 0.8 (P=0.02). Patient and graft survival at 1 and 3 months were not statistically different between the groups. Conclusions: This study showed non inferiority of liver grafts with GRWR less than 0.8 compared to grafts with GRWR greater than 0.8 in terms of graft and recipient survival, however there was increased incidence of SFSS in this study in recipients with GRWR less than 0.8. This study concluded that smaller graft with GRWR upto 0.7 was feasible with good results. Further studies are warranted to examine the factors affecting the function of smaller grafts and thereby define the safe lower limits for transplantation.

L48
Portal vein arterialization with Roux-en-Y bilioenteric anastomosis–a rescue technique for hepatic artery thrombosis after live donor liver transplantation. Sujeet Kumar Saha, Arvinder Singh Soin, Medanta, Gurugram

Introduction: Early hepatic artery thrombosis after liver transplant in the absence of early revascularisation is associated with high morbidity and graft loss. Emergency re-transplant is needed if radiological or surgical revascularisation fails. Portal vein arterialisation (PVA) is a potential salvage option that can re-establish oxygen delivery to the parenchyma. However, its role is unclear due to variability in preventing biliary complications and the possible occurrence of portal hypertension. We describe our experience with PVA in live donor liver transplantation (LDLT). Methods: Of 1545 LDLT between 2010-2016, 42 (2.7%) patients suffered hepatic artery thrombosis (HAT). Ten of these, in whom 2 attempts at re-vascularization failed, underwent PVA for early hepatic artery thrombosis (<14 days). Presence of overlapping arterial and venous flows in the portal vein was confirmed after PVA intra- and post-operatively by Doppler Ultrasonography (daily until discharge). Four patients had duct-to-duct (D-D) and 6 Roux-en-Y bilio-enteric (RY) anastomoses (2 converted at the time of PVA). Results: All patients were male, and 4 were children. Among children, 2 had biliary atresia (one post failed portoenterostomy) and 2 secondary biliary cirrhosis. Among adults, 2 had ethanol, one each hepatitis B, hepatitis C, NAFLD related cirrhosis with hepatocellular carcinoma, and one had autoimmune related acute on chronic liver disease. Two patients had associated pre-operative portal vein thrombosis (PVT) and six (60%) had high risk arterial anastomosis (defined as child <10 kg, size mismatch >2x, multiple anastomoses, arterial caliber <1 mm, micro-vascular reconstruction). Median time to HAT post LDLT was 4 days (1-15 days). Early salvage rates were 70% (3 patients– all with D-D– died due to sepsis). One patient (RY, no donor for re-transplant) died at 30 months from recurrent cholangitis due to sub segmental biliary strictures. At a median follow up of 10 months (6-36 months), 6 (60%) patients are well with normal liver function, and no clinical signs of portal hypertension. Four (66.6%) of these patients had anastomotic biliary stricture successfully managed with biliary stenting. Conclusion: Portal vein arterialisation with a RY bilio-enteric anastomosis is a reasonable salvage option in post LDLT HAT if other strategies of revascularisation fail, and re-transplantation is not feasible. The rate of biliary complications remains high in this group.
L49
Spectrum of surgical approach to liver hydatidosis- From simple de-roofing to liver transplant: A tertiary center experience. Anisha Tiwari, Sujeet Kumar Saha, Sanjay Goja, Arvinder Singh Soin, Medanta, The medicity, Gurgaon

Introduction: Hydatidosis caused by Echinococcus species (E. Granulosus, E. Multilocularis, E. Oligarthus), is mainly a hepatic disease comprising approximately 75% of the disease burden. Wide range of approach has been described right from medical management to the extent of liver transplant (especially for recurrent and complicated hydatid). Medical management is fraught with high failure and recurrence, so is the case with conservative surgical approach. Surgery in the form of hepatic resection remains the main stay of treatment with high success rate. Similarly surgical resection and liver transplant are only available options for alveolar echinococcal disease (AED). Methods: Retrospective review and analysis of prospectively maintained database was done from 2010 to May 2016 at Institute of liver transplant and regenerative medicine, Medanta, Gurgaon. The study reports the spectrum of surgical approach to hydatidosis of liver and its outcome.

Results: There were total 25 patients, thirteen male and 12 female. Mean age was 30.96±15.11 year. Twenty one patients had Echinococcus granulosus and 4 patients had E. Multilocularis. Out of 25, nine patients had recurrent disease following various procedures done elsewhere (2 patients- PAIR, 2 patients - laparoscopic de-roofing, 3 patients-pericystectomy, one each right hepatectomy and right trisegmentectomy). Out of 21 patients with E.granulosus, 5 patients underwent de-roofing (3 open and 2 laparoscopic). Nine patients had cystopericystectomy (2 robotic and 7 open), central hepatectomy and left hepatectomy and right trisegmentectomy was done in one each, and 5 patients had right hepatectomy. Post operative complication on Clavien–Dindo scale (3 patients– grade I, 7 patients grade II and 3 patient Grade III). Out of 4 patients with alveolar echinococcal disease (AED), 3 patients underwent living donor liver transplant (LDLT), out of which one had recurrent disease in the remnant with left portal vein involvement and recurrent cholangitis post right trisegmentectomy done elsewhere. Similarly, 2 patients had diffuse hydatid involving entire liver and retro-hepatic inferior venacava (IVC), where in LDLT with retrohepatic (IVC) replacement was done. Fourth patient of AED had right lobe involvement with mass encasing hepatoduodenal ligament, duodenum, hepatic flexure and right diaghramp and underwent right trisegmentectomy with enbloc resection of hepatic flexure and right diaphragm. Mean follow up was 13.6±14.3 month. There was one recurrence at 14 month follow up in a patient who had undergone laparoscopic de-roofing and subsequently had right hepatectomy. Conclusion: Radical surgical procedure is safe and effective option for hepatic hydatidosis especially for complicated and recurrent disease. It eliminates if not reduces the chance of recurrence. Similarly, for AED, advanced stage at presentation makes curative resection difficult and liver transplant remains a good option.

L50

Introduction: Inherited metabolic disorders (IMD) that can be cured by living donor liver transplantation (LDLT) include those 1) where metabolic defect is in the liver with significant liver disease (Wilson's disease (WD), Tyrosinemia, Persistent familial intrahepatic cholestasis (PFIC), Alagille's syndrome, Protein C & protein S deficiency and Glycogen storage disorders); 2) non-structural diseases with normal liver function such as Primary hyperoxaluria (PH), Maple syrup urine disease (MSUD), Citrullinemia, Factor 7 deficiency, organic academia (OA) and urea cycle defects (UCD). Aims: To analyze the etiology and outcome in children undergoing LDLT for IMD. Methods: Pediatric LDLT from Sept 2004 to June 2016 were analysed for etiology, timing of transplant, and outcomes. Parents were accepted as donors for all IMDs except maple syrup urine disease (MSUD). Donors were parents in 40 (61%), grandparents in 5 (7%), close relatives in 17 (26%) and swap in 2 (3%) cases. In MSUD an altruistic and a swap donor was used. Results: 200 LDLT were performed on 197 patients. Of these 65 (31%) had IMD. The distribution of various IMDs associated with significant liver disease were as follows: WD-29, Tyrosinemia-13, PFIC- 10, Protein C/S deficiency- 3, Alagille’s syndrome-3 and GSD- 1. IMDs with nonhepatic manifestations included: Type 1 PH- 2, MSUD- 2, Citrullinemia- 3 and factor 7 deficiency- 1. Out of 65 patients with IMD, 25 presented with ACLF, 5 with ALF and 30 with CLD. Majority of patients with WD (86%) and tyrosinemia (38%) presented as ALF/ACLF. 23 (35%) of our patients received a left lateral segment graft (reduced 5 cases) whereas 30 (46%) left lobe & 10 (15%) right lobe grafts. Eight patients were less than one year old whereas 11 patients weighed less than 10 kgs. Both PH patients underwent combined liver and kidney transplant. One patient with Citrullinemia died of sepsis in the early post transplant period (< 30 days). Two patients with WD died of severe hemolysis and renal failure in early post-transplant period while 1 died of PTLD after 2 years. There were 4 biliary strictures that were managed with PTBD (3) and ERCP (1). Mean hospital stay was 23 days. Overall 1-year and 3-year survival was 94% and 92.6% at a median follow-up of 3.1 years. Conclusion: Metabolic liver diseases constitute 30% of our pediatric transplant patients and are the second commonest indication for LT in them. Liver
transplant for metabolic liver disorders in children requires multidisciplinary approach and carries very good outcome.

**L51**

**Hydatid Cyst Of Liver With Cyst-Biliary Communication–An Audit.** Ajit Kumar Mishra, Abishek Rajan, Anand Prakash, Anu Behari, Rajneesh Kumar Singh, Ashok Kumar Gupta, Vinay Kumar Kapoor, Rajan Saxena, SGPGIMS, Lucknow

**Introduction:** Hydatid cyst of the liver with cyst-biliary communication (CBC) remains a surgical management challenge. Bile leak following surgery of hepatic hydatid cyst with CBC is a troubling sequel. We retrospectively analysed the patients who underwent surgery for hepatic hydatid cyst with CBC. **Aim:** To identify the incidence, predictors, morbidity and mortality of bile leak following hydatid cyst surgery and to establish an appropriate management algorithm. **Methods:** A retrospective analysis of the records of 188 patients of hydatid disease of the liver in the department of Surgical Gastroenterology SGPGIMS Lucknow (A tertiary care centre in North India), who underwent surgical management between January 2000 – December 2015. **Results:** 75 of the 188 patients (35 male and 40 female, mean age 37 years [13-64]) had CBC (39.89%). Common presentation was abdominal pain (88%), Fever (34%), Jaundice (22%), Cholangitis (19%). Preoperative ERC was done in 18 and biliary drainage (PBD) was achieved in 16 (21%). Laparoscopic surgery was attempted in 13 (17.8%) with 6 requiring conversion to open because of the presence of CBC. Solitary cyst was present in 48 (64%). Average size of cysts with CBC was 11 cm (range 4 cm-35 cm). Cysts were located in right lobe in 36 (48%), left lobe 17 (22.6%) and bilobar in 22 (29.3%). Central location of cyst was seen in 47 (62.6%) and peripheral in 28 (37.3%). Intraoperative CBC was identified in 54 (72%), while 21 (28%) presented with bile leak postoperatively due to missed CBC. Multiple CBC was present in 27 (36%) and single in 48 (64%). 2 patients underwent hepatectomy, rest were managed with conservative surgery. Surgical procedure was tailored to the individual patient, which included cyst evacuation and partial cyst wall excision [n=73 (97.3%)], additional CBD exploration and T-tube placement [n=20 (26%)] and intraoperative pneumocholangiogram [n=43 (57%)]. Suture closure of CBC was done in 43 (57%). Indication for T-tube placement was central cyst location in 18 (90%) and multiple large CBC in 2c (10%). Postoperative bile leak was seen in 39 (52%). Postoperative intervention was required in 19 (25%) in the form of ERC and stenting (n=10), percutaneous drainage of biloma (n=5), and reoperation (n=4). 13 patients with PBD developed postoperative bile leak. Average time to fistula closure with PBD was 42 days (6-180 days). Bile leak was seen in 10 (28.5%) patients subjected to intraoperative pneumocholangiogram and simple suture closure of the CBC only (n=35), with a mean of 11 days (range 7-20 days) for fistula closure while those with additional T-tube placement took 18 days (range 3-168 days). Patients with postoperative ERC & stenting, mean fistula closure time was 50 days (range 8-180 days).

**Conclusion:** Large cyst size (>10 cm) and centrally located cyst have high incidence of CBC. Majority of hydatid cyst of liver with CBC can be managed with conservative surgery. Pnemocholangiography can be extremely useful for detection of CBC. Meticulous suture closure of CBC decreases bile leak. CBC is best tackled at operating table rather than relying on postoperative ERC.

**L52**

**Management Of Symptomatic Giant Hemangiomas- A Tertiary Care Center Experience.** Srinivasan Muthukrishnan, Rajendran Vellaisamy, Amudhan Anbalagan, Prabhakaran Raju, Bennet Duraisamy, Gnanasekar M, Kannan Devy Gounder, Madras Medical College, Chennai

**Aim:** The aim of this study is to analyse the clinical presentation, management modalities and outcomes of symptomatic giant hepatic hemangiomas in a tertiary care center. **Methods:** This is a longitudinal study design between Jan 2013 to Dec 2015. Only those cases of hemangiona liver who were persistenly symptomatic and with complications were included in this study. **Results:** A total of eleven patients with a median age of 40 yrs (range 22 to 60 yrs) and a female prediliction (90.9%) were listed in this series. There was no correlation with chronic OCP or exogenous hormonal intake. Majority of the lesions were in the Lt lobe (66.66%), supporting the fact that lesions in the left lobe are often symptomatic. The largest lesion measured 33x19x15 cm and weighed almost 5.2 kgs. There was a linear relationship between size and symptoms in this analysis, with over 90% of the patients becoming symptomatic when the lesion is over 15 cm with the predominant symptom being pain abdomen. All eleven patients underwent liver resections, which included Right Hepatectomy in three (3), Left hepatectomy in two (2), Left lateral segmentectomy in four (4) and nonanatomical resections in two (2). The morbidity in this series was wound infection in two and encephalopathy due to postoperative liver failure in one. There was one mortality in this series due to postoperative liver failure in a steatotic (>30%) liver.

**Conclusion:** The management of symptomatic giant hemangiomases of liver can sometimes be very challenging and requires a well-equipped center with multidisciplinary personnel for successful outcome.

**L53**

Introduction: Intrahepatic cholangiocarcinoma (ICC) is the second most common primary liver cancer. Most patients present at a relative late stage stage of the disease. Surgery is the most effective treatment of ICC. Methods: In the period from 2012-2015, 123 liver resections for hepatic tumors were performed. Of these, 17 (14%) were for Primary ICC. We performed left hepatectomy in 3 cases, extended left hepatectomy in 3, left trisegmentectomy in 5, right hepatectomy in 3, seg 4a sparing extended right hepatectomy in 2, nonanatomical resection of 4 segments in 1. Fourteen were open, 1 was laparoscopic assisted and 2 were total robotic hepatectomies. Pre-operative work up included CA19-9, PET-CECT triphasic liver study, bone scan, liver function assessment with HVPG, ICG, fibroscan, Mebrofenin liver scan, volumetry, remnant CT / MR fat estimation and biopsy. Results: Of these 17 patients, 6 were male (35%) and 11 were female (65%). The median age was 65.5 years (29–73). The median preoperative CA 19.9 was 180 (6-17600). PET CT triphasic whole body scan was 100% sensitive in diagnosing ICC. All ICCs were FDG avid with median SUV max of 11.4 (2.4-25.9). PVE was done in 2, TACE in 2 and PTBD in 2 patients preoperatively. Surgical planning was done based on CT volumetry (n=17), HVPG (n=9 patients), upper gastro endoscopy (n=10), SPECT functional studies (n=2), Liver attenuation index (n=7), MR fat estimation (n=2) and remnant liver biopsy (n=7). The mean OT time was 492±169.7 minutes (300– 840). The median blood loss was 500 ml (100-2500). The mean tumor size was 7.8±3.8 cm (3-15). Adjuvant Chemotherapy (Cisplatin plus gemcitabine) were given in 53% patients. The median postoperative Ca 19.9 at first follow up was 50 (5-300). 1 year, 2 year and 3 year overall survival was 72%, 54% and 36%. 1 year, 2 year and 3 year recurrence free survival was 69.8%, 50.9% and 34%. The median follow up was 26 months. Patients with tumor-free margin <5 mm (n=5) and >5 mm (n=10) had 3 year survivals of 20% and 80% respectively. The reason for attaining <5 mm free margin was proximity of the lesion to MHV or RHV, the resection of which would have compromised the remnant drainage or volume. Margin of <5 mm and >5 mm was a significant predictor of overall survival (p=0.032) and recurrence free survival (p=0.033). Based on primary tumor stage, pT1 had better overall survival and recurrence free survival than pT2a and pT2b. In univariate analysis, age and free margins were significant predictors of survival. Recurrences were intrahepatic (85%), associated with multiple tumors (57%) and occurred during the first 2 years after hepatectomy (85%). The main factor associated with recurrence after resection was the presence of satellite lesions. Conclusion: ICC are large tumors that are universally PET avid, often need meticulous preoperative remnant evaluation, and have a good prognosis as long as an R0 resection with a tumor-free margin of at least 5 mm can be ensured. pT1 tumors have better outcomes than pT2a and pT2b tumors.
Biliary tract

B1
Robotic Surgery for Sump Syndrome. Iyoob VA, Aster Medcity, Kochi

Introduction: Sump syndrome is a known long term complication following side to side choledocho- enterostomy. Resection of dilated bile duct and Roux-en-Y hepatico-jejunostomy is the definitive treatment for this condition, once endoscopic methods fail. Minimally invasive approach for this is rarely reported and the use of da Vinci Robot for this complex surgery is not reported so far. Methods: 52 year old lady who had undergone cholecystectomy and choledocho-duodenostomy (CDD) 22 years back now presented with Sump syndrome after failed endoscopic treatment. After clinical and radiological evaluation she underwent taking down of previous CDD, excision if lower CBD and Roux-en-Y hepatico-jejunostomy with the help of da Vinci Robot (Si). The procedure took 360 mts, blood loss was 100 mL. No bile leak noted in the post operative period and she was discharged on 6th Post Op day. Patient is asymptomatic after 3 months follow up.

Conclusion: da Vinci Robot is a useful tool for complex hepatobiliary procedures and bilio-enteric anastomosis and results similar to the open procedure can be achieved with the help of this advanced technology.

B2
Gall bladder carcinoma masquerading as colonic lesion. Sankar Narayanan, Sahil Bassi, Jagan Balu, Suresh Kumar, Rajshree Nair, Amandeep Singh Sandhu, Shankar Narayanan Perumal, Sankar Subramanian, Sri Ramachandra University, Chennai

Gall bladder carcinoma is an aggressive malignancy of the biliary tract. The incidence is found to be increasing in the recent times. Early diagnosis is essential for a better prognosis and the key factor in the surgical management that determines the outcome is to achieve an R0 resection. However in practice most of the cases presents at an advanced stage (locally/metastatic) as it does not cause symptoms. Locally advanced cases involves liver, bile duct, duodenum and colon which warrants multi organ resection to achieve R0 resection. Colonic involvement though well reported in carcinoma gall bladder, a primary carcinoma gall bladder presenting as a proliferative growth into the lumen of colon and presenting with anemia is extremely rare totally masquerading as a different disease. Our patient is a 38 yrs old female from west Bengal, admitted with complaints of abdominal pain and loss of appetite. CT done elsewhere showed a large mass of size 10x8 cms involving the fundus of gall bladder and hepatic flexure of colon with evidence of air pocket within the mass. Colonoscopy showed a proliferative/polypoidal growth involving the hepatic flexure obstructing the lumen. The pre operative diagnosis was locally advanced hepatic flexure growth infiltrating the gall bladder. At surgery there was a bulky growth in the hepatic flexure infiltrating the adjacent mesocolon, greater curvature of stomach and fundus of gall bladder. Tumour was tethered to the glissonian capsule of liver. So it was basically treated like a colonic growth by performing an en bloc extended right hemicolecctomy with cholecystectomy. Even the cut open specimen showed the same findings. To our great surprise the IHC panel revealed this to be a gall bladder malignancy as it was positive for CK 7, CDX2 and focally positive for CK 20. The situation was discussed with the patient and attenders regarding the need for a completion surgery (wedge resection of segment 5 and 4B of liver and lymphadenectomy of hepatoduodenal ligament) but refused by the patient, hence it was decided to treat the patient with adjuvant therapy at present and follow up after 3 months. Therefore atypical presentations requires a high index of suspicion and use of IHC stains in the pre operative biopsy specimen which can guide us plan the surgical treatment.

B3
Signet ring carcinoma gall bladder: Rare disease & rare presentation. Itisha Chaudhary, Maulana Azad Medical college, New Delhi

Introduction: Gall Bladder cancers are the 5th most common malignancy of Gastrointestinal tract with Conventional adenocarcinoma of Gall Bladder also referred to as pancreatobiliary type adenocarcinoma being most common malignancy of the hepatobiliary complex and Signet ring carcinoma being rarest and most aggressive variant. The Case: We present here a case of 70 year Indian man with Signet cell Adenocarcinoma of Gall Bladder. His presentation was of large bowel obstruction, due to stricture at hepatic flexure likely inflammatory in origin. Laparotomy done revealed firm thickened gall bladder with involvement of adjacent bowel with no evidence of metastasis. Right Hemicolecctomy, ileostomy and mucous fistula with cholecystectomy and CBD stenting was done. Histopathology confirmed the diagnosis and the patient refused for further treatment and died on 59th post operative day. Conclusion: Signet cell adenocarcinoma of Gall Bladder is rare entity with poor prognosis. Presentation as intestinal obstruction is the first time being reported till
date. Management guidelines and chemo therapy is still not much standardised due rarity of the condition.

B4 Aberrant Right Posterior Duct in a Choledochal Cyst: Management: A Case Report and Literature Review. Prasanna B, Venugopal HG

Choledochal cysts are congenital cystic or fusiform dilatations of the biliary tree that can involve the extrahepatic and/or intrahepatic biliary tree. We report a case of huge type IC type of choledochal cyst which was associated with an aberrant right posterior hepatic duct. A 65-year-old man presented with a 6-week history of right upper quadrant pain and on & off fever. His LFT was normal except ALP, which was raised. Ultrasonography (US) showed magnetic resonance cholangiopancreatography with the diagnosis of CC type IC according to Alonso-Lej and Todani classification. Intra-operatively an aberrant right posterior duct arising from segment 6 and 7 was noted. This duct was draining into the cyst separately below the cystic duct. The cyst was completely resected and the biliary tract was reconstructed with a double hepatico-jejunostomy using the same Roux limb. As the vascular and ductal aberrations are common one should anticipate the same and prepare to manage accordingly in any patient undergoing biliary surgery. Preoperative MRCP has a vital role in identifying such variations and helps surgeon to plan or modify surgery. Any suspicion of abnormal biliary anatomy intraoperatively should lead to on-table cholangiogram for confirmation of the anatomy. It is critical in preventing post operative bile leaks and strictures. Hence the preoperative MRCP is a low threshold for an intraoperative cholangiogram, in bile leaks and strictures. Hence the preoperative MRCP has a vital role in identifying such variations and helps surgeon to plan or modify surgery. Any suspicion of abnormal biliary anatomy intraoperatively should lead to on-table cholangiogram for confirmation of the anatomy. It is critical in preventing post operative bile leaks and strictures. Hence the preoperative MRCP and a low threshold for an intraoperative cholangiogram, in case of suspicion of any aberrant anatomy, are mandatory to assess the biliary tree morphology to prevent future catastrophies.

B5 Cholecystocolonic fistula: A report of 2 cases and literature review. Gunjan Shailesh Desai, Prasad Pande, Dattaprasanna Kulkarni, Lilavati Hospital And Research Centre, Mumbai

Cholecystocolonic fistula is a rare presentation amongst patients with cholecystoenteric fistula and its management requires a good preoperative diagnostic work up and a surgical approach tailored to manage the fistula site along with a cholecystectomy. A study of 2 cases of cholecystocolonic fistula is discussed here and a brief outline on its diagnosis and surgical management is highlighted.

B6 Choledochal Cyst In Adults: Rising Incidence Or Increased Detection. Nikhil Chopra, Prabhu Singh, Abhijit Chandra, Saket Kumar, Pradeep Joshi, King George Medical University, Lucknow

Introduction: Choledochal cysts are rare congenital lesions identified as cystic dilation of the biliary tree. Though it is commonly diagnosed in the childhood, increasing number of cases are being detected in adults as well. Aim: Aim of the study was to analyze the demographic and clinicopathological profile of adult patients undergoing surgery for choledochal cyst as well as their long-term outcome. Methods: Clinical data of 63 adult choledochal cyst cases managed in this department between January 2010 and February 2016 were analyzed. Results: The male:female ratio was approximately 1:3 and median age median age was 32 years (range, 12-62 years). Abdominal pain was the commonest presenting symptom followed by jaundice, fever and palpable lump. Sixteen patients (25.4%) had undergone prior cholecystectomy or choledocholithotomy. Endoscopic biliary stenting had been done in eleven patients (17.5%) for cholangitis. Co-existing gallbladder carcinoma was encountered in two patients and other two patients had secondary biliary cirrhosis with portal hypertension. Complete cyst excision with a Roux-en-Y hepaticojunostomy was performed in 52 (82.5%) patients. Partial cyst excision was done in four patients. Two patients with synchronous gallbladder malignancy underwent extended cholecystectomy/hepatectomy along with choledochal cyst excision. One patient died in the early post-operative period because of sepsis and acute respiratory distress syndrome. Patients undergoing cyst excision were followed-up for median duration of 29 months. One case of hepaticojunostomy stricture and two cases of incisional hernia were reported. All other patients were relieved of their symptoms after surgery. No new case of cholangiocarcinoma was reported in any of our patients. Conclusions: An increasing proportion of choledochal cysts are being diagnosed in adults. Non-specific clinical presentation poses diagnostic dilemma. Total cyst excision with Roux-en-Y hepaticojunostomy remains the standard surgical treatment both to relieve the symptoms and minimize the risk biliary tract malignancy.

B7 Forgotten Biliary Stents: Ignorance is not a bliss! Rugved V Kulkarni, Saket Kumar, Abhijit Chandra, King George Medical University, Lucknow

Introduction: Plastic biliary stents are used at temporizing measure in various benign or malignant biliary conditions. Forgotten plastic stents can present with disastrous complications. Methods: Records of patients from October 2011 till October 2015 undergoing biliary stenting were analyzed retrospectively. A total of 8 cases with forgotten biliary stents with serious complications.
were identified and their outcomes assessed. Results: Females were majority (75%) with median age of 34 yrs (Range: 17-50 yr). Primary indication of biliary stenting was stone disease in 62.5% (n=5), while benign biliary strictures accounted for the rest (n=3). Mean duration at presentation to hospital after ERCP stenting was 3.75 yr (Range: 1–8 yr), with cholangitis being the most common presentation (75%). One patient had developed secondary biliary cirrhosis. Prior operative exploration, ERCP stent exchange was possible only in 3 patients (37.5%). CBD exploration, stentolith retrieval and CBD clearance was successful in 100% patients with no mortality. Conclusion: Forgotten / Ignored biliary stents are common in Indian setup. Patients are lost to follow-up as their symptoms resolve. Serious life threatening complications may develop in some of these patients. Adequate patient counselling, and proper documentation is essential to avoid this condition.

B8 Laparoscopic Management of Gallbladder Cancer. Anil K Agarwal, MN Saravanan, Amit Javed, Raja Kalayarasan, BG Vageesha, GB Pant Hospital & MAM College, New Delhi

This Video depicts the role of laparoscopy in management of Gallbladder Cancer. It includes Staging laparoscopy to detect metastatic disease, Laparoscopic interaortocaval (16b1) lymph node sampling and laparoscopic radical cholecystectomy including regional lymphadenectomy & GB with Segment IVb/V liver resection.

B9 Laparoscopic Interaortocaval Lymph Node Sampling as Part of ‘Staging Laparoscopy’ in the Surgical Management of Gallbladder Cancer. Ashish Sachan, MN Saravanan, Anil K Agarwal, GB Pant Hospital & MAM College, New Delhi

In the surgical management of Gallbladder Cancer, staging laparoscopy is routinely performed to detect occult metastatic disease in form of peritoneal & Liver metastasis. In the absence of metastatic disease, usually after conversion to open (for performing radical cholecystectomy) sampling of the interaortocaval lymph node (16b1) is performed with frozen section analysis. Radical cholecystectomy is performed only after confirming absence of disease in IAC nodes on frozen section histopathology. We have started performing laparoscopic sampling of IAC lymph node i.e. it is included as part of staging laparoscopy. Laparoscopic IAC LN sampling helps avoid laparotomy in patients with metastatic disease and helps institution of chemotherapy early.

B10 EUS (Endoscopic Ultrasound) Guided FNAC of the Interaortocaval Lymph Node Helps in Selecting Patients for Curative Surgery in Gallbladder Cancer. MN Saravanan, Siddharth Shrivasstav, Pramod Garg, Anil K Agarwal, GB Pant Hospital & MAM College and AIIMS, New Delhi

Involvement of the 16b1 (interaortocaval) lymphnode (LN) in gallbladder cancer (GBC) is considered to represent metastatic disease. IAC nodes are difficult to target percutaneously, especially when small. Routine frozen-section histopathological examination (HPE) of the 16b1 LN is advocated at laparotomy before proceeding for radical cholecystectomy. Endoscopic Ultrasonography (EUS) is a good modality to visualise the interaortocaval region. We routinely utilize EUS in assessing 16b1 lymphnode and thereby avoid laparotomy in cases positive on HPE. Conclusion: Endoscopic Ultrasonography is an extremely useful modality to assess involvement of the 16b1 (interaortocaval) lymph node in gallbladder cancer and thereby avoid non therapeutic laparotomy in significant proportion of patients.


Chylous ascites is an uncommon form of ascites occurring due to accumulation of lipid-rich lymph into the peritoneal cavity. Traumatic injury to the lymphatic system due to pancreaticobiliary surgery can lead to this phenomenon. Total six patients sustained chylous leak due to pancreaticobiliary surgery for both benign and malignant cause. Average daily output was 441 ml (range: 150-800 ml/day) and total duration of output was 16.5 days (range: 4-35 days). Hospital stay was increased to average 19.1 days (range: 10-40 days). There were no other intraabdominal complications and also no mortality. All the patients were successfully managed conservatively with combination of continued enteral feeds through feeding jejunostomy tube, partial total parenteral nutrition (TPN) and octreotide along with abdominal drainage. Chylous ascites can be successfully treated with conservative management, but at the cost of increased hospital stay.

B12 Laparoscopy associated CBD exploration. Phani Krishna Ravula, Surgical Gastroenterology, Pace Hospital, New Delhi

Aim: To demonstrate techniques of laparoscopy assisted CBD exploration by rendezvous technique. Methods: In patients with failed CBD cannulation and <7 mm common bile duct rendezvous technique of CBD exploration is a useful tool. This video demonstrates a patient with 7 mm CBD with failed ERCP cannulation who underwent and ERCP by rendezvous technique.
**B13**

**Biliary Cystadenoma—an enigmatic diagnosis still?**

*JMV Amarjothi, Villalan Ramasamy, Amudhan Anbalagan, Prabakaran R, Bennet Duraisamy, Kannan D, MMC, Chennai*

**Aim:** Biliary cystadenomas are rare cystic lesions involving the liver. Due to their rarity and plethora of presentations, a primary diagnosis of biliary cystadenoma is not common place. **Methods:** This is a retrospective study of cases of histologically proven biliary cystadenoma between 2010 and 2015, its clinical presentation, previous treatment and surgical treatment offered in our institution. The patients were also followed up rigorously to detect early recurrence. **Results:** A series of seven cases of biliary cystadenoma were operated in our institution between 2010 and 2015. Out of the seven, six were female (85.7%). The mean age of presentation was 47 years (range—28—61 yrs). All the patients were symptomatic with the most common presentation being abdominal pain and discomfort. Most of the Patients (n=6, 85.7%) who were found to have histologically proven biliary cystadenoma had history of previous intervention/surgery before referral. Most common procedures included fluid aspiration (n=6, 85.7%), laparoscopic fenestration (n=3, 42.8%) and previous open excision (n=1, 14.2%). Most of the above procedures were done with a mistaken diagnosis of simple cyst. All most all patients (n=6, 85.7%) had enhancing cystic lesion involving the left lobe with a mean size of 15 cm (range-10-20 cm) and clear fluid with raised ca 19-9 levels more than 1000 iu/ml. The procedures offered included left hepatectomy (n=2, 28.57%) and complete excision (n=5, 71.4%). Out of the five patients undergoing complete excision, (n=3, 60%) developed bile leak which was managed conservatively. in the two patients undergoing hepatectomy, one (n=1, 50%) developed bile leak which was managed conservatively. All the patients are on follow up with no recurrence. **Conclusion:** As biliary cystadenomas are rare tumours with varied presentations resulting in frequent misdiagnosis and inappropriate treatment, a high index of suspicion is needed to diagnose and surgically treat these tumours. Complete excision when feasible is associated with minimal recurrence and hence a preferred option. Surveillance is mandatory to look for recurrence and malignant transformation in rare instances.

**B14**

**Laparoscopic management of Symptomatic double gall bladder: A case report with review of literature.**

*Bhushan Chittawadagi, S Rajapandian, Samrat Jankar, Sathiyamurthy, R Parthasarathi, C Palanivelu, GEM Hospital & Research Centre, Coimbatore*

Gallbladder duplication is a rare congenital malformation that occurs in about 1:4000 cases. Congenital anomalies of the gallbladder and anatomical variations of their position are associated with an increased risk of complications during laparoscopic cholecystectomy. We report a case of a gallbladder duplication with symptomatic cholecystitis, who presented with recurrent episodes of biliary colic and subsequently underwent laparoscopic cholecystectomy. Preoperative complete imaging is a must to delineate the biliary ductal and arterial anatomy to minimize potential injury. We conclude that laparoscopic cholecystectomy is the feasible and good treatment for gall bladder duplication in the present laparoscopic era. It is recommended to remove both gallbladder even if the disease is present in only one gallbladder. During cholecystectomy meticulous dissection of the calot’s triangle is mandatory. Surgery for asymptomatic duplication of gallbladder is not recommended.

**B15**

**Secondary hepatolithiasis- A tertiary center experience.**

*Kapil Nagaraj Palanisamy, Biju Pottakkat, Raja Kalayarasan, Sandip Chandrasekar, JIPMER, Puducherry*

**Introduction:** Intrahepatic stones have been established as a sequelae of bile duct explorations and biliary drainage procedures apart from their primary occurrence. Primary hepatolithiasis being not very common in southern India; intrahepatic stones secondary to previous biliary manipulations have been seen more often. Aim of our study is to review the clinical presentations and management approaches involved. Surgical guidelines in the management have not been clearly established. **Methods:** Patients with secondary hepatolithiasis who underwent surgical treatment between January 2014 and July 2016 were included. Patients with coexistent hepatobiliary malignancies were excluded. Retrospective analysis of prospectively collected data was done on the clinical presentations and the surgical approaches used. **Results:** Of the 10 patients who presented, one of them was excluded due to coexistent malignancy. All of them were symptomatic and abdominal pain was the predominant symptom. Subclinical cholangitis was evident in all patients. Except one, all of them had a course of antibiotics prior to surgery including one patient who underwent surgery on a semielective basis for refractory cholangitis. Resectional procedures were done in two patients as they had significant atrophy of the involved lobe. Hepaticojejunostomy after choledochoscopic assisted assessment and clearance of stones was done in rest of the cases. Access loop initially made was converted to bilioenterogastrostomy for facilitating endoscopic access in a patient. One patient died in the immediate post operative period due to duodenal leak and pseudoaneurysmal bleed. **Conclusion:** All patients with secondary hepatolithiasis had subclinical cholangitis. Tailored surgical approach is chosen to optimize the post operative outcomes. Choledochoscopy assisted techniques have been useful.
B16
Diagnosis of Bronchobiliary Fistula Using HIDA Scan- A Report of Two Cases. Bala Murugan Srinivasan, Rajendran Vellaisamy, Amudhan Anbalagan, Prabhakaran Raju, Benet Duraisamy, Kannan Devy Gounder, MMC

Aim: Bronchobiliary fistula is an abnormal communication between the biliary tree and airway. It presents with cough and bilioptysis. This article is to demonstrate the usefulness of HIDA scan in diagnosing Bronchobiliary fistula. The cases: The study was between May 2013 to August 2015. Case 1: A 39 year male admitted with bilioptysis. He had earlier undergone PCD followed by laparotomy for ruptured liver abscess 2 years back. Within a month, relaprotomy was done with external drainage and cholecystostomy. Since he developed external biliary fistula then treated with fistulojejunostomy in 3rd surgery. Then Patient developed bronchobiliary fistula then treated with fistulojejunostomy in 3rd surgery. Then Patient developed bronchobiliary fistula which was demonstrated by HIDA scan and not by MRCP. He was then treated with ERCP and biliary stenting. Bilioptysis stopped in 10 days. Case 2: A 35 year male, hilar cholangiocarcinoma with liver metastasis admitted with bilioptysis for 20 days. He had undergone palliative PTBD with stent internalisation 4 months back. The broncho biliary fistula was then demonstrated by HIDA scan. He was treated with ERCP and Biliary stenting. The bilioptysis stopped in 7 days. Results In both the patients MRCP failed to diagnose the fistulous communication which are well diagnosed with HIDA scan. Conclusion: Bronchobiliary fistula has to be suspected in patients with bilioptysis who have undergone hepatobiliary intervention. Diagnosing fistula may be difficult with MRCP and other imaging modalities. But with HIDA scan it is possible to diagnose the Broncho biliary fistula as is evident from these cases, which will be helpful for the management.

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<td>Port site</td>
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Conclusions: MIPD is a feasible option in patients posted for PD for both benign and malignant pathology. There is decrease in average blood loss and shorter duration of hospital stay after RAPD. The decrease in the maximum incision length is advantageous as it reduces the incidence of wound related morbidity and may also reduce incidence of incisional hernia. Faster recovery from the complex surgery lead to early institution of adjuvant therapy which may improve the 5-year survival rate. However, studies with more number of patients and longer follow-up is needed to support our results. MIPD may be considered as a feasible option in select group of patients in well equipped and experienced centers.

Comparison of spectrum of complications after pancreaticoduodenectomy in patients with or without preoperative biliary drainage. Hari Poudel, Thakur Deen Yadav, Vikas Gupta, Virendra Singh, Ramesh Kochhar, Saroj Sinha, Postgraduate Institute of Medical Education and Research, Chandigarh

Introduction: Preoperative Biliary Drainage had a conflicting role in resectable periampullary carcinoma with regard to post-operative complications. The debate has surfaced again with use of neoadjuvant chemotherapy for periampullary tumors. Aims: To evaluate outcomes of surgery in patients who have undergone pancreaticoduodenectomy with or without preoperative biliary stents in terms of morbidity and mortality. Methods: Patients who underwent pancreaticoduodenectomy with or without PBD were followed prospectively for post-operative morbidity and mortality. Complications were compared in the two groups. 59 patients were enrolled. Among them, 21 had PBD while 38 didn’t have. Primary outcome was any clinically significant complication within 30 days. Results: The two groups were comparable in terms of age, sex distribution, BMI, pre-operative albumin and haemoglobin. Clinically significant post-operative morbidity was present in 54% of patients. PBD group had higher overall morbidity (61% vs 50%, p=0.273), pancreatic fistula (33% vs 21%, p=0.357), Surgical site infection (33% vs 28%, p=8.76), operative time (314 mins vs 308 mins, p=0.240) compared to patients without PBD. However, patients without PBD had lower Delayed Gastric Emptying (61% vs 63%, p=0.924) and intraoperative blood loss (261 mins vs 305 mins, p=0.196) than patients with PBD. Conclusion: Pre-operative Biliary Drainage had no significant influence in post-operative complications in patients undergoing Pancreaticoduodenectomy. PBD can be safely opted when clinically indicated.

Laparoscopic excision of the Choledochal cyst in adult patients– an Indian experience. Hirdaya H Nag, Kshitij Sisodia, Pushap Sheetal, Som Chandra, GIPMER, New Delhi

Introduction: Laparoscopic choledochal cyst excision (LCDCE) in adult patients is not common. Aims: To evaluate safety, feasibility and outcome of LCDCE in adult patients. Patients and method: This retrospective study was conducted on 20 adult female patients (age >18 years) with choledochal cyst (CDC). All 20 patients were considered for LCDCE by a single surgical team at a tertiary care centre in north India from February 2011 to April 2016. Results: The mean age was 45.5 years. Nineteen (95%) patients had type I CDC and one patient (5%) had type 4 CDC (Todani’s classification). Fifteen patients (75%) presented with pain in abdomen and five (25%) presented with jaundice and/or cholangitis. LCDCE was successful in 16 (80%) patients whereas four patients...
(20%) required conversion due to technical difficulty. The mean blood loss, operation time and postoperative stay were 117.5 ml, 299.5 minutes and 8.15 days respectively. One patient (5%) had hepatocojenunostomy leak and died of postoperative hemorrhage due rupture of a pseudoaneurysm. No remote complication or recurrence of symptoms was observed during a mean follow of 17.2 months. **Conclusion:** Laparoscopic choledochal cyst excision in adult patients is safe and feasible but bilioenteric anastomosis leak may have fatal consequences.

### B20
**Laparoscopic hepatic bisegmentectomy (4b&5) with regional lymphadenectomy for Gall Bladder Cancer.**
_Hirdaya H Nag, Prithvi Raj, Kshitij Sisodia, GIPMER, New Delhi_

**Introduction:** Laparoscopic hepatic bisegmentectomy (s4b&s5) with regional lymphadenectomy for patients with gallbladder cancer is rarely reported. **Aim:** To evaluate feasibility, safety and outcome of laparoscopic hepatic bisegmentectomy (s4b&s5) with regional lymphadenectomy (LHBRL) in patients with gall bladder cancer (GBC). **Method:** Retrospective analysis of prospectively collected data of 20 patients with suspected or incidental GBC who underwent LHBRL by a single surgical team from 2010 to 2015. **Results:** Twelve patients (60%) had suspected GBC and eight patients (40%) had incidental GBC. Eighteen patients (90%) were females and median age was 50 (range: 28-70) years. Median (range) surgical blood loss was 120 ml (80-400), operation time was 300 minutes (200-480) and hospital stay was 5.5 days (2-10). Five (25%) patients required conversion due to technical difficulty caused by dense adhesions and/or involvement of extra-hepatic organs. Four patients (20%) with postoperative complications were managed conservatively. Final diagnosis was adenocarcinoma in Seventeen (85%) and xanthogranulomatous cholecystitis in three (15%). AJCC seventh GBC stage was T1bN0M0 in 3 (15%), T2N0M0 in 6 (30%), T3N0M0 in 2 (10%) and T1-3N1M0 in 6(30%) of patients. The median lymph node yield was 10 (range: 4-24) and resection margins were free in all (R0). Out of six patients with lymph node metastasis two patients died of recurrence within one year. Cumulative five year survival for stage I, II and III GBC was 80%. During a median follow up of 25.5 months total three patients died out of them one died of unrelated cause. **Conclusion:** LHBRL is a safe and feasible treatment option for patients of gallbladder cancer without involvement of extra-hepatic organs.

### B21
**Validation of the Lucknow BCD Classification for Acute Bile Duct Injury.**
_Joy A Abraham, Gujarat Cancer Society Medical College & Care Institute of Medical Sciences (CIMS), Ahmedabad_

**Introduction:** We now present validation of our Lucknow BCD classification with our experience of management and outcome of 162 patients with acute BDI. The classification was proposed in 2008. **Methods:** Between 2001 and 2010, 202 patients with acute BDI were managed. Complete information for classification of BDI and long term outcome was available in 162 patients; records of these patients were analyzed. **Results:** The commonest prototype was ByCfDs (bile leak yes, circumference full, duct significant) (n=94). In this group, external biliary fistula (EBF) was less likely to close and biliary stricture formation was likely. EBF closed in only 29 (31%) and biliary stricture formed in 87 (93%) of 94 patients. In the second prototype ByCpDs (bile leak yes, circumference partial, duct significant) (n=37), the EBF was more likely to close and biliary stricture formation was less likely. EBF closed in 25 (68%) and biliary stricture formed in 18 (49%) of 37 patients. In the third prototype ByCnDs (bile leak yes, circumference no applicable, duct insignificant) (n=29), the EBF was likely to close spontaneously and biliary stricture was not predicted to form in any patient. EBF closed in 26 (90%) and biliary stricture formed in only 2 (7%) of 29 patients. **Conclusion:** Our simple and easy to remember BCD classification of acute BDI was validated with our experience of 162 patients. The BDI prototype correctly predicted the outcome in terms of closure of EBF and formation of biliary stricture.

### B22
**Outcome Of 50 Cases Of Radical Cholecystectomy In Carcinoma Of Gall Bladder At Tertiary Care Centre.**
_Amit Balai Chakraborty, GCRI, Ahmedabad_

Gall bladder is a rare but lethal malignancy. It is 5th most common malignancy. Aim of this study is to see curative outcome of radical resection and morbidity, mortality and recurrences following surgery. **Methods:** 50 cases of carcinoma of gall bladder underwent radical cholecystectomy at GCRI between 2012 to 2016 February. Patient selected for surgery are those where R0 resection was anticipated. Inclusion criteria: All incidentally diagnosed case of carcinoma of gall bladder, all cases of carcinoma of gall bladder without distant metastasis. Exclusion Criteria: All cases with distant metastasis, ascites, encasement of major vessels, poor surgical risk patients. **Results:** The maximum number of patients undergoing radical cholecystectomy in our series are in 5th decade. Median age is around 52 years. There is female preponderance. Average duration of symptoms is 3 months. 40% of patients had gallstones. None had porcelain gall bladder. 4 patients referred from outside after simple cholecystectomy. CA19.9 was elevated in all cases but it is not specific. CT was used as the main imaging modality to determine resectability. All patient underwent diagnostic laparoscopy. All patient underwent radical cholecystectomy. One patient underwent right
Management of Residual Gall Bladder - An experience of 15 years from a North Indian Tertiary Care Centre. 
Ashish Singh, Rajneesh Kumar Singh, Anand Prakash, Anu Behari, Ashok Kumar, Vinay Kumar Kapoor, Rajan Saxena, SGPGIMS, Lucknow

Introduction: Sub-total cholecystectomy is often done during a difficult cholecystectomy. While most patients remain asymptomatic following sub-total cholecystectomy, some may progress to symptoms over time. Here we report our experience in the surgical management of such cases in last 15 years. Methods: Retrospective review of prospectively collected database of patients who underwent surgery for a symptomatic residual gallbladder between January 2000 and December 2015. SPSS v 21.0 software was used for statistical analysis. Results: There were 93 patients who presented with residual gallbladder-92 had been referred from other hospitals. The commonest presentation was biliary colic (n=72; 77.4%), jaundice and cholangitis (n=18; 19.4%), pancreatitis (n=5; 5.4%) and cholecysto-cutaneous fistula (n=4; 4.3%). Median duration of symptom onset after the initial subtotal cholecystectomy was 36 months (range 1 month-21 years). MRCP was done in 54% of cases and has been routinely used for confirmation of diagnosis for the last 10 years. All patients underwent completion cholecystectomy at our hospital (Open = 43, 46.2%; Laparoscopic = 29, 31.2%; Laparoscopic converted to open = 19, 20.4%; RYHJ = 2, 2.2%). Gall stones were found in 90 patients. There was no malignancy in gallbladder pathology in any patient. Some patients needed adjunct procedures such as ERCP (n=26; 28%), CBD exploration (n=11, 11.8%) etc. There was no postoperative mortality and the morbidity rate was 11%, and all were wound infection with two (2.1%) developing an incisional hernia postoperatively. Conclusions: An improperly done subtotal cholecystectomy can lead to a symptomatic residual gallbladder. Completion cholecystectomy for symptomatic residual gallbladder can be performed safely at specialist centers with low morbidity rates and excellent relief of symptoms. Laparoscopic completion cholecystectomy is feasible, but is associated with high conversion rates. MRCP is a useful investigation for the diagnosis of residual gallbladder.

Clinical significance of EGFR, HER-2 & p53 expression in Gallbladder carcinoma. Anjali Singh, Pramod Kumar Mishra, Sundeep Singh Saluja, Majid A Talikoti, Abul K Najmi, Jamia Hamdard, GB Pant Institute Of Postgraduate Medical Education And Research, HAH Centenary Hospital, New Delhi

Introduction: Gall bladder cancer (GBC) results via the dysplasia-metaplasia sequence (major pathway) and involves multiple cascades of ERBB and PI3K-AKT signaling. Recent studies have shown the over-expression of EGFR, HER-2 and p53 in GBC. This study analyses the clinical significance of these markers in GBC in a North Indian patient cohort. Methods: Sixty GBC patients were analyzed from 2013 to 2015. Paraffin embedded blocks containing neoplastic tissue and tumor-adjacent non-neoplastic epithelia were tested for immunohistochemical expression of EGFR, HER-2 and p53 proteins. EGFR, HER-2 positivity criteria was set at >30% tumors cells showing complete, membranous staining while p53 positivity was established when more than 50% tumor cells exhibited complete nuclear staining. Clinico-pathological association was calculated by Chi-square tests and cumulative survival rates were estimated by Kaplan-Meier actuarial survival curves and compared using log-rank tests. Multivariate analysis (Cox-proportional hazards model) was conducted to determine independent prognostic factors for GBC. Results: The average age of the cohort was 52±11 years of which 75% patients were females. Two-third patients had associated gallstones. Of the 60 patients, 48 underwent curative resection. Histopathology showed well-differentiated tumour in 17 patients, moderately differentiated in 25 patients and poorly differentiated tumor in 18 patients. Lymph node, Lymphovascular and peripheral invasion was observed in 9/48 (19%), 26/48 (54%) and 24/48 (50%) patients, respectively. Of the 60 patients, 26.7% (16/60), 36.7% (22/60) and 33.3% (20/60) showed a strong EGFR, HER-2 and p53 expression, respectively. A total of 13 deaths were recorded during the follow-up. The median survival was 18 months. EGFR expression showed a significant clinico-pathological correlation with sex and histological grade, HER-2 with sex, pathological grade, neural invasion was observed in 9/48 (19%), 26/48 (54%) and 24/48 (50%) patients, respectively. Of the 60 patients, 26.7% (16/60), 36.7% (22/60) and 33.3% (20/60) showed a strong EGFR, HER-2 and p53 expression, respectively. A total of 13 deaths were recorded during the follow-up. The median survival was 18 months. EGFR expression showed a significant clinico-pathological correlation with sex and histological grade, HER-2 with sex, pathological grade, nodal spread and distant metastasis (p<0.05) while p53 did not show any clinico-pathological correlation. Multivariate analysis revealed that Lymph node involvement (p=0.05), EGFR (p=0.02; HR=2.83, 95% CI=1.16-6.88), HER-2 (p=0.04; HR: 2.36; 95% CI:1.04-5.33) and p53 (p=0.03; HR: 5.63; 95% CI:1.21-26.26) expression were independent prognostic factors. Conclusions: The study suggests the plausible role of EGFR, HER-2 and p53 over-expression in GBC prognosis. Also, EGFR, HER-2 and p53 expression can aid in better designing of clinical trials for targeted therapy towards GBC.
symptoms. North Indian Gangetic planes report one of the highest incidences of GBC in the world. Understanding the epidemiology of gallbladder cancer has and will continue to provide valuable insights into determining risk factors for GBC. **Methods:** Prospective study of all GBC patients reporting in our hospital over last 3 years to evaluate the epidemiological profile of GBC patients from our region. **Results:** Over 3 years of the study period, 490 patients of GBC were identified, and their history and clinical findings were tabulated and analysed. The peak incidence of GBC was in 31-50 years age group (58%). Male to female ratio was 1:4.83, with mean age for females [Mean – 49.1 years] significantly lower than male counterpart [Mean- 54.9 years] (p value =0.000423). 84% of them consumed mustard oil (home made/ loose packed) as predominant medium of cooking. 38% of patients consumed tobacco, 20% were smokers [all male patients] while 5% consumed alcohol. Majority of the patients of GBC in our study, were from low socioeconomic strata (68%) [Kuppuswamy class]. GBC was more commonly observed in females with age of menarche <14 years [83%], age of 1st birth <20 years [56%]. Females with > 2 children had higher incidence [57%]. Gall stones were present in 390 out of 490 patients [80%]. Incidental GBC was detected in 158 out of 490 patients (32%) and most had undergone open cholecystectomy. Pain abdomen was the most common presenting complaint found in almost all patients of GBC [98%]. Significant proportion of the patients presented with distant metastasis (stage IVB) (52%). Most common histological subtype of GBC was adenocarcinoma (78%). **Conclusion:** This data emphasizes high prevalence of GBC in northern India. Current data suggest that the epidemiology of GBC is constantly evolving, with much of this change caused by lifestyle, cultural, mixing of different ethnicities and dietary factors. Balanced diet, prevention of malnutrition/adulteration, tobacco prevention, early intervention for cholelithiasis – may help in decreasing the incidence of this dreaded disease. More structured studies need to be carried out to ascertain risk factors for GBC in our population subgroup.

**B26**

**ER, PR, HER-2/neu in carcinoma gallbladder.** Durgesh Kumar Gupta, Puneet Gupta, Ajay Kumar Khanna, Satendra Kumar Tiwari, BHU, Varanasi

**Introduction:** Gallbladder cancer is the most common malignancy of the biliary tract, representing 80-95% of biliary tract cancers worldwide. In clinical practice, the tumor node metastasis (TNM) staging system sometimes could not predict gallbladder cancer patient’s prognosis accurately. Inspite of this, except for the TNM staging system, there were no other molecular markers available to facilitate the evaluation of gall bladder cancer prognosis. Therefore, it is imperative to explore new predictive factors to guide the postoperative treatments for gallbladder cancer patients. This study is done to assess the expression pattern of estrogen, progesterone and HER-2/neu receptors in benign and malignant gallbladder lesions and to assess their clinicopathological significance. As ER, PR are female hormone receptor and carcinoma gallbladder is more common in females, it will also assess the causative relation between the two. **Methods:** The study was carried out in 59 cases of histologically confirmed carcinoma of the gallbladder were included and 10 cases of controls in a single surgical unit in collaboration with Department of Pathology, Institute of Medical Sciences, Banaras Hindu University, Varanasi from July 2013 to July 2015. The formalin fixed specimen from cases and controls were further analysed for ER PR and Her-2/neu status and various parameters like stage of disease, TNM status, Histological grade and type were further correlated with them. **Results:** Estrogen receptor expression was absent in both carcinoma gallbladder and control group, the progesterone receptor expression was seen in only 1 (1.7%) case in carcinoma gallbladder group. HER-2/neu overexpression was found in 13 (22%) patients of carcinoma gallbladder. In adenocarcinoma cases which have HER-2/neu overexpression, 6 (50%) patient had well differentiated adenocarcinoma, 5 (41%) patients had moderately differentiated adenocarcinoma and 1 (8.3%) patient had poorly differentiated histology. The p value is 0.002, showing HER-2/neu expression is directly proportional to differentiation of tumour. **Conclusion:** HER-2/neu (22%) showed that it has the potential to become a possible new therapeutic intervention in selected group of advance carcinoma gallbladder disease. Also, the negative finding of no ER, PR expression in carcinoma gallbladder shows these tumors are not hormone dependent.

**B27**

**Assessment of the Impact of Surgical Biliary Drainage on Liver Fibrosis due to Benign Biliary Strictures.** Jayapal R, Thakur Deen Yadav, Vikas Gupta, Saroj K Sinha, Anupam Lal, Virendra Singh, PGIMER, Chandigarh

**Introduction:** Aim of this study was to assess the factors predicting the outcome of surgical biliary drainage on liver function and fibrosis due to benign biliary strictures (BBS) using non invasive methods. **Methods:** We studied 47 patients of BBS prospectively from July 2014 to December 2015. All patients of BBS who underwent Roux-en-Y hepaticojejunostomy and intraoperative liver biopsy were enrolled for study. Preoperative records of these patients were reviewed for fibroscan, ultrasound, Magnetic resonance cholangiopancreatography, LFT (Liver function test) and reassessed anytime after three months for regression of liver fibrosis with the same. **Results:** In our study, high strictures (type III and IV) comprised of ~72.3% as compared to 27.7% of low strictures (type I and
Ill) following iatrogenic bile duct injury (BDI). We found that the duration between the time of BDI and definitive repair (range 2 to 72 months) and duration of jaundice (range 1-20 months) together had impact on severity of fibrosis. Duration of jaundice had greater impact on severity of fibrosis than the duration of presentation. 46/47 patients underwent intraoperative liver biopsy out of which six (12.8%) patients had no fibrosis, 26 (55.3%) patients had stage 1 fibrosis, 11 (23.4%) patients had stage 2 fibrosis, two (4.3%) patients had stage 3 fibrosis and one (2.1%) patient had stage 4 fibrosis. We found high correlation between fibroscan and liver biopsy as the Pearson and Spearman’s rho correlation coefficient was +0.648. Mean of Liver stiffness measurement (LSM) increased (pre-op & post op) with increase in the duration of presentation. In our study, there was positive correlation between bilirubin and LSM (p=0.027 & Pearson correlation=0.323) which indicated that at higher bilirubin levels, LSM tends to be higher than expected. No positive correlation was present between Liver enzymes (ALT and AST) with LSM values. On analyzing the outcome of LFT and LSM with intraoperative liver biopsy, fall in mean level of LFT parameters and LSM was found to be statistically significant in stage 0, 1 and 2 fibrosis. There was no statistically significant fall in LFT parameters and LSM in patients with higher stages of fibrosis. Patients who underwent early repair within 6 weeks to 3 months of presentation showed significant fall in mean LSM in post operative period. Conclusion: Normal biliary function and regression of liver fibrosis can be achieved following timely bilio-enteric anastomosis in patients with BDI. Fibroscan is a novel modality to assess the grade of fibrosis in patients of BDI noninvasively thereby avoiding liver biopsy and its complications. Fibroscan can be used preoperatively in predicting severity of fibrosis and prognosis and also in follow up of patients with BDI after biliary drainage to assess the impact of surgery.

B28
Gangrenous cholecystitis– Imaging findings and outcome of laparoscopic cholecystectomy. Saraansh Bansal, Iqbal Singh, Preetinder Brar, Rahat Brar, Rajeev Kapoor, Atul Sharma Joshi, Rudra Prasad Doley, Jai Dev Wig, Fortis Hospital, Mohali

Introduction: Gangrenous cholecystitis– a severe form of acute cholecystitis is associated with a higher morbidity and mortality than in uncomplicated acute cholecystitis. The clinical characteristics are indistinguishable from that of patients with uncomplicated acute cholecystitis. The goal of this study is to identify computed tomography (CT) and MRI findings that would allow an accurate preoperative diagnosis of acute gangrenous cholecystitis. Treatment of severe acute cholecystitis by laparoscopic cholecystectomy remains controversial. We assessed the outcome of laparoscopic cholecystectomy in patients with gangrenous cholecystitis. Methods: Patients with a diagnosis of gangrenous cholecystitis were identified during the period of 2010 to 2015. Patients’ history, operative findings and 30 days outcome was recorded. Primary outcome was 30 day complications and mortality. Patient outcome in those who underwent open cholecystectomy were also recorded. CECT abdomen and MRI were done to diagnose gangrenous cholecystitis. Results: The study included 55 patients in our hospital diagnosed with gangrenous cholecystitis. Diabetes mellitus and hypertension were the most frequently accompanying medical issues. The clinical presentation was pain abdomen, fever, abdominal distension. CECT abdomen and MRI findings were confirmatory for gangrenous cholecystitis with without gall bladder perforation in 30% and 70% patients respectively. A total number of 26 patients underwent laparoscopic cholecystectomy. During the same period 23 patients under open cholecystectomy and 6 patients underwent a conversion from laparoscopic to open procedure to prevent complications. The overall complications in laparoscopic cholecystectomy group were 0%, 30% in open cholecystectomy group and 50% in conversion group. Conclusion: Gangrenous cholecystitis is a life threatening complication. The results of our study show that laparoscopic cholecystectomy is a safe option for patients with gangrenous cholecystitis and is associated with decreased morbidity and mortality.

B29
Xanthogranulomatous Cholecystitis- An innocent bystander or a serious problem: Study of 67 cases. Prabhu Singh, Nikhil Chopra, Saket Kumar, Abhijit Chandra, Pradeep Joshi, King George’s Medical University, Lucknow

Introduction: Xanthogranulomatous cholecystitis (XGC) is an uncommon, smoldering inflammatory lesion of the gallbladder. Clinical presentation, imaging features and operative findings may closely mimic Gallbladder carcinoma (GBC). Method: The study was conducted at a teaching hospital in North India over a period of four years (January 2012 to May 2016). Out of 1073 patients of gallbladder disease who underwent cholecystectomy for cholelithiasis or extended cholecystectomy for GBC, 67 (6.2%) patients had histological diagnosis of XGC. These cases were retrospectively analyzed. Patient characteristics, operative findings, postoperative course and final histological diagnosis were evaluated. Results: Sixty seven patients (M:F=1:1.3) with a median age of 48 years (range 22-70) were included in the study. Most common presentation was pain abdomen (86%) while jaundice was present in 23% of cases. Association with gallstone was seen in 94% of cases. Five patients (7.4%) had XGC in conjunction with GBC. Out of 67, 32 patients presented clinically as cholecystitis (benign) while in 18 patients had thick-walled gallbladder (suspicious). Seven patients had
mass-forming, infiltrative disease (suggestive of GBC), out of which three patients were found to have XGC coexisting with GBC in final histopathology (Table 1). Mean follow-up was 17.3 month (range 4-48 months). Mortality rate was 1.49% (1/67). Conclusion: XGC may mimic GBC and may pose diagnostic dilemma. Intra-operative frozen section examination may prove useful to avoid inappropriate major surgical resection. In a significant proportion of cases XGC may co-exist with GBC, justifying oncological resection in unclear situation (especially in mass-forming cases with inconclusive frozen section report).

Table 1: Demographic Profile of Xanthogranulomatous cholecystitis Cases

<table>
<thead>
<tr>
<th>Total cases:</th>
<th>67</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male: Females</td>
<td>1:3</td>
</tr>
<tr>
<td>Age (Median)</td>
<td>48 years (range: 24-70)</td>
</tr>
</tbody>
</table>

Pre-operative diagnosis

- Calculus Choledocholithiasis: 43
- Thick-walled gallbladder (XGC): 18
- Carcinoma Gallbladder: 7

B30

Laparoscopic Cholecystectomy in Cirrhotic Patients.
Nitin Goyal, Dr RMLIMS Lucknow

Introduction: From the era of absolute contraindication to the phase of preferred treatment, the technique of laparoscopic cholecystectomy advances with time. Here, we report our experience of laparoscopic cholecystectomy in 20 patients of liver cirrhosis. In our institute, laparoscopic cholecystectomy is the preferred choice for cholelithiasis in cirrhotic patient. Methods: In last 2 years, 180 laparoscopic cholecystectomies were performed and 20 patients are cirrhotic. Their data analysed retrospectively in terms of preoperative optimization, operative technique and results. Results: Laparoscopic cholecystectomy was completed successfully in 19 patients and one was converted to open. Mean operative time was 54 minutes. No additional port was required in all cases. Calot’s first dissection was performed in 18 patients and fundus first technique was used in 2 patients due to unclear anatomy. Liver bed bleeding was present in 16 patients, which was controlled effectively. Subhepatic drain was placed in 12 patients. There was no mortality. Morbidity in two patients was worsening of ascites in one; and incisional hernia in other patient which was converted to open. Port site complications were not noted in any patient and there was no evidence of intraabdominal bleeding or bile leak postoperatively. Blood and component transfusion was required in 2 patients. Average length of hospital stay was 4.8 days. Conclusion: Though laparoscopic cholecystectomy may be difficult in cirrhotic patients but it is feasible and relatively safe. It offers many advantages in cirrhotic patients and associated with low morbidity when compared with open surgery.

B31

Kshitij Sisodia, MN Saravanan, Vaibhav Varshney, Anil K Agarwal, GB Pant Hospital & MAM College, New Delhi

Introduction: While portal biliopathy [PB] is common in patients of EHPVO, clinical or biochemical, i.e. symptomatic PB is seen in only 20-30% of cases. We herein compare portal pressure in patients of EHPVO with or without portal biliopathy. Methods: Retrospective analysis of prospectively collected data of all patients with EHPVO who underwent elective PSRS where intra-operative pressures were available between January 2008 to December 2014. Patients were classified into two group: Group A: Portal Biliopathy [PB] and Group B: Non-Portal biliopathy [NPB]. Intra-operative pre and post shunt pressures in the gastro-epiploic vein recorded using transducers were analysed. Post surgical outcomes including resolution of PB and need for subsequent biliary intervention was assessed. Results: While 116 patients underwent PSRS for EHPVO during the study period, 55 patients in whom intraoperative pressure data were available formed the study group (NPB: 33 and PB: 22). Preshunt pressure (in mmHg) and mean decrement in NPB group was 31.3±6.3 and 9.06±4.55 respectively as compared to 29.9±8.4 and 8.8±6.07 in PB group [p = 0.4833 and p = 0.577]. During a median follow up of 48 months, 6 (27.3%) of 22 PB patients needed biliary intervention including biliointestinal bypass in 4 and endoscopic stenting in 2. Conclusion: Intra-operative portal pressures and post shunt decrement did not differ between the portal biliopathy and non-portal biliopathy groups.

B32

Laparoscopic radical cholecystectomy: Surgical and oncological outcomes.
Vageesh BG, Anil K Agarwal, MN Saravanan, HH Nag, Amit Javed, Raja Kalayrasan, GB Pant Hospital & MAM College, New Delhi

Introduction: In this era of minimally invasive surgery, application of laparoscopic technique for the management of gallbladder cancer (GBC) is still evolving. This study was undertaken to determine the safety, feasibility and outcomes of laparoscopic radical cholecystectomy (LRC) for GBC. Methods: Retrospective analysis of prospectively maintained data between June 2011 to June 2016. Of the 63 cases of LRC, 58 cases were GBC and 5 were xanthogranulomatous cholecystitis. Primary GBC patients
with minimal liver infiltration and incidental GBC (IGBC) patients following laparoscopic cholecystectomy were considered for LRC. Standard radical cholecystectomy (resection of segments IVB and V) was performed with standard lymphadenectomy. All port sites were excised in IGBC patients. Results: Fifty eight (42 primary GBC and 16 IGBC) underwent LRC during the study period for GBC. Median (range) operating time was 270 (180–340) and median (range) blood loss in ml was 150 (50–850). Morbidity include Grade A (ISGLS) bile leak in 2 patients, minor chyle leak in 1 patient and subhepatic collection in 2 patients. Median post-operative hospital stay was 5 days (range 3-16 days). Pathological T stage in primary GBC and IGBC patients were T1b in 6 and 4, T2 in 30 and 4 and T3 in 12 and 2. R0 resection was achieved in all patients. Median (range) lymph node yield was 12 (3-31) in GBC. At a median follow-up of 20 months (1-62), 52 patients were alive. No port site recurrence was observed. One patient died of local recurrence (at 40 months), one patient died of brain metastasis (at 52 months) while another patient died following local recurrence as well as distal metastatic disease (at 12 months). Three patients expired due to unrelated causes. Conclusion: Laparoscopic radical cholecystectomy is safe and feasible in selected patients with primary and incidental GBC.

**B33 Choledochoduodenostomy in Present Era: Specific Indications and Outcomes.** Anshuman Pandey, Smita Chauhan, Khalid Noman, Alankar Gupta, Nitin Goyal, Dr. Ram Manohar Lohia Institute of Medical Sciences, Lucknow

Introduction: In the present era of endoscopy and interventional radiology the management of benign biliary disease is predominantly non-surgical. Choledochoduodenostomy (CDD), the anastomosis between lower end of common bile duct and duodenum, has been described long back but the indications have remained similar over the years and the technique has been standardized and has yielded good results. We reviewed our indications and outcomes of the procedure over a period of 4 years and highlight the results with a review of literature. Methods: This retrospective study was conducted at Dr. Ram Manohar Lohia Institute of Medical Sciences, Lucknow, India, over a period of 4 years from January 2011 to December 2015. 20 patients who underwent choledochoduodenostomy within this period were evaluated. Six were male patients and 14 were females. The average age of the patients was 60 years. Preoperatively all the patients underwent abdominal ultrasound and MRCP along with routine blood investigations and were evaluated for medical co-morbidities. The patients were followed up for a variable period of 6 months to 4 years with liver function tests, abdominal ultrasound and/or a nuclear scan. Results: In our study the indications for choledochoduodenostomy included large impacted stones; choledocholithiasis with stricture; recurrent stones; and common bile duct (CBD) stone with stricture and choledystouduodenal fistula. The size of CBD varied from 1.5 to 2.5 cm. The mean of length of hospital stay was 9.2 days. The only postoperative complications were wound infection in 3 cases (15%) and pulmonary atelectasis in 1 case (5%). No cases of sump syndrome or cholangitis were recorded. Overall morbidity was 20% without any mortality. None of the patients developed recurrent stones, bile leak, or haemorrhage and none showed residual stones in the follow up period, making this procedure extremely satisfactory in these patients with multiple medical co-morbidities. Conclusion: Choledochoduodenostomy has a definite role in the management of bile duct stones specially in benign biliary tract obstruction when a permanent biliary drainage procedure is required. The size of the CBD is of critical importance and should be at least 16 mm in diameter. Meticulous and precise suturing techniques are also essential. The proportion of cases requiring this approach is diminishing because of non-operative techniques available, but it will not be eliminated by them based on current trends.

**B34 Prognostic significance of K-ras gene mutations in gallbladder cancer.** Anjali Singh, Pramod Kumar Mishra, Sundeep Singh Saluja, Sayed AH Abdi, Majid K Talikoti, Abul K Najmi, Jamia Hamdard and GB Pant Institute Of Medical Education And Research, New Delhi

Introduction: Elevated expression of EGFR and its ligand has been reported to correlate with worse prognosis in Gallbladder cancer (GBC). Thus, EGFR represents a validated target for the treatment of GBC. Mutations of the K-ras gene and the activation of its downstream pathways, predict the sensitivity to anti-EGFR treatment. The aim of this study was to assess the frequency of codon-12 and -13 K-ras point mutations in North Indian GBC cohort along with its association with survival. Methods: Freshly resected GBC tissues (36) and adjacent non-cancerous specimen (36) were collected from 2013-2015. Genomic DNA was extracted from all the tissues in triplicate. K-ras mutation analysis was performed using the Real line KRAS Detect reaction volume of 25 microlitre on Light Cycler 480 three times independently and mutations were evaluated by the comparative crossing point (Cp) values (difference between Cp value of test sample/positive control and control PCR). The correlation of these mutations with survival in GBC was evaluated. Survival curves were calculated by Kaplan-Meier actuarial survival curves and compared using log-rank tests. Cox-proportional hazards model (multivariate analysis) was used to identify the prognostic factors from
significant covariates for patient groups. Results: Females constituted about 81% of the patient cohort and 62.5% of cases reported had gall-stones. Ten patients (28) had well-differentiated tumours, 19 (53) had moderately differentiated while 7 (19) had poorly differentiated tumours. The stage wise distribution showed stage I n= 3, stage II (n=13) and Stage III (n=20). Nodal involvement was present in 7 (19) patients, whereas lympho-vascular invasion in 13 (36) and peri-neural invasion in 12 (33) patients. A total of 8 deaths were recorded during follow-up. Median survival of cohort was 14 months. The various point mutations observed in K-ras gene include G12C in 15 (42) patients, G12R in 11 (31), G12D in 6 (17) and G13D in 14 (39) patients. The incidence of point mutations in K-ras gene was significantly higher as compared to control tissues (p>0.05). Codon-12 mutant cases showed significant correlation with female gender and lympho-vascular invasion (p<0.05) while codon-13 mutants displayed a significant correlation with presence of stones (p<0.05). Codon-12 mutations had a significant impact on survival (p<0.05). Conclusions: Gallbladder cancer showed a high frequency of K-ras codon-12 mutations. It had a significant impact on survival. Therefore it may be useful in selecting patients for anti-EGFR therapy.

B35
Role of Laparoscopic Cholecystectomy in Moderate Acute Cholecystitis: A Universal Debate. Abhishek Arun Bhagwat, Santosh Gudimani, Mustafa Razvi, Narasimhan Mohan, Ramesh Ardhanari, Meenakshi Mission And Research Center, Madurai

Introduction: Acute Cholecystitis is a common condition which a surgeon sees in his outpatient department. Surgery remains the gold standard for this disease. Various guidelines have been published and differ in their protocol regarding the appropriate timing of surgery. Tokyo guidelines 2007 have graded the severity of acute cholecystitis into mild, moderate & severe. The classification remained the same in their 2013 update but the treatment differed and they advised early gall bladder drainage in patients with moderate cholecystitis with severe local inflammation. But WSES position statement on acute cholecystitis states that laparoscopic cholecystectomy is advisable in such settings. Recently published data also supports laparoscopic cholecystectomy in severe local inflammation. So, we reviewed our data to find the feasibility of laparoscopic cholecystectomy in moderate acute cholecystitis. Aim: To study the outcome of laparoscopic cholecystectomy in moderate acute cholecystitis & check its feasibility for same. Methods: Inclusion criteria: 1. Moderate Acute cholecystitis diagnosed as per Tokyo 2013 guidelines. 2. Age greater than or equal to 18 years. Exclusion criteria: 1. Mild and severe cholecystitis as per Tokyo 2013 guidelines. 2. Age < 18 yrs. All laparoscopic cholecystectomies done in our department from 2011 to 2015 were evaluated, after going through the history, examination, investigations, intraoperative notes & histopathological reports. They were graded as per Tokyo guidelines into mild, moderate & severe groups. All intraoperative and post-operative complications, conversions to open and postoperative aspiration /pigtail insertions were recorded in moderate acute cholecystitis patients. A total of 963 laparoscopic cholecystectomies were evaluated. 403 patients met the inclusion criteria and were included in this study. Out of 403, 293 (72.7%) had features of severe local inflammation in the form of lump, gangrene or abscess. All intraoperative complications in the form of bile duct injury, other organ injury, conversions to open & vascular injuries were recorded. Result: All the moderate cholecystitis patients were managed through laparoscopic cholecystectomy. None required conversion to open. No biliary tree injury occurred. 25 patients developed gall bladder bed collection for which 12 required USG guided aspiration and 8 required pigtail insertion & 5 required pigtail insertion after aspiration. There was no mortality. Conclusion: Laparoscopic cholecystectomy without prior drainage has minimal complications when performed in moderate acute cholecystitis even in settings of advanced local disease. So we recommend laparoscopic cholecystectomy for moderate acute cholecystitis by experienced surgeons in high volume centers.

B36
Predictors of curative resection and long term survival of gallbladder cancer– A decade of experience. Pramod Kumar Mishra, Sundeep Singh Saluja, Prithvi Nabi, Vaibhav Varshney, Neeraj Goel, Nilesh Patil, GB Pant Institute of medical education and research, New Delhi

Introduction: Gallbladder cancer (GBC) is an aggressive malignancy with a poor long term survival. Few recent reports have suggested a better prognosis after resection. We analysed the resectability and survival of the patients with GBC with a subgroup analysis between patients with and without jaundice to assess its prognostic significance. Methods: The records of all patients admitted from 2004 to 2014 were reviewed. Patients were divided into two groups, GBC without surgical obstructive jaundice (Non SOJ) and GBC with jaundice (SOJ) and results were compared. Further subgroup analysis was done between locally advanced patients in Non SOJ (pT3-4) and SOJ group. The predictors of resectability and long term survival were analysed in the entire cohort and between the groups. Results: Of 437 patients enrolled, 52 were excluded (benign pathology: n=35 and missed GBC: n=17). Among remaining 385 patients, 234 had GBC with no SOJ and 151 had GBC with jaundice. The incidence of metastasis (48% vs 37%), inoperable disease (13% vs 2%) and unresectable locally advanced disease (25% vs 10%)
was significantly higher in SOJ group (p=0.001) whereas the curative resection was significantly higher in Non SOJ group (58% vs 15%; p<0.0001). Presence of Jaundice, abdominal lump, gastric outlet obstruction (GOO), weight loss were strong predictors of resectability on multivariate analysis (P 0.003, 0.02, 0.04, and 0.003 respectively). GOO, abdominal lump and weight loss were significant predictors of unresectability in the Non SOJ group but not in the SOJ group. Median survival at 1yr, 2yrs and 5yrs in Non SOJ group was significantly more than SOJ group (80%, 65% & 53% vs 49, 32% & 0%; p<0.001). Although in sub group analysis median survival of patients in Non SOJ group (pT3-4) was higher than SOJ group (19 vs 12 months) the difference was not statistically significant (p= 0.44). TNM staging, node positivity and adjacent organ involvement were strong predictors of survival (p<0.001, 0.008 and 0.001 respectively). Conclusion: Jaundice is an important predictor of un-resectability in GBC. However, survival after resection in patient with SOJ was not significantly different from locally advanced non-SOJ GBC. Overall GBC is an aggressive disease with poor prognosis but careful selection and achieving R0 resection leads to better survival.

**B37**
**Laparoscopic Management Of Symptomatic Remnant Gall Bladder Calculi.** Morampudi Sarvari, Palanisamy Senthilnathan, Darshan S Nayak, N Anand Vijay, VP Nallankilli, S Srivatans Gurumurthi, Sandeep S Sabnis, Senthil Anand, R Parthasarathi, Palanivelu Praveen Raj, Chinnusamy Palanivelu, GEM Hospital & Research Centre, Coimbatore

**Introduction:** Widespread acceptance of laparoscopic cholecystectomy, early interventions during acute cholecystitis coupled with increased awareness of biliary and vascular injuries, has led to situation of residual gall bladder as not an uncommon entity today with reported incidence of 2.5% of all cholecystectomies. A subset of these patients can become symptomatic and can present with varying degree of symptoms before recognised as stump cholecystitis. Traditional management involves completion cholecystectomy with open approach via subcostal incision. With improved experience, minimally invasive approach is increasingly being favoured. We hereby, present our experience of completion cholecystectomy by laparoscopic approach. **Methods:** It is a retrospective observational review of our experience of laparoscopic intervention in patients with residual gall bladder; presenting as calculous cholecystitis from 2011 to 2016. Various intra-operative, post-operative and follow up parameters were analyzed. **Results:** Of total 19, which included both referrals and our follow ups, two patients had prior open cholecystectomy, while rest 17 had laparoscopic cholecystectomy. All completion cholecystectomy were performed by laparoscopic approach without conversion. Mean patient age was 54.9 years. There were 12 female and 7 male. Intra operatively, most of them were found to have residual gall bladder of varying sizes with impacted calculi in the neck, one patient had mucocele of gall bladder. One patient with situs inversus totalis had residual gall bladder with choledocholithiasis for which laparoscopic CBD exploration was done along with completion cholecystectomy. Extensive adhesions at hepatocystic triangle were noted in 2 cases. Short cystic duct was noted in 3 cases. In majority (17) of cases, cystic duct was secured with a clip while rest were looped due to wide duct. Mean blood loss was 43 ml (+/-14), while mean operation time was 146 minutes (+/-23). Drain placement was routine, which was removed on 2nd post operative day in all except 2. Four patients had additional combined procedures like ERCP and CBD explorations for CBD calculi. **Conclusion:** In experienced hands, laparoscopic completion cholecystectomy is a feasible and safe option with good peri operative outcomes for symptomatic residual gall bladder stump calculi.

**B38**
**“Histological Surprise” in patients undergoing radical cholecystectomy for carcinoma gallbladder.** Gautham Krishnamurthy, PGIMER, Chandigarh

**Introduction:** The association of gallstone disease with carcinoma gallbladder is well known. In high prevalent areas of gallstone disease, the incidence of benign mimickers of malignancy is high. This study was conducted to ascertain the incidence of histopathologically proven benign diseases in patients subjected to radical surgery for presumed carcinoma gall bladder. **Methods:** From our prospectively maintained database, we retrospectively reviewed 131 patients admitted with carcinoma gall bladder managed at Division of Surgical Gastroenterology, Dept of General Surgery, PGIMER, Chandigarh between July 2002 and May 2016. Diagnosis of carcinoma gall bladder was made after detailed clinical examination, blood investigations and CECT abdomen with angioprtography (CTAP). Patients deemed resectable and operable were admitted and are subject of analysis in this study. All patients with resectable lesion underwent radical cholecystectomy. Resection of involved surrounding organs (colon, duodenum, CBD) or vascular structures (right hepatic artery) was performed when necessary to achieve R0 resection. **Results:** One hundred thirty one with presumed diagnosis of resectable carcinoma gall bladder based on clinical and radiological data were admitted. Out of these patients, 29 did not undergo surgery when immediate preoperative evaluation revealed unresectable or metastatic disease. 12 patients underwent palliative procedure and remaining 74 patients underwent radical surgery (radical cholecystectomy in 71 and extended right heptectomy in 3). CBD resection in 33 and other organ...
resection (duodenum, colon, distal gastrectomy) in 14 were done to achieve R0 resection. Histological surprise was noted in 17 patients (22.9%). 14 patients (18.9%) had benign disease (xanthogranulomatous cholecystitis in 7, tuberculosis in 2 and chronic cholecystitis in 5) while 3 patients were diagnosed as hilar cholangiocarcinoma. Remaining 57 patients had adenocarcinoma of the gallbladder. **Conclusion:** In an endemic region with carcinoma gall bladder, the incidence of benign diseases in histopathology in patients following radical surgery is also high. This is despite the advances in imaging techniques, especially computed tomography.

**B39**

**A Prospective Comparative Study On The Effect Of Preoperative Biliary Stenting On Surgical Morbidity And Mortality After Pancreatico-Biliary Surgeries.**  
Prasanna B, Balakrishna SN, Venugopal HG, Nagesh NS, Vinay BN, Bangalore Medical College, Bengaluru

**Introduction:** The preoperative biliary drainage before any biliary surgery is required in many pancreatic-biliary diseases. We prospectively evaluated, among our patient population, the effect of preoperative biliary stenting on surgical morbidity and mortality after pancreatico-biliary surgeries. **Methods:** We involved 99 patients who underwent open CBD exploration (CBDE), Hepaticojejunostomy and Pancreaticoduodenectomy (PD) between April 2014 to May 2016. Two cohorts were designed based on status of CBD stenting (stented group n=51, not-stented group n=48). Both groups were matched for age, sex, nutrition status, bilirubin levels, co morbidities and past history of cholangitis. Both cohorts are compared prospectively for any difference in operative parameters like operative time and need for blood transfusion. Further surgical morbidity in terms of incidence of surgical wound infection, anastomotic leak and biloma (analyzed in subgroups of CBDE, HJ and PD), post-operative hospital stay, and surgical mortality were analyzed between two groups using multivariate analysis. Statistical analysis done using chi-square test for categorical variables and student ‘t’ test for continuous variables. **Results:** Overall surgical morbidity (p=0.005) and surgical wound infection rate (p<0.05) were significantly more in stented group than non-stented group (analyzed in sub-groups of CBDE, HJ and PD). Mean operative time was more in stented group although not statistically significant (p>0.05). There was no significant difference in need for blood transfusion (p>0.05), anastomotic leak or biloma (p=0.5), post operative hospital stay (p=0.8) (mean in days) and mortality (2%, p=0.504). **Conclusion:** Pre-operative biliary stenting is a risk factor for surgical wound infection and probably increased operative time in patients undergoing pancreatico-biliary surgeries. It is not a risk factor for anastomotic leak or biloma and mortality. Surgical wound infection is anticipated in all stented patients. Early surgical drainage and specific antibiotics will help early recovery.

**B40**

**Analysis of Outcomes following Surgical Repair of Postcholecystectomy Biliary Strictures- A Single Centre Experience.**  
Chitterusu Raghuram, Asian Institute of Gastroenterology, Hyderabad

**Introduction:** Bile duct injuries (BDI), occur most commonly after cholecystectomy, the most frequently performed surgical procedure. If unrecognized or managed inappropriately these injuries lead to potentially serious complications. The purpose of the present study was to evaluate the immediate postoperative and delayed outcomes following the definitive surgical treatment of post cholecystectomy benign biliary strictures (PC-BBS) at our institute and to analyze the factors affecting these outcomes. **Methods:** This was a retrospective observational study which included 50 patients who underwent definitive surgical treatment for PC-BBS during the period of January 2010 to December 2014. Medical records were reviewed with reference to patient demographic, clinical presentations, evaluation and interventions to optimize, details of definitive surgical treatment and immediate surgical outcomes. The type of biliary strictures was categorized according to Bismuth classification. The postoperative complications were graded according to Dindo classification. Follow-up details were obtained by reviewing the latest patient records and telephonic interviews. The delayed outcomes were classified according to Terblanche follow-up classification. **Results:** The median age of patients was 45 years with 32 (64%) female and 18 (36%) male patients. Ten (20%) patients presented with bile leak/external biliary fistula, 12 (24%) with biliary peritonitis, 11 (22%) with obstructive jaundice and 17 (34%) with recurrent cholangitis. Seventeen patients (34%) did not require any intervention, while 33 (66%) required intervention for optimization. The median time interval was 6 months between BDI to the definitive surgery with a range of 3 to 270 months. Roux en Y side to side HJ was performed in 42 (84%) patients and other procedures in 8 (16%). Transanastomotic stenting was done in 15 (30%). There were equal number of patients with low level strictures (type I & II) and high level stricture (type III, IV & V). Abnormal liver (atrophy-hypertrophy complex, liver fibrosis, cirrhosis) was present in 13 (26%). Postoperative complications occurred in 16 (32%) patients with no mortality. Higher postoperative complications were noted in patients who presented within 3 months after bile duct injury, underwent optimizing interventions after presentation and with abnormal liver. Forty five patients could be followed-up with median duration of 40 months (3.3 years). The excellent/good delayed outcomes occurred in 91.11% of patients, fair results in 6.67% and poor result
in 2.22%. The factors which affected delayed outcomes were female gender, late presentation after sustaining BDI (>3 months), prolonged biliary obstruction with or without cholangitis (>6 months), transanastomotic stenting, high level strictures and abnormal liver condition. But the factors identified to have affected outcomes in the present study could not be shown to be significant statistically probably due to inadequate sample size and short duration follow-up. Conclusion: Biliary reconstructive surgery for postcholecystectomy biliary stenosis performed early at a specialized Hepatobiliary surgical unit after appropriate preoperative optimization will have good delayed outcomes with an acceptable postoperative morbidity. A study with an adequate sample size and a longer duration of follow-up (minimum 5 years) is recommended to evaluate long term surgical outcomes.

**B41**

**Feasibility of Laparoscopic Cholecystectomy in Gangrenous Cholecystitis.** Sridhara KG, Venugopal HG, Balakrishna SN, Vinay BN, Nagesh NS, Bangalore Medical College, Bengaluru

**Introduction:** Gangrenous cholecystitis (GC) is considered as a severe form of cholecystitis. Clinical and radiological diagnosis of GC is challenging. Usually pre-operatively diagnosed or intra-operatively diagnosed GC are considered for open cholecystectomy. We submit our experience with management of GC. **Methods:** All patients of gangrenous cholecystitis who underwent cholecystectomy between March 2013 and March 2016 were retrospectively reviewed. GC was diagnosed based on radiological investigations (CECT / MRI) and/or intra-operative findings (Change in gall bladder (GB) wall colour to dark green, thinning of GB due to necrosis) and/or post-operative pathological findings (microscopically observed gangrenous focus). Demographics, pre-operative comorbidities, imaging modalities, surgical interventions and outcomes were reviewed. Data was represented as frequency or mean. **Results:** A total of 345 cholecystectomies were performed during the study period. Of them, 37 (10.7%) patients were diagnosed as GC. Among them, 23 (62.2%) were men. Mean age was 54.5 years. All patients presented with acute right hypochondriac pain, associated with fever and raised leucocyte count. Comorbidities associated were as diabetes mellitus (n=17, 45.9%), hypertension (n=13, 35.1%) and coronary artery disease (n=3, 8.1%). Five (13.5%) had acalculous cholecystitis, and rest had calculous cholecystitis. CECT was diagnostic in 17 out of 22 patients (77%). MRI was diagnostic in 5 out of 7 patients (71%). 14 patients (37.8%) had associated GB perforation. A total of 32 (86.5%) were planned for laparoscopic cholecystectomy and 5 (13.5%) for open cholecystectomy because of comorbid conditions. Nine (28.1%) required conversion to open cholecystectomy because of difficult anatomy. Major post-operative complications (n=5, 13.5%) included bile leak (n=2, 5.4%), managed with ERCP and stenting and intra-abdominal collection (n=3, 8.1%), managed with USG guided drainage. One elderly and diabetic female patient died in the post-operative period due to pneumonia with MODS. **Conclusions:** Post-operative morbidity associated with gangrenous cholecystitis is comparatively higher than acute cholecystitis. Laparoscopic cholecystectomy can be safely and successfully performed for gangrenous cholecystitis patients, although conversion to open cholecystectomy is high when compared to routine Cholelithiasis patients. Laparoscopic approach should be considered for all GC patients who are fit to undergo laparoscopic procedure.

**B42**


In patients with a malignant obstruction at the hilum of the liver, preoperative biliary drainage attempts to improve the safety of treatment by optimizing the liver functions. In such patients there is lack of evidence of the safety and efficacy for unilateral or bilateral PTBD. We therefore compared the two modalities. **Methods:** Patients 18 to 70 years of age, with a good performance status (ECOG 0 to 2), surgical obstructive jaundice due to malignant lesions involving the primary biliary confluence requiring preoperative biliary drainage were randomized to receive unilateral or bilateral drainage. ASA Grade IV patients, those unfit for procedure and those with a patent primary confluence on imaging were excluded. We analysed the safety of the procedure, clinical success (decrease in bilirubin to less than 75% of pretreatment value within a month of the procedure), technical success (successful placement of the catheter across the block providing continuous drainage of bile), post procedure quality of life (WHO-QOLB), time taken for bilirubin level to decrease to <5 mg/dl and fitness for surgery. The calculated sample size of this ongoing study was 60 in each arm. An interim analysis was done. **Results:** Of the 38 patients evaluated between September 2014 and December 2015, 6 patients were excluded (pre procedure cholangiogram showed a patent primary confluence) and 32 patients were included in the study. 15 underwent unilateral and 17 bilateral PTBD. The patient and disease-related factors were comparable. In the unilateral and bilateral groups, Bismuth Corlette Type II, IIIA, IIIB and IV blocks were present in 10, 4, 1 and 0 patients and 12, 2, 2 and 1 patients, respectively. At presentation the lesion was resectable in 9 in the unilateral and 10 in the bilateral group. Clinical success was achieved in 13
patients (86.7%) in unilateral group and 15 patients (88.2%) in bilateral group (p=1.0). Technical success was achieved in 13 patients (86.7%) in unilateral group and 17 patients (100%) in bilateral group (p=0.21). The complication rates were similar. Post-PTBD cholangitis occurred in 8 patients (53.3%) in unilateral group and in 8 patients (47.1%) in the bilateral group (p=1.0). Serum bilirubin levels decreased to <5 mg/dl in 7 patients (46.7%) in the unilateral group and in 10 patients (58.8%) in the bilateral group (p=0.72) over a median of 25 and 21 days (p=0.19). Two patients in unilateral group and nine patients in bilateral group were adequately optimized for definitive surgical procedure. None in the unilateral group and six patients in the bilateral group were operated upon. QOL scores at day 0, 4 weeks and 8 weeks were comparable. The median overall survival was 104 days (range 14 to 325 days) in the unilateral group and 106 days (range 4 to 419 days) in bilateral group. **Conclusion:** PTBD is an effective tool for decompression of the obstructed biliary system with there being little to choose between unilateral or bilateral drainage.
Pancreas

P1
Primary Pancreatic Tuberculosis- A Rare Case Report.
Bharath Ramesh Konan, Murali Krishna Padiyala, Anitha Muthusami, Elamurugan TP, S Manwar Ali, Jagdish S, JIPMER, Puducherry

Pancreatic tuberculosis is a rare occurrence in immunocompetent and immunosuppressed individuals. It usually occurs in patients with miliary tuberculosis with pulmonary and extrapulmonary involvement. Even though it is a relatively rare occurrence, it is said to be an AIDS defining illness. Primary Pancreatic tuberculosis (PPTB) is the isolated involvement of pancreas by M. tuberculosis in the absence of involvement of any other organ or previously identified TB. It has a reported incidence of only 0.46%. We report a case of 30 year old gentleman, previously diagnosed to have been infected with HIV and on antiretroviral therapy, who presented with epigastric pain and high grade fever since 4 weeks. CT scan showed a bulky edematous pancreas with a well-defined collection in the body. USG guided aspiration of the fluid revealed pus and the cultures grew Mycobacterium tuberculosis. There were no other foci of tuberculosis in the patient. Anti-tubercular therapy was initiated and resulted in gradual resolution of symptoms. Pancreatic tuberculosis is often misdiagnosed due to low index of suspicion and because its symptoms mimic more common pancreatic conditions. Since it is a treatable disease, diagnosis is vital in order to initiate appropriate pharmacotherapy.

P2
Double Splenic Artery Pseudo-Aneurysm and Pseudocyst in a patient with Chronic Pancreatitis- A Therapeutic Stalemate??
Mohsina Subair, Santhosh Satheesh, Suresh Kumar Sathasivam, Sreenath Gubbi Samanna, Mahesh Kumar S, Deepak Barathi, Vikram Kate, JIPMER, Puducherry

Pseudoaneurysm is a rare but a potentially fatal complication associated with chronic pancreatitis. The presence of concomitant aneurysms has been reported rarely and poses a therapeutic challenge owing to the technical difficulty in accessing the distal aneurysm by endovascular means and increased chances of rupture and bleeding. Here we report an unusual presentation of simultaneous occurrence of two pseudoaneurysms on the splenic artery. The Case: Fifty-year-old male, known case of chronic pancreatitis, presented with acute abdomen and a pulsating epigastric lump. A diagnosis of double pseudoaneurysm of splenic artery with a concomitant pseudocyst was made based on CECT and was confirmed by angiography. The therapeutic challenge expected was that the standard procedure of deploying coils distal and proximal to exclude the proximal aneurysm would increase the risk of expansion and rupture of the distal aneurysm owing to the collateral supply. Moreover, negotiation of the catheter through the thin walled 2 mm distal splenic artery to access distal aneurysm was technically demanding and associated with risk of rupture. The patient was managed by adapting a modified endovascular technique where the distal aneurysm was managed using the standard sandwich technique of deploying coils distal and proximal to the aneurysm thus excluding it. Following a failed attempt at using vascular plug for excluding the proximal aneurysm, 10 mm coils were deployed distal to, and across the neck and proximal to the pseudo aneurysm, up to the origin of the splenic artery thus excluding it. Patient made uneventful recovery and remains asymptomatic during a follow up of 6 months and CECT revealed complete aneurysm thrombosis. Conclusion: Double pseudoaneurysm of splenic artery associated with chronic pancreatitis is an unusual presentation. Conventional endovascular treatment used for single aneurysm may not be feasible in the presence of two aneurysms and it needs to be tailored according to the physical site, size and the anatomy of the vasculature associated with the aneurysms.

P3
Gastric outlet obstruction and intussusception following Frey's procedure in a patient with chronic pancreatitis- A case report.
Mohsina Subair, Sureshkumar Sathasivam, Sreenath Gubbi Samanna, Deepak Barathi, Vikram Kate, JIPMER, Puducherry

Most commonly reported post-operative complications of Frey’s procedure include sepsis, delayed gastric emptying and endocrine insufficiency. Currently, delayed gastric emptying is recognized as the most common procedure related morbidity with an incidence of 8-45%. There is a paucity of reports in the literature where a mechanical cause for obstruction was identified following Frey’s procedure. To the best of our knowledge, there are no reports of gastric outlet obstruction following Frey’s procedure and only one case of intussusception following Frey’s procedure has been reported. Here we report unusual complications like gastric outlet obstruction and intussusception following Frey’s procedure in the late post-operative period. The Case: A 40 year old patient of chronic pancreatitis with CBD stricture who underwent Frey’s procedure, presented with recurrent vomiting episodes three months post-
operatively. CECT abdomen showed features of gastric outlet obstruction. Exploratory laparotomy was carried out as patient failed to respond to conservative measures. Exploration revealed dense adhesions of first and second part of duodenum to the area of hepatico-jejunoanastomosis leading to gross dilatation of the stomach. The Roux limb which was anastomosed to the pancreas appeared normal and was not dilated. Adhesiolysis was not attempted as the fibrotic area was close to the hepatico-jejunoanastomosis site. A gastrojejunoanastomosis was done to bypass the obstruction following which patient made an uneventful recovery. The patient remained asymptomatic for two months after which she presented with features suggestive of jejuno-jejunal intussusception, confirmed on CECT, which was managed conservatively. Patient remains asymptomatic on follow up for the last 9 months. Conclusion: Our experience demonstrates that although reports of such complications following Frey’s procedure are rare, gastric outlet obstruction and intussusception can occur following Frey’s procedure and hence the surgeon should have an index of suspicion in patients with atypical presentation in the late postoperative period.

P4
Two rare complications of chronic pancreatitis at either end of pancreas. Sahil Bassi, Sankar Narayanan, Jagan Balu, Suresh Kumar, Amandeep Singh Sandhu, Rajshree Nair, Shankar Narayanan Perumal, Sankar Subramanian, Sri Ramachandra University, Chennai

Obstructive jaundice in chronic pancreatitis is usually due to stricture of intra pancreatic CBD but obstructive jaundice due to impacted pancreatic stone at the periamplullary is extremely rare. On the other end splenic complication due to chronic pancreatitis is rare with incidence of 2.2% which includes intra splenic pseudocyst, splenic artery aneurysm and splenic vein thrombosis, however splenic infarct with abscess formation is very rare complication in setting of chronic pancreatitis. We present a rare case of 48 yr old male, known case of ethanol related chronic pancreatitis with known diabetic came to hospital with complaints of abdomen pain, yellowish discoloration of eyes and passing high coloured urine one and a half yrs back for which he was radiologically diagnosed to have impacted stone at periamplullary region which is extremely rare. As far as our knowledge on literature search only 7 cases has been reported till date. ERCP with papillotomy was done and patient was asymptomatic for the last one and a half yrs of follow up. Now again patient presented with upper abdomen pain for the last 1 month associated with fever. Ultrasound abdomen showed Splenic Abscess. Further CECT Abdomen showed Chronic pancreatitis with dilated main pancreatic duct, with large splenic infarct going for splenic abscess. During Hospital stay, CT guided Pigtail catheter was inserted, 1 litre of fluid was drained. Post procedure patient was clinically stable. Conclusion: We present a case two rare complication of chronic pancreatitis at either end of pancreas at different time interval which were managed conservatively.

P5
Reversed Intestinal Rotation With Annular Pancreas Presented as Acute Necrotising Pancreatitis– A Case Report. Rajendar Byshetty, Shanmugam D, Kadambari D, Jawaharlal Institute of Postgraduate Medical Education & Research, Puducherry

Reverse rotation of intestine is a very rare congenital anomaly of the intestinal rotation (1). It usually manifest in the paediatric age with acute intestinal obstruction. There are very few reports on reverse rotation of intestine which was found in the autopsy specimen (2). It is also an unusual association to have anomaly in the development of pancreas as well. The migration fault in the development of the pancreas resulting in annular pancreas (3). Annular pancreas usually presents with duodenal obstruction in the paediatric population, where it warrants surgical management. It is a rarest case, where our patient with reversed intestinal rotation was asymptomatic, but presented with acute necrotising pancreatitis, a very rare presentation in annular pancreas.

P6
Retroperitoneoscopic Pancreatic necrosectomy– Minimal invasive technique for maximal morbidity disease. Harshad Soni, Sanjiv Haribhakti, Kaizen Hospital, Ahmedabad

Introduction: Infected pancreatic necrosis may lead to progressive organ failure and significant morbidity & mortality. Open pancreatic necrosectomy is associated with high mortality & significant morbidity. Minimal invasive techniques have been developed in an attempt to reduce the high mortality of open necrosectomy. Methods: This was a retrospective analysis of 10 patients undergoing MIPN (Minimal Invasive Pancreatic necrosectomy) January 2015 to June 2016. Minimal invasive pancreatic necrosectomy performed using CT scan imaging, percutaneous catheter placement and necrosectomy using small incision, video assisted method. Data of Open Pancreatic necrosectomy was compared with minimal invasive technique. Outcome measures included total and postoperative ICU and hospital stays, organ dysfunction, complications and mortality. Results: 10 patients underwent Minimal invasive pancreatic necrosectomy. Median age of the patients was 38 years, 06 males. A total of 8 patients were tertiary referral, with a median time to transfer from index hospital of 14 days. Etiology was gall stones 30%, alcoholic 60% & idiopathic 10%. During procedure pus sample sent for culture and sensitivity. 40% had postoperative
organ failure, 30% of patients had prolonged ICU stay (>7 days) post operatively, re-operations required in 30% of patients. 20% patients had placed percutaneous catheter drainage. 10% had postoperative mortality. Conclusion: Minimal invasive procedure for retroperitoneal pancreatic necrosectomy gives better outcome and reduce mortality.

P7
A rare case of Carcinoma Pancreas with meningeal metastasis: Case report. Satya Prakash Jindal, Indraprashtra Apollo Hospital, New Delhi

Carcinoma pancreas is a common malignant disorder of the digestive system. Unfortunately, cases of pancreatic cancer often present late due to nonspecific symptoms and most patients are not amenable to surgical cure. Approximately 40% patients have locally advanced disease and 40% patients have metastatic disease at the time of presentation. Common metastatic sites include liver, peritoneum and lung. However, CNS metastases are rarely seen in carcinoma pancreas and most reported cases show lesions in the brain parenchyma. Carcinoma pancreas with meningeal metastasis is an extremely rare presentation and fewer than ten cases have been reported in literature. Meningeal infiltration by solid tumours has been reported in 3-8% cases and most common primaries were carcinoma lung, breast carcinoma and melanoma. Clinical presentation is similar to meningitis or brain tumors and includes dizziness, nausea, vomiting, neck rigidity, sensory and motor deficit. Treatment of meningeal metastasis consists of palliative chemotherapy and radiation. Chemotherapy has poor penetration into CSF due to blood-brain barrier. To overcome this inaccessibility intrathecal administration of chemotherapeutic drugs has been used in these patients without any significant advantage. The meningeal carcinomatosis has a poor prognosis with median survival of 8-10 weeks. We present a case of a 69 year old female who presented with a history of pain abdomen and vomiting for 10 days and an altered sensorium of 2 days duration. On examination she had fever, slurring of speech and neck rigidity. Her CECT abdomen revealed a heterogenous mass lesion in the body of pancreas with central necrosis suggestive of carcinoma pancreas. It measured approximately 7.2x6x3.7 cm in size and was extending into the lesser sac with regional lymphadenopathy. Her CA19.9 level was 1953 IU/mL and liver function tests showed evidence of cholestasis. MRI brain revealed evidence of moderate dilation of the ventricular system with periventricular enhancement and CSF cytology was consistent with metastatic adenocarcinoma. In view of her poor general condition of the patient, ECOG score of four and after multidisciplinary discussion, only palliative treatment was given. She rapidly deteriorated and succumbed to her illness 5 days after admission to our hospital.

P8
Uncut Roux-En-Y Frey's Procedure With Preservation Of Gastroepiploico And Gastroduodenal Vascular Pedicles For Chronic Calcific Pancreatitis With Celiac And Superior Mesenteric Artery Occlusion. Pramod Jagannath, Manipal Hospitals, Bengaluru

A 35 years old gentleman, a recently detected type II diabetic, presented with intermittent episodes of upper abdominal pain of two years duration associated with vomiting and weight loss of three months duration. He had had acute anterior wall myocardial infarction twelve years ago and had undergone laparoscopic cholecystectomy six years ago. Physical examination revealed mild epigastric tenderness alone with no palpable mass. Laboratory investigations showed high blood sugars and glycaated haemoglobin levels. Liver function test and serum amylase and lipase were normal. CECT of the abdomen done elsewhere showed pancreatic pseudocyst with significant thrombosis of celiac axis and superior mesenteric artery. Hence, CT aortic angiography was done which revealed features of chronic calcific pancreatitis with 9x7cms pseudocyst in the tail region of the pancreas. There was a partial intraluminal thrombus (30-40% occlusion) in the celiac axis, intraluminal thrombus with significant narrowing of left gastric artery, complete occlusion of splenic artery, and partial occlusion (30-40%) of the superior mesenteric artery. He underwent laparotomy, drainage of the pseudocyst, Frey's procedure (uncut Roux limb cysto-jejunostomy, pancreatico-jejunostomy) with preservation of gastroepiploic and gastroduodenal vascular pedicles. His postoperative recovery was uneventful without any complications. Repeat CT aortic angiography done on POD-8 showed the same features as the previous scan without any evidence of bowel ischemia.

P9
Recurrent Acute Pancreatitis In A Child- Etiology Being A Rare Pancreatic Duct Anomaly. Bharath Kumar Desu, Narayana Medical College, Nellore

Introduction: Acute pancreatitis is an emerging problem in pediatrics. Although the cause is unclear, it may be explained by a heightened awareness of AP in children. Although magnetic resonance cholangiopancreatography (MRCP) is seldom required for first attack of AP, it constitutes a valuable tool in the evaluation of pancreaticobiliary abnormalities. Congenital anomalies and normal variants of the pancreatic duct are often detected as incidental findings in asymptomatic patients. Occasionally it produces symptoms in childhood and here is a patient presented to us with recurrent episodes of abdominal pain and MRCP helped us in diagnosing the condition and directed us for therapy. The Case: 13 year old male presented to us with complaints of upper abdominal pain
since 5 days, vomitings since 4 days. His abdominal pain is radiating to back. He had similar episodes for three times in the last 2 years but were treated conservatively at a local hospital and not been investigated. On examination, vitals were stable and abdominal examination was normal. In view of history of recurrent acute pancreatitis, MRCP was done. It showed bifid duct of wirsung with duct of santorini opening into its anterior division with bulky body and tail of pancreas. Patient was conservatively treated and he recovered well. Conclusion: Congenital variants of the biliopancreatic ductal system provide interesting challenges when discovered during the diagnostic workup of idiopathic acute recurrent pancreatitis. However most of these variants are clinically irrelevant. Methods for the selection of patients most likely to benefit from invasive therapy need to be refined.

P10
Operative outcome of Pancreatoduodenectomy with Portal Venous Resection: Our experience. Lokesh Goyal, Rajesh Bhojwani, SDM Hospital, Jaipur

Introduction: Pancreatic cancer is a biologically aggressive disease associated with dismal prognosis. Curative surgical resection provides the long term survival with an acceptable morbidity and mortality of <5% at experienced centers. Meta-analyses have showed that portal venous resection improves survival, although it depends on the depth of true tumor venous infiltration. Here we discuss our experience of portal vein resection with pancreaticobiliary resections and the outcomes.

Methods: All pancreatoduodenectomies with portal venous resection in the last two years at our unit were analyzed and outcomes compared to the historical controls in terms of morbidity, blood transfusion, complications and hospital stay. A total of 8 cases were identified and categorized according to the type of portal venous resection. 4 sleeve portal vein resections, 2 segmental portal venous resections and anastomosis, 1 segmental portal vein resection and PTFE graft and 1 segmental portal vein resection in a case of total pancreatectomy with autologous splenic vein graft were identified and analyzed. Results: All the cases of sleeve resections and segmental portal venous resections and end to end anastomosis recovered uneventfully. Patient who underwent PTFE graft showed delayed recovery but without any bile leak or evidence of graft occlusion at one month. The case of autologous splenic vein graft showed signs of hepatic ischaemia reduced portal flow for the first five days resulting into prolonged ICU stay. No mortality was seen. Conclusions: An aggressive approach towards pancreatic carcinoma with venous resection, to ensure R0 resection is technically feasible. While sleeve resection and end to end anastomosis did not appear to increase the morbidity and hospital stay, in our experience a prosthetic or autologous graft may delay the recovery and hospital stay owing to various associated factors.

P11
Cystic Pancreatic Lymphangioma- Case Series. Arun Kasi, Govt Stanley Medical College Hospital, Chennai

Introduction: Cystic lymphangioma usually occurs in the neck, axillary region, and rarely in the mediastinum. The abdominal organs are uncommon sites of origin. Of all the lymphangiomas in the peritoneal cavity, about 70% have been found in the mesentry of small intestine. Pancreas is one of the rarest origins & cause diagnostic dilemmas with other retroperitoneal cystic tumors. The Cases: Herein We report 6 cases of cystic pancreatic lymphangioma from march 2013 to june 2016. All patients presented in 2nd & 3rd decades as epigastric pain. Upon physical examination, there was no palpable mass though lesion was large. Radiological Imaging studies commonly revealed multiseptated cystic mass lesion located in the upper ventral pancreatic area (body & tail 5 cases; head 1 case) neighboring posterior stomach occupying upper retroperitoneum; Size of the lesion vary from 6 cm to 19 cm (average 12 cm) with Hepatic artery & GDA seen coursing through the lesion in one case; Complete excision preserving vessels was done in all the cases. Final pathological diagnosis was reported as cystic lymphangioma. All the patients made complete recovery & no recurrences on followup. Conclusion: Cystic pancreatic lymphangiomas are rarely seen tumors. Although lymphangioma is pathologically benign, surgical removal should be the first choice for symptomatic lymphangiomas. Complete surgical resection is curative.

P12
Pancreatoduodenectomy with en bloc SMA resection and PTFE graft for high grade spindle cell sarcoma of head of pancreas: A case report. Vinod B Biradar, Santakoba Durlabji Memorial Hospital, Jaipur

Introduction: Spindle cell sarcoma of head of pancreas is rare. The tumor tends to be locally aggressive and requires an aggressive approach for surgical extirpation. Methods: A young male, 39 years, presented with complaints of pain and lump abdomen for 1 month. The CT whole abdomen revealed a large exophytic growth 7X5 cms arising from medial aspect of duodenum with multiple necrotic areas and CT Angiography revealed the involvement of SMA while the SMV was spared. Result: The patient underwent a Pancreatoduodenectomy with en bloc SMA resection and replacement with a 6 mm, 7 cm PTFE graft anastomosed at the origin of the SMA and the base of mesentery. The SMV could be dissected off the tumor. R0 resection was achieved. The histopathology showed high grade spindle cell sarcoma of neurogenic origin. The patient had an
uneventful recovery and was discharged from the hospital on day 9 after surgery. A 13 months follow up did not reveal any evidence of recurrence. **Conclusion:** An aggressive surgical approach for mesenchymal tumors of head of pancreas is desirable. Arterial vascular involvement should not preclude resection and a prosthetic PTFE graft serves well for the purpose.

**P13**

**Retrospective Comparison of the Outcomes of Open vs Laparoscopic Infected Pancreatic Necrosectomy: A Single Centre Study.** **Sumesh Kalatha, Command Hospital Air Force, Bangalore**

**Introduction:** Infected pancreatic necrosis is the most dreaded complication of Acute pancreatitis which carries a high morbidity and mortality. Recent times have witnessed a paradigm shift in the surgical management of these patients from early open to delayed minimally invasive step up approach with good outcomes. **Methods:** We have done a retrospective analysis of the complications and outcomes of eight patients who had undergone surgery by open vs laparoscopic approach in the last 3 years. **Results:** All patients clinical profile was comparable but the outcome of the patients who had undergone open surgery was significantly poor compare to those who had undergone laparoscopic surgery. **Discussion:** This study highlights that not only the timing of surgery is important but also shows that minimally invasive surgery should be preferred if the expertise is available and also the laparoscopic pancreatic necrosectomy is a promising and safe approach with all the benefits of minimally invasive surgery.

**P14**

**Laparoscopic Management of Infected Acute Necrotizing Pancreatitis.** **Pradeep Jain, Pankaj Sharma, Vivek Goel, Saurabh Bansal, Action Cancer Hospital and Sri Balaji Action Medical Institute, Delhi**

Acute pancreatitis is usually a self-limiting disease and resolve without serious complications. However, 25% of patients with AP will develop a more severe form of the disease and is associated with the development of potentially life-threatening complications like necrosis of the pancreatic parenchyma, the peripancreatic tissue or both. Pancreatic necrosis is a local complication of acute pancreatitis. The development of secondary infection in pancreatic necrosis is associated with increased mortality. Pancreatic necrosectomy is the mainstay of invasive management. The traditional surgical approach to pancreatic necrosis was open necrosectomy which aims at wide drainage of all infected collections and complete removal of all necrotic tissue with the placement of drains for continuous postoperative closed lavage. Frequently, repeat laparotomy was needed to ensure complete debridement. But open approach was associated with substantial morbidity and rates of perioperative mortality that exceeded 50% in some reports. Gagner first described minimally invasive surgical treatment of necrotizing pancreatitis in 1996, including laparoscopic retrocolic, retroperitoneoscopic, and transgastric procedures. With increasing technology and experience, it is now possible to do necrosectomy by minimally invasive techniques. However, there have been only a few case series related to laparoscopic approach, reported in literature to date. Herein, we present our technique in laparoscopic management of pancreatic necrosis. **Conclusions:** Laparoscopic necrosectomy gives a better exposure of the lesser sac, left paracolic gutter and head of the pancreas. Laparoscopic pancreatic necrosectomy is a promising and safe approach with all the benefits of minimally invasive surgery and is found to have reduced incidence of major complications and mortality. Video showing laparoscopic pancreatic necrosectomy will be shown at the time of presentation.

**P15**

**Adenosquamous Carcinoma Pancreas in a young female.** **Nimi Viju, Govt. Medical College, Kottayam**

Adenosquamous Carcinoma is a rare aggressive subtype of exocrine pancreatic tumor. This type of tumor is extremely rare as only a few cases have been reported in literature. Presenting here a case of 36 year old female with dyspeptic symptoms and bloating sensation for 4 months duration. CECT revealed mass in CBD infiltrating to the first part of duodenum with focal cystic dilatation of confluence on right and left hepatic ducts. HPR revealed poorly differentiated Adenosquamous Carcinoma involving periampullary region with peri-neural invasion. IHC studies are pending. Whipple’s procedure was done following which patient had wound infection which is subsiding. These tumors are very aggressive once followed by a dismissal prognosis even with aggressive treatment and a median survival of less than one year. More studies are needed to address the role of surgery and use of adjuvant therapy, however this is quite difficult as the tumor entity is extremely rare. Written informed consent was taken from the patient for publishing the same.

**P16**

**Neuroendocrine tumors of pancreas- experience of a tertiary care centre.** **Abdul Rehman, Madras Medical College, Chennai**

**Aim:** The aim of this study is to analyze the clinical presentation, surgical management, outcome of neuroendocrine tumors of pancreas in a tertiary care center. **Methods:** This is a retrospective study design between January 2013 to August 2015. The study includes 11
patients. Male 3, female 8. The age group ranged between 19 to 52 years. The factors analyzed were Demographic profiles, clinical presentation, investigation, type of pancreas resection, associated surgical procedures, perioperative morbidity and mortality. Total no of pancreatic tumors in our institution was 94 and incidence of NE tumor is about 8.5%. Lab investigations, Pancreatic protocol CT and selective SRS study were used to identify the tumors. Combination of surgical exploration with intraoperative ultrasound localizes almost all tumors. The pancreatic tumors resected were Insulinoma 5, Carcinoid 5 and malignant nonfunctioning Neuroendocrine 1. Of these 2 cases were MEN-I associated Insulinomas. Procedures performed were Subtotal pancreatectomy+spleenectomy+roux en y pancreateicojejunostomy 1, Coring of head & uncinate of pancreas with distal pancreatectomy 1, Central pancreatectomy 1, Distal pancreatectomy with spleenectomy 2, whipples 3, enucleation 2, palliative gastrojejunostomy 1. Results: The morbidity were wound infection 2, and pancreatic leaks were nil. One patient operated for insulinoma died due to sepsis. Conclusion: The true incidence of Neuroendocrine tumours is under estimated due to vague presentations and misdiagnosis. Except insulinomas, other Neuroendocrine tumors were non functional. Proper diagnosis and surgical intervention results in a favorable outcome as in our series.

P17

Xanthogranulomatous Pancreatitis-A rare case presentation. Nimi Viju, Govt. Medical College, Kottayam

Xanthogranulomatous Pancreatitis is a rare inflammatory disease of pancreas, correctly diagnosed after pathological examination. Although Xanthogranulomatous inflammation is common in gall bladder, colon, genito urinary tract, lymphnodes, kidney, skin, retroperitoneum and soft tissues it is extremely rare in pancreas. Only 12 cases are reported world wide as per literature. Presenting here a case of the same in a 45 year old female admitted with bilious vomiting and abdominal distention. Hematological investigation and ultra sound scanning of abdomen was normal. CT revealed a D3 proliferative lesion ?Neoplasam. Intraoperatively a tumour mass involving pancreatic head and uncinate process of pancreas with D3-D4 obstruction and dilated gall bladder with white bile and pancreatitis was found. Histopathological examination revealed Xanthogranulomatous Pancreatitis. Post operative period was uneventful. The disease is extremely rare and most cases are pre-operatively misdiagnosed as pancreatic tumour. IHC reports are pending. When a pancreatic mass does not show clinical or radiological features typical of common pancreatic neoplasm, xanthogranulomatous pancreatitis must be considered as a differential diagnosis.

P18

Management of complete pancreatic transection following blunt trauma abdomen: Lessons learnt. Jitendra H. Mistry, Deepali Mistry, Pankaj Khandelwal, Anand Naregal, Ankur Vaishnav, Harendra Chauban, Baroda Laparoscopy Hospital, Baroda Imaging Center, and Sterling Hospital, Vadodara, Healing Touch Hospital, Bharuch

Introduction: Pancreatic injury during blunt abdominal trauma is rare, complete pancreatic transection is even rarer. Management of pancreatic injury usually depends on pancreatic ductal injury and associated other abdominal organ injuries. CT scan of abdomen is a preferred investigation for pancreatic injury evaluation. Management of complete pancreatic transection is controversial especially when patient is minimally symptomatic. We present our experience of managing patients with complete pancreatic transection. Methods: We operated six patients of complete pancreatic transection following blunt trauma abdomen from March 2015 to June 2016. Five were males and one was female. We reviewed patients’ demographic details, mode of injury, interval between injury and operation, indications of operation, operative findings, associated injuries, postoperative morbidity and mortality. High velocity road traffic accident was the commonest cause in adult patients, CT scan was the preferred investigation and all patients underwent surgery. The commonest indication of surgery in patients without other organ injury was pancreatitis (3 patients), other indications were hemoperitoneum in hemodynamically unstable patients (1 patients), peritonitis due to duodenal injury (1 patient), refractory pancreatic ascites (1 patients). In 3 patients who developed pancreatitis, symptoms were started developing on day 3 of injury. In one patient contrast enhanced CT scan missed pancreatic transection on day 1 of injury; this was detected on day 3 on repeat pancreatic protocol CT. Two out of 6 patients had mortality, one died due to pulmonary embolism and second due to sepsis and multiorgan failure. Conclusions: Complete pancreatic transection following blunt abdominal trauma is rare, usually happens following high velocity trauma. Pancreatic protocol CT scan of abdomen is the preferred investigation for evaluation, repeat scan is advisable if pancreatic injury is strongly suspected as immediate CT may miss pancreatic injury. Management of complete pancreatic transection is controversial especially when patient is minimally symptomatic. Based on our limited experience, we feel that patients with isolated pancreatic transection with minimal symptoms should be operated upfront as once pancreatitis sets in; it increases the risk of morbidity and mortality. This needs further validation.


P19
Mediastinal Pseudocyst– Varied Presentations and Management. Durairaj Segamalai, Madras Medical College, Chennai

Introduction: Pseudocysts are a recognised complication following acute or chronic pancreatitis. Usually located in peripancreatic areas, they have also been reported to occur in atypical regions like liver, pelvis, spleen and mediastinum. Mediastinal pseudocysts are a rare entity, and present with myriad of symptoms due to its unique location. They are a clinical challenge to diagnose and manage. In this paper, we describe the clinical and radiological characteristics of mediastinal pseudocysts in 7 of our patients, as well as our experience in managing these patients along with their clinical outcome.

Methods: This study is a retrospective analysis of patients diagnosed to have Mediastinal Pseudocyst between Jan 2010 to March 2016 at our Institute.

Results: Our analysis reveals that Chronic pancreatitis was present in 6/7 patient with mediastinal pseudocyst. With Ethanol being the most common etiological factor causing Chronic Pancreatitis in 5/6 patients and it was idiopathic in the other patient. Acute necrotising pancreatitis was observed in one patient who presented with mediastinal pseudocyst. Almost all of the patients had abdominal pain in addition to symptoms attributed to Mediastinal pseudocyst like dyspnoea (n=3), dysphagia (n=2), chest pain (n=2), retrosternal discomfort (n=1). The size of the pseudocyst encountered in this series range from 3 cm to 8 cm (mean=5.7cm). All the patients had abdominal Pseudocyst. Two patients had dysphagia due to compressive effects of pseudocyst on the esophagus. One of the patient, who had dysphagia with considerable weight loss (>15% in 3 months) was referred to our unit as Achalsia cardia on the basis of barium swallow report and he was totally relieved of his symptom following internal drainage. Two patients who presented with dyspnoea had severe left ventricular dysfunction, due to compressive effects on cardiac chambers, which improved following treatment. Pleural effusion was observed in 71% (n=5). Vascular complications like Inferior phrenic & Intercostal artery pseudoaneurysm was observed in one patient, while another patient had Brachio-cephalic and left IJV thrombosis. Internal Drainage in the form of Cystogastrostomy was performed in 4 patients, while Frey’s procedure was done in one patient. Two patients required Multiple PCD’s and intercostal drainage. Angioembolisation with coils for multiple pseudoaneurysm was performed in the patient with Inferior phrenic & Intercostal artery pseudoaneurysm, while another patient developed splenic artery pseudoaneurysm in the follow up period and required angioembolisation. Patient with brachio-cephalic and IJV thrombosis was recanalization of veins following anticoagulant therapy for 6 months. Conclusion: Mediastinal pseudocyst is a rare complication following acute or chronic pancreatitis, which should be kept in mind in a patient presenting with atypical symptoms. Thorough evaluation guides to the optimal treatment required. Traditional surgical drainage which treats the underlying pancreatic disease, including ductal decompression or pseudocyst decompression is effective. Radiological interventions are a useful adjunct to surgical management. Mediastinal pseudocysts often require multiple expertise and should be managed in centers with such expertise.

P20
Pancreatic Parenchyma Preserving Resections. Parvezikbal Ilahi Jamadar, KEM Hospital, Pune

Standard pancreatic resections, such as pancreaticoduodenectomy, distal pancreatectomy, or total pancreatectomy, result in an important loss of normal pancreatic parenchyma and may cause impairment of exocrine and endocrine function. Whilst these procedures are mandatory for malignant tumors, they seem to be too extensive for benign or border-line tumors, and pancreatic trauma especially in patients with a long life expectancy. In recent years, there has been a growing interest in parenchyma-sparing pancreatic surgery with the aim of achieving better functional results without compromising oncological radicality in patients with benign, border-line or low-grade malignant tumors. Several limited resections have been introduced for isolated or multiple pancreatic lesions, depending on the location of the tumor: central pancreatectomy, duodenum-preserving pancreatic head resection with or without segmental duodenectomy, inferior head resection, dorsal pancreatectomy, excavation of the pancreatic head, middle-preserving pancreatectomy, and other multiple segmental resections. All these procedures are technically feasible in experienced hands, with very low mortality, although with high morbidity rate when compared to standard procedures. Pancreatic endocrine and exocrine function is better preserved with good quality of life in most of the patients, and tumor recurrence is uncommon. We operated 10 patients in KEM hospital. 7 for pancreatic tumours 3 for trauma. We followed up for 3 yrs. No patient had recurrence. 2 had fistula out of which 1 pt settled with conservative management 1 was explored.

P21
Primary Early Surgical Management Of Pancreatic Ascites (PA) in Chronic Pancreatitis – A Single Centre Experience. Soma Sekar, Madras Medical College, Chennai
**Introduction:** The traditional method of managing PA with initial conservative treatment is associated with increased morbidity and mortality especially in chronic pancreatitis. Our treatment protocol lays emphasis on early surgical intervention and early enteral nutrition decreasing the use of TPN and its ensuing complications. Methods: This is a prospective study of 16 cases of chronic pancreatitis with PA managed from Jan 2013 to Aug 2015. All cases were males with ethanol induced chronic pancreatitis and PA with a mean age of 37 years. A standard protocol was followed with initial percutaneous catheter drainage of the ascitic fluid which improved patient discomfort. Patients were also started on early enteral high protein diet to improve the nutrition. After initial optimization, MRCP was used to identify the site of pancreatic ductal disruption. Then early (defined as within 10 days of admission) surgical intervention was done. Of the 16 cases, 12 underwent early primary surgery and the rest improved with conservative treatment within a week. Lateral Pancreaticojejunostomy- 5, Freys procedure- 2, Distal pancreatectomy with splenectomy and Freys- 5. Results: The mean duration of hospital stay was 16 days in the early primary surgery group with 40% reduction in total cost. There was no mortality. Conclusion: Early primary surgery for PA in the setting of chronic pancreatitis leads to faster recovery of the patient and it takes care of the primary pathology also. Primary surgery decreases patient morbidity, cost effective and avoids the complications of TPN.

**P22**
**Binding Pancreatogastrostomy- Technique video and review of initial experience at a tertiary care centre.**
*Phani Krishna Ravula, Pace Hospitals, Hyderabad*

**Aim:** To demonstrate technique of binding pancreaticogastrostomy (PG) and report outcomes in comparison with previous experience. Methods: In from September 2015 till June 2015 15 patients underwent whipples pancreaticoduodenectomy in our institution with reconstruction with binding PG technique. records were reviewed and compared with past experience with pancreatojejunotomy(PJ). Results: Incidence of pancreatic fistula was Type A (9/30, 28%) Type B (3/30, 10%) and Type C (1/30, 3%) in the PJ group. With PG binding technique there were no leaks in Type A, B and C category. 2/15 had delayed gastric emptying in the PG binding group. There was no mortality in binding PG group and one mortality in PJ group. Conclusion: We demonstrate technique of binding PG and our initial expertise shows that with low rate of clinical and biochemical leak it may represent an ideal technique of reconstruction after PD.

**P23**
**An unusual presentation of a rare pancreatic neoplasm.**
*Rohit Gaurav, Sanjoy Mandal, Medica Superspeciality Hospital, Kolkata*

**Introduction:** Pleomorphic undifferentiated sarcomas usually arises from the extremities with the retroperitoneum being the second most common site. Sarcomas of the pancreas are exceedingly rare. We are presenting a patient with an undifferentiated high grade sarcoma of the pancreas which presented as a pancreatic abscess. The Case: A 34 year old male patient admitted to the surgery clinic with vomiting, persistent abdominal pain, high fever and weight loss of two months duration. He had no other co-morbidity. The remaining physical examination was unremarkable. Abdominal contrast enhanced computed tomography (CT) showed organized collection at pancreatic tail with predominant solid component, hepatomegaly and multiple collaterals at splenic hilum. Results of laboratory examinations revealed anaemia with haemoglobin of 5.3 gm%, leucocytosis with count of 27700, CRP of 285 and CA 19-9 of 27.3 U/ml. CT guided percutaneous drainage was attempted but failed. A provisional diagnosis of pancreatic abscess was made. Exploratory laparotomy was planned for drainage of collection. During surgery, a large mass of about 8x6 cm involving body, tail and neck of pancreas containing frank pus was observed with some solid component. Splenic artery, common hepatic artery, left gastric artery and portal vein were free from the mass. No regional lymphadenopathy or liver lesions to suggest metastases were identified. The rest of the intra-abdominal organs were essentially normal. It was initially thought to be an inflammatory mass. The abscess cavity was drained and wall of the abscess cavity was sent for frozen section which was reported as spindle cells seen. A repeat frozen section revealed similar findings. Subsequently the patient underwent distal radical pancreatectomy with splenectomy and an abdominal drain was placed. He had a stormy postoperative course and developed stress induced cardiomyopathy. He required ventilatory support in the ICU and was subsequently discharged on the 16th postoperative day. The pathological specimen consisted of pancreatic body and tail with spleen. On histopathologic examination, grossly it showed tumour with variigated surface, necrosis, haemorrhage and cyst formation. On microscopic examination, tumour was composed of pleomorphic spindle cell arranged in storiform pattern and at places having epitheloid appearance. Multinucleation was seen with vast areas of necrosis. Mitotic figures were in the range of 2-4/HPF. Surgical margins were free of tumour. On immunohistochemistry, Ki-67 immunoexpression was seen in 80% of malignant cells. The sarcoma was labelled as undifferentiated with negative reactivity with Pan-CK, CD56, CD117, CD34, Vimentin, Desmin, S100, SMA, Myo-D1, EMA and CD68. He received 6 cycles of adjuvant chemotherapy with Aeadriamycin and Ifosphamide. He is currently on follow up for the last 10 months and is disease free. Conclusion: A high leve of suspicion is deemed necessary otherwise the correct diagnosis can be missed.
**P24**

Primary Ewing's Sarcoma of the Pancreas: A case report and review of the literature. Ankush Kalyan Golhar, Samrat Ray, Shashi Dhawan, Ushant Dhir, Saumitra Rawat, Beate Haugk, Suresh Singhvi, Sir Ganga Ram Hospital, New Delhi

Ewing's sarcoma is a tumor of mesenchymal origin and a part of the Ewing's family of tumors (EFT) which includes other small round blue cell tumors like peripheral primitive neuroectodermal tumors (pPNET) and Askin's tumor. The genetic change common to these tumors is a translocation that disrupts the EWSR1 gene located at 22q12 to create novel fusion gene that is central to the pathogenesis of EFT. Ewing's tumor is the second most common tumor of bone i.e. Ewing's sarcoma of bone (EBS) but can also arise from soft tissues i.e. Extrasosseous Ewing's sarcoma (EES). These tumors also share certain clinical features like peak during the second decade of life, aggressive clinical behavior and high chances of recurrence. Even though they are very rare tumors with atypical presentation, they should be considered in the differential diagnosis of atypical pancreatic masses in young patients. We report a case of a 17 years old girl with primary pancreatic head Ewing's sarcoma and provide a brief review of the available literature.

**P25**

Video Assisted Open Necrosectomy. Abhishek Arun Bhagwat, Santosh Gudimani, Mustafa Razvi, Mohan Narasimhan, Ramesh Ardhanari, Meenakshi Mission And Research Center, Madurai

The traditional approach to the treatment of necrotizing pancreatitis with secondary infection of necrotic tissue is open necrosectomy to completely remove the infected necrotic tissue. This invasive approach is associated with high rates of complications (34 to 95%) and death (11 to 39%). After the PANTER trial, as an alternative to open necrosectomy, less invasive techniques are increasingly being used. These techniques are performed in a step-up approach which includes using pigtails initially and later if required go for necrosectomy. As compared with open necrosectomy, the step-up approach aims at control of the source of infection, rather than complete removal of the infected necrotic tissue. Here with this video we present our technique of necrosectomy. This was 45 year old gentleman who presented to us with alcohol induced necrotizing pancreatitis. Pigtail tract was dilated and laparoscope was used for better visualization. Video assistance helped in better visualization of necrotic cavity, its removal & thorough hemostasis. Post-operatively patient faired well without any complications. This technique we have practiced over last decade and has given very satisfying results.

**P26**

Initial experience of artery first approach in laparoscopic pancreatoduodenectomy. Vivek Kaje, GEM Hospitals And Research Centre, Coimbatore

Introduction: Minimally invasive laparoscopic pancreatoduodenectomy is technically feasible and safe. An artery first approach to pancreatoduodenectomy is a critical technique to assess the complete oncological resection before an irreversible step is taken and to reduce the blood loss during the surgery. Artery first approach in laparoscopic pancreatoduodenectomy has an advantage in addition to that offered by minimally invasive surgery, the ability to assess the complete oncological clearance in the initial course of surgery. We share our experience of artery first approach in laparoscopic pancreatoduodenectomy.

Methods: Data of 9 patients undergoing elective laparoscopic pancreatoduodenectomy with one of the 3 artery first approaches (right posterior, medial uncinate, mesenteric) to SMA during January 2016 to July 2016 are retrospectively analyzed.

Results: Among 9 patients, carcinoma head of pancreas was seen in 3 cases, distal cholangiocarcinoma in 2 cases, duodenal adenocarcinoma in 2 cases, ampullary carcinoma in 1 case and neuroendocrine tumor of head of pancreas in 1 patient. 5 patients were males and 4 were females. Mean age of the patients was 61 (+/-7.81) years. Mean duration of the surgery was 324.44 (+/-21.13) mins. Mean blood loss during the surgery was 214.4 (+/-84.61) ml. All the cases were successfully completed by laparoscopic technique and no conversion was required. No intraoperative complications were seen. Average size of the tumor was 2.4 (+/1.01) cm, average number of lymph nodes harvested during the surgery 18.4 (+/-4.04). Mean diameter of main pancreatic duct was 4 (+/-1.66) mm, mean diameter of CBD was 12.4 (+/-4.28) mm. The mean postoperative hospital stay was 11.11 (+/-1.9) days. R0 resection was achieved in all the cases. There was no mortality, however 1 patient developed delayed gastric emptying, 3 patients had Grade A pancreatic fistula, none of them developed Grade B or C pancreatic fistula and post pancreatoduodenectomy haemorrhage was seen in 1 patient. Post operative period of three patients was complicated by significant diarrhea requiring antidiarrheal medications. Conclusion: Artery first approach in laparoscopic pancreatoduodenectomy is safe and feasible.

**P27**

Management Of Delayed Arterial Haemorrhage In Post Pancreatic Surgery Scenario: A Single Institute Experience As Case Series. Sugi Subramaniam, Govt Stanley Medical College, Chennai

Introduction: Pancreatic surgeries are regarded as one of the complex surgeries which requires intense post operative
management mainly because of the complications associated with that and the resulting high morbidity and mortality. Post Whipple's procedure the incidence of delayed arterial haemorrhage as been reported to be as low as 3% (2-4%), but carries a high mortality rate with one in three cases succumbing to the GI bleed (33%). Delayed arterial haemorrhage is defined as bleeding any time after 48 hours post surgery which can be either revealed blood loss (i.e in abdominal drains, hemetemesis or malena) or concealed blood loss (in form of cardiovascular collapse or hemoglobin drop necessitating blood transfusions). The overall incidence of delayed arterial haemorrhage post major pancreatic surgeries has not been well documented. The ideal management plan is still unclear, clouded by unwarranted re-laparotomies and unnecessary time delays in decision making. The Cases: Between July 2013 and June 2016, 322 major pancreatic surgeries have been performed in our Institute. This includes 106 Pancreaticoduodenectomies, 10 Distal pancreatectomies, 123 Frey's/Lateral pancreaticojejunostomy procedures, 30 Cystogastrostomies, 9 cystojejunostomies, 24 Transperitoneal necrosectomies and 20 Retroperitoneal necrosectomies. There were a total of 7 cases of delayed arterial haemorrhage managed during the last 3 years with nil mortality. This includes 4 cases operated at our Institute (1.24%) and 3 cases that were operated elsewhere and referred to our centre for management of delayed arterial haemorrhage. All 7 cases were managed with either angioembolisation or relaparotomy and ligation of the source of bleeding or combination of both. Conclusion: This case series depicts our experience with delayed arterial haemorrhage after pancreatic surgeries and discusses the sequential and timely management plan which incorporates the role of angiograms, interventional radiological procedures, endoscopy and relaparotomy.

P28
Analysis Of Etiology Of Acute Pancreatitis In Female Patients. Nigil Abdul Jalal, Kasturba Medical College, Mangalore

Introduction: Acute pancreatitis is a common and potentially lethal inflammatory process with a highly variable clinical course. Although much has been studied about the etiology of acute pancreatitis and its management and though roughly equal proportions of men and women develop acute pancreatitis, gender distribution difference based on etiology has not been studied in detail and this study aims to analyse the same. Aims: To analyse the etiology of acute pancreatitis in female patients and how gender distribution differs based on etiology of the disease. Methods: This is a retrospective study on admitted female patients with a first attack of acute pancreatitis from time period September 2015 to September 2016 in a tertiary teaching hospital in southern India. Criteria for diagnosis of acute pancreatitis are characteristic abdominal pain, serum amylase values more than thrice the upper limit of normal and imaging evidence. Currently, 30 patients were studied. Statistical analysis done using independent t test. A "p" value of less than 0.05 was considered to be statistically significant. Results: Of the 30 patients studied, 12 (40%) patients had gall stone pancreatitis, 7 (23.3%) patients had alcohol-related pancreatitis and 3 (10%) patients had pancreatitis due to other rare causes. It has also been found that in a significant proportion of female patients with acute pancreatitis (8 patients, 26.7%), the etiology has been classified as idiopathic. This study shows that gender distribution differs based on etiology of acute pancreatitis, with the female population having a predominance of gall stone pancreatitis as opposed to alcohol related pancreatitis which is more commonly seen in male patients. Analysing the etiology of acute pancreatitis in female population helps to provide targeted management for the disease, rather than pursuing a blanket treatment for all patients with acute pancreatitis, which significantly improves the outcome and reduces the severity of acute pancreatitis amongst female patients.

P29
Ruptured Splenic Artery Pseudoaneurysm with spontaneous colon fistula presenting as a massive lower gastrointestinal bleeding– A rare case report. Villalan Ramasamy, Armarjothi JMV, Gnanasekar Murugaiyan, Amudhan Anbalagan, Anand Laxmanan, Kannan Devy Gounder, Madras Medical College, Chennai

Introduction: Ruptured Splenic Artery Pseudoaneurysm with splenic vein thrombosis Coexisting With Fistula to the Colon presenting as massive lower gastrointestinal bleed is a rare complication of pancreatitis. The Case: A 30 years old male who presented with complaints of abdominal pain, distension and Hematochezia for 10 days was treated conservatively outside with massive blood transfusion and then referred to our hospital for further management. He was a chronic alcoholic and smoker with previous history of acute pancreatitis which was managed conservatively 9 months back. He had marked pallor and tachycardia on admission. On palpation, he had tenderness in upper abdomen and splenomegaly. His hemoglobin dropped from 8 to 6 gms%. CECT abdomen showed Pseudo aneurysm possibly arising from splenic artery with rupture and associated splenic vein thrombosis. Portal vein, SMV appeared normal. E/o Suspicious hypodensity noted involving spleen with splenic cyst- ?spleenic infarct. Multiple collaterals noted in perigastric and splenic hilar regions (secondary to splenic vein compression). Upper GI endoscopy showed fundal varices. Pt was resuscitated and taken up for emergency laparotomy. Surgical exploration revealed Splenomegaly, Gastrospenic collaterals, Splenic hilar collaterals,
perigastric collaterals, 10*8 cm aneurysm arising from mid splenic artery with fistulous communication between the psuedoaneurysm and splenic flexure of the colon. A Distal pancreatectomy with splenectomy with segmental colon resection with colocolic anastomosis was performed. Pt developed signs of anastomotic leak on POD4 for which an emergency relaparotomy with Rt hemicolecctomy and end ileostomy was performed. Patient gradually recovered and discharged on day 12. Conclusion: Due to life threatening complication, prompt diagnosis and early intervention is the key for successful outcome in acute pancreatitis sequelae. Emergency surgery is an effective strategy for controlling gastrointestinal bleeding for ruptured splenic arterial pseudoaneurysm in hemodynamically unstable patient, where the option for interventional radiological procedure is limited. We present this case of pseudoaneurysm with rupture into colon, presenting as hematochezia for its rarity.

**P30**


**Introduction:** The management of locally advanced pancreatic cancer with vascular involvement has been evolving over time with major venous involvement no longer considered a contraindication to resection. We present a case of carcinoma head of pancreas involving the superior mesenteric artery (SMA) and superior mesenteric vein (SMV). **The Case:** A 57 years old hypertensive and diabetic male was evaluated for pain abdomen and was diagnosed with carcinoma head of pancreas. Positron emission tomography-computed tomography (PET-CT) pancreatic protocol showed a FDG avid 3.7x3.3x2.8 cm pancreatic head mass abutting the SMV and encasing (>270°) SMA 1.5 cm distal to it origin for an approximate length of 3.5 cm. There was no evidence of discontiguous or distant nodal spread. The patient was planned for Whipple's pancreaticoduodenectomy with SMA and SMV reconstruction. After standard exploration, a full Cattel-Braasch and an Extended Kocher's manoeuvre was performed. The lesser sac was opened for a full view of the pancreas. The SMA was then approached first via the posterior retroperitoneal, the uncinate, the infra- and supracolic approaches, and was slung proximally and distally where found free of tumor - in the first 1.5 cm of its origin, and then in the root of the mesentery at the level just distal to the first jejunal branch, respectively. The SMV was identified below and above the mesocolon and the portal vein supra-duodenally – and slung in all three sites. The feasibility of an R0 resection was thus confirmed with the planned SMV and SMA resection and reconstruction.

The CBD along with the gall bladder, distal stomach and the proximal jejunum were transected. A ringed PTFE 8mm graft was anastomosed infra-renaaly to the aorta and left ready. The SMV was transected below the 3rd part of duodenum, and the portal vein supraduodenally, and an interposition venous conduit placed to establish portal venous continuity and bowel drainage. The body of the pancreas was divided, splenic vein and IMV were ligated and divided, the proximal SMA was ligated just beyond its origin and divided, and again distally beyond the first jejunal branch, and the specimen removed. The distal end of PTFE graft was then anastomosed to the distal SMA (ischemia time 20 minutes). Intra-operative Doppler showed normal blood flow in the reconstructed vessels. A segment of 20 cm of jejunum was found to be ischemic which was resected. In the post-operative period there was no vascular complication. On POD 12 the patient had chylous ascites which was managed with total parenteral nutrition (TPN) for 2 weeks. The histopathological examination of the resected specimen showed poorly differentiated adenocarcinoma (G3pT4 N1) invading the SMV with all resection margins free of tumour. The patient is well at 10 months without recurrence. **Conclusion:** This case demonstrates the technical feasibility of combined SMV and SMA resection/reconstruction in experienced centres in locally advanced carcinoma head of pancreas with vascular invasion, without any associated increase in morbidity. Long-term benefit remains to be ascertained.

**P31**

Analysis of Intraoperative Pancreatic Fluid Aspirate in Patients with Chronic Pancreatitis Undergoing Lateral Pancreatic Jejunostomy. Kinnera Reddy, Yogesh Kumar, Kasturba Medical College, Manipal University, Mangalore

**Introduction:** Chronic pancreatitis is a progressive inflammation of the pancreas leading to permanent anatomical as well as functional damage. Lateral pancreaticojjunostomy is one of the most commonly employed drainage procedure used for its treatment. The intra-operative pancreatic duct aspirate is an important source to analyse the lithogenic property, cytodiagnosis to suspect occult neoplasms and to isolate the causative organism. **Aims:** To analyse the intra-operative pancreatic duct aspirate during lateral pancreaticojjunostomy in the form of cytology, culture and antibiotic sensitivity and lithogenicity. **Methods:** It is a prospective and observational study of 18 months duration conducted in the hospitals of KMC, Mangalore. In the current study with patients undergoing Lateral Pancreaticojjunostomy study, the pancreatic duct aspirate was carefully collected and sent for analysis. **Results:** Total number of cases studied are 22. The aspirate culture was positive in 5 patients (E.coli in 4 patients and Citrobacter and Enterobacter fecalis in one patient). Cytodiagnosis was negative for all patients the
mean calcium levels of patients were within normal limits. **Conclusion:** The intra-operative pancreatic duct aspirate is a useful source to isolate the organism and to study the antibiotic sensitivity. E. Coli was the most common organism isolated in the study group. More number of cases may be required to assess the role of cytodiagnosis and to predict the histogenicity.

**P32**

**The Effect Of Braun’s Enterointerostomy On Delayed GastricEmptyingFollowingPancreatoduodenectomy.**

*Nishant Pathak, C Sudeep Naidu, Pankaj P Rao, AK Singh, Sanjay Sharma, Vikram Trehan, Amit Gaur, SV Kulkarni, Army Hospital (R&R), New Delhi*

**Introduction:** Delayed gastric emptying (DGE) has been the most common complication after Whipple pancreaticoduodenectomy (PD). Recent studies have revealed that the addition of Braun’s enterointerostomy (BEE) may reduce the incidence of DGE. **Methods:** Between Feb 2014 to Apr 2016, 42 patients underwent Whipple operation and a BEE was added to all these patients [BEE group]. The demographic, operative and post operative profile of these patients were recorded and compared to our historical control of 47 patients in whom BEE was not added during PD [Non BEE group]. The data was analyzed and compared. Pearson Chi square test was used to compare our results with historical controls. The significance level was 0.05. **Results:** All patients underwent Whipple PD. The NG tube was removed after a mean of 3.4±2.6 days and oral fluids were tolerated after a mean 5±3.14 days. Solid food was tolerated on mean post op day 7.6 ± 3.2. Vomiting after removal of the NG tube was observed in 14% patients and NG tube was reinserted in 7% of the patients. DGE was significantly less in the BEE group (3/42, 7%) as compared to the Non BEE group (11/47, 23.4%) which was statistically significant. (p< 0.05). There was no statistical difference in the operative time, intraoperative blood loss, ICU stay or total hospital stay between the two groups. No postoperative complications were directly attributable to BEE. **Conclusion:** Addition of BEE significantly decreases DGE after Whipple PD.

**P33**

**Diagnostic Accuracy of Platelet Lymphocyte Ratio (PLR) In Pancreatic Adenocarcinoma.** *Shanivas K, Govt medical college, Thiruvananthapuram*

**Introduction:** Pancreatic head masses constitute an important clinical entity in gastrointestinal surgical practice. Most common being adenocarcinoma of head of pancreas followed by inflammatory masses due to chronic pancreatitis. Accurate diagnosis is of central importance as therapeutic strategies range from observation to drainage to complete surgical removal. Several tumour markers are available which could help in prognostication and diagnosis of carcinoma pancreas. Carbohydrate antigen 19-9 (CA 19-9) is traditionally accepted best marker available but it uses is limited in cases of biliary obstruction. It has been reported that pancreatic adenocarcinoma is one of the tumour in the body produce maximum inflammatory response, produce lymphopenia and thrombocytosis. So its ratio (PLR) considered as an accurate marker of systemic inflammatory response. The role of new tumour marker platelet lymphocyte ratio (PLR) has been defined recently in prognosticatation of carcinoma pancreas. Role of PLR and its efficacy to diagnose pancreatic adenocarcinoma is not known. **Aims:** To find out accuracy of Platelet lymphocyte ratio (PLR) as a new diagnostic marker for pancreatic adenocarcinoma. **Methods:** It’s a prospectively diagnostic evaluation test study conducted between September 2014 to December 2015 in department of surgical gastroenterology, Trivandrum medical college. 25 cases of biopsy proven pancreatic adenocarcinoma (PAC) and 22 cases of biopsy proven benign inflammatory head masses (CCP) included in the study. Total blood count and CA-19-9 of all the patients were done from clinical pathology lab, Medical College, Trivandrum. Excluded all other head masses of pancreas and patients having features of cholangitis and recent blood transfusion, blood dyscrasias, cirrhosis with portal hypertension, chronic renal failure, autoimmune diseases. **Results:** Out of 25 patients with PAC 19 patients were males and in CCP with head mass out of 34 patients 24 patient were males. After comparing the total count not much difference (PAC- 7789 vs CCP- 7568), but mean lymphocyte count (PAC- 2235 vs CCP-2701) and mean platelet count shows (PAC- 3.56 Lakh and in CCP it is 2.45 Lakh) significant difference. The mean PLR was in PAC is 165.99 and 91 in CCP. The median CA19-9 value was 69.3 in PAC and 13.9 in CCP. Plotting the ROC curve was found that the area under the curve maximum for PLR (88.7%) compared to CA19-9 (77.8%) in diagnosing pancreatic adenocarcinoma (p<0.0001). Using the coordinates of ROC PLR cut-off was 113.45 with a sensitivity 79.4% and specificity 92.6% and CA 19-9 cut-off value is 25.3 with sensitivity 73.5% and specificity 77.8%. **Conclusion:** PLR can be used as a diagnostic marker and seems to be used to differentiate benign inflammatory head mass from adenocarcinoma and its need more validation in large number of populations.

**P34**

**Biliary drainage does not affect postoperative infective complications after Pancreatoduodenectomy.** *Hari Govind, GB Pant Hospital, New Delhi*

**Introduction:** Pre-operative biliary drainage is considered as a risk factor for postoperative infective complications (POIC) after Panreatico-duodenectomy (PD). **Aims:** To evaluate effect of preoperative endobiliary drainage on...
POIC occurring after PD. **Methods:** This retrospective study included patients who underwent PD (Whipple's method) by a single surgical team from March 2009 to March 2016. Demographic, clinical, surgical, postoperative, microbiological and pathological data were collected. Appropriate statistical tests were applied and p value <0.05 was considered significant. **Results:** Out of 48 patients who underwent PD, five patients were excluded from the study. Of out of five excluded patients, one died in immediate postoperative period and microbial culture reports of four patients were not available. Total 43 patients were considered for the analysis, 28 patients had preoperative biliary drainage (BD) and 15 patients had no preoperative biliary drainage (ND). Demographic, clinical and surgical parameters were comparable between two groups. Twenty five (89.2%) patients in BD group and 7 patients (46.67%) in ND group showed bacterial growth in bile and/or in stent culture (p=0.004). Sixteen patients (57.1%) of BD group and six patients (40%) of ND group had POIC (p=0.347). Post-operative culture from infected site of patients in BD group showed bacterial growth similar to intra-operative bile and stent culture in 9 and 3 patients respectively (p=0.03). **Conclusion:** Preoperative biliary drainage predisposes to bacterial colonization but it does not affect postoperative infective complications occurring after pancreaticoduodenectomy. Antibiotic therapy in these patients should be more often guided by bile culture report rather than stent culture report.

**P35**

**Delayed gastric emptying after Whipple's pancreaticoduodenectomy in a tertiary care hospital: Analysing risk factors.** Vivek Aery, Vijay Kumar Bada, Balbir Singh, Pavan Kumar, Global Hospital, Hyderabad

**Introduction:** Whipple's pancreaticoduodenectomy is considered to be one of the most technically demanding surgical procedure, since few years it has evolved into a safe operation with acceptable perioperative mortality (<5% at high-volume centres), although morbidity remains substantial, with delayed gastric emptying being the frequent cause of morbidity, prolonged hospital stay and readmission after a pancreaticoduodenectomy. The clinical risk factors of delayed gastric emptying in patients after pancreaticoduodenectomy remains controversial. The present study was done at our centre to evaluate the prevalence of DGE and to analyse risk factors for same. **Methods:** This cross-sectional study was conducted from March 2014 to March 2016 in the Department of Surgical Gastroenterology, Global Hospitals, Hyderabad, India in which 30 patients who underwent classical Whipple's Pancreaticoduodenectomy were included. The level of confidence of 80% was taken for this study. Binary logistic regression models were used to assess risk factors associated with the development of clinically significant DGE as per ISGPS grading. **Results:** DGE occurred in 10 cases (33.3%). As per ISGPS criteria grade A DGE was seen in 2 patients (6.66%), grade B DGE in 4 patients (13.3%) and grade C DGE also in 4 patients (13.3%). Mean age of the population in DGE group was 61.3 years with S.D of 8.59 and was 60.55 years with S.D of 10.68 in non DGE group. Postoperative complications like abdominal collection, wound infection, reoperation and postoperative haemorrhage were significantly associated with delayed gastric emptying (p<0.05), though postoperative pancreatic fistula was not significantly associated with DGE in our study. DGE increased the length of hospital stay and eventually the expenses for patient. Mean length of hospital stay in DGE group was 19 days with S.D 3.16 and in non DGE group it was 9.7 days with S.D of 1.3 which was significant (p <0.001). Various preoperative and intraoperative factors including age, sex, BMI, etiology, diabetes, hypertension, jaundice, preoperative biliary drainage, operative time, gastrojejunostomy (antecolic/retrocolic) and blood transfusion were not associated with DGE (p>0.05). **Conclusions:** Our study demonstrate that DGE is associated with significant other sequelae including increase in length of hospital stay. Postoperative complications were identified to be strongly associated with DGE which is in corroboration with previous studies. No preoperative and intraoperative factors had significant association with DGE. Knowledge of these risk factors may assist in early identification of vulnerable patients and help in managing DGE.

**P36**

**Preoperative endoscopic tissue sampling is not useful in Periampullary tumours.** Hirdaya H Nag, Hari Govind, Pushap Sheetal, Puja Sakhija, GB Pant Hospital, New Delhi

**Introduction:** Preoperative endoscopic tissue sampling is routinely practiced in patients with suspected periampullary tumors (PAT) without supportive evidence. **Aims:** To study impact of preoperative endoscopic tissue sampling in the management of patients with suspected periampullar tumors (PAT). **Methods:** This retrospective study was conducted on patients with suspected PAT who were managed by a single surgical team from March 2009 to March 2016. Appropriate statistical methods were applied and p value <0.05 was considered significant. **Results:** Out of total 50 patients, 10 patients were excluded from the study. Among excluded patients, 7 had unresectable disease and 3 had no preoperative endoscopic tissue sampling. Forty patients with suspected PAT had preoperative endoscopic tissue sampling report and they were included in the study. Microscopic report was suggestive of cancer in 32 patients (group A) and in no cancer was detected in 8 patients (group B). Demographic, clinical and surgical characteristics were comparable between both the groups. Final histopathology report was
cancer (adenocarcinoma) in 31 (96.8%) patients of group A and 7 (87.5%) patients of group B [p= 0.364]. AJCC seven TNM stage was also similar between both the groups. **Conclusion:** Preoperative endoscopic tissue sampling is not always useful in patients with periampullary tumor.

**P37**
**Risk Factors For Predicting Malignancy In Chronic Calcific Pancreatitis With Head Mass: Towards A Risk Scoring System.** Kartik Kulshrestha, PVS Hospital, Cochin

**Background:** Chronic pancreatitis (CP) increases the risk of developing pancreatic cancer which often presents as a mass lesion in the head of pancreas. Mass lesion in the head of pancreas can also occur secondary to an inflammatory lesion and with all available tests differentiating between these is often difficult. Recognizing malignancy in CP is crucial to plan optimal surgery and good long term results. **Aim:** To identify factors for predicting the risk of malignancy in patients with a diagnosis of chronic calcific pancreatitis with head mass and formulate a scoring system. **Methods:** Retrospective data of 4 previous years of patients who underwent surgical intervention for Chronic Calcific Pancreatitis with head mass was collected. The data included patient details, clinical history, biochemical profile (LFT, CA19-9), imaging findings (CT abdomen and EUS), operative details and the final histopathology findings. The data was analyzed using chi square test for categorical data. Comparison of the laboratory parameters and radiological features between these two groups of patients with benign and malignant features was performed by Mann Whitney U test. ROC curve analysis was used for determining the appropriate cut off points of each variable. Logistic regression using univariate analysis was carried out for finding the significant variables. Multivariate analysis was performed on the variables found to be most significant on univariate analysis. **Results:** A total of 38 patients underwent surgical intervention for CCP with head mass. 21 of them had benign disease and rest malignant. On analysis, Duration of diabetes, recent aggravation of diabetes, loss of weight, Hypodense lesions on CT, CBD obstruction on CT, Hypoechoic lesions on EUS, CBD diation on EUS were found to be significant. Serum values of CA19-9>115, S.Bilirubin>2.5 mg%, Direct Bilirubin>1.5 mg%, ALP>321, SGOT>70 and SGPT>72 were found to be significant. On multivariate analysis, none of the factors were found to be significant, hence a scoring system could not be formulated with the available data. **Conclusion:** In our study, Duration of diabetes, recent aggravation of diabetes, loss of weight, Hypodense lesions on CT, CBD obstruction on CT, Hypoechoic lesions on EUS, CBD diation on EUS, Serum values of CA19-9>115, S.Bilirubin>2.5 mg%, Direct Bilirubin>1.5 mg%, ALP>321, SGOT>70 and SGPT>72 were found to be associated with high sensitivity and specificity for predicting malignancy in patients with chronic calcific pancreatitis and head mass. No significant factors were found on multivariate analysis. More data is required to formulate a scoring system for this clinical entity.

**P38**

**Introduction:** Minimally invasive necrosectomy compared with open necrosectomy might improve outcomes in patients with necrotizing pancreatitis, especially in critically ill patients. However, evidence from comparative studies with large sample sizes to allow evaluation of death as primary outcome and to adjust for potential confounding factors is lacking. **Methods:** We combined individual patient data from 15 published and unpublished cohorts on pancreatic necrosectomy for necrotizing pancreatitis in 65 hospitals in 8 countries. Death rates were compared in patients undergoing open necrosectomy or minimally invasive necrosectomy (i.e. minimally invasive surgical or endoscopic necrosectomy). We adjusted for confounding by three types of analyses: logistic regression, stratification according to the predicted risk of death at baseline (low: <5%, intermediate: >5% to <15%, high: >15% to <35%, and very-high: >35%), and propensity-score matching. **Results:** Among 1980 patients with necrotizing pancreatitis, 1167 underwent open necrosectomy, 467 underwent minimally invasive surgical necrosectomy, and 346 underwent endoscopic necrosectomy. There was a lower risk of death for minimally invasive surgical necrosectomy (odds ratio, 0.53; 95%-CI, 0.34 to 0.84; P=0.006) and endoscopic necrosectomy (odds ratio, 0.19; 95%-CI, 0.06 to 0.61; P=0.005). After risk stratification and propensity-score matching, minimally invasive surgical necrosectomy remained associated with a lower risk of death than open necrosectomy in the very-high-risk group (risk ratio, 0.70; 95%-confidence interval, 0.52 to 0.95; P=0.02). Endoscopic necrosectomy was associated with a lower risk of death than open necrosectomy in the high-risk group (risk ratio, 0.27; 95%-CI, 0.08 to 0.88; P=0.03) and the very-high-risk group (risk ratio, 0.43; 95%-CI, 0.24 to 0.77; P=0.005). **Conclusion:** In high-risk patients with necrotizing pancreatitis, minimally invasive surgical and endoscopic necrosectomy reduced death rates compared with open necrosectomy.
P39
Prospective study of various prognostic markers and scoring systems for predicting morbidity and mortality in acute pancreatitis. Shaifali Arvind Goel, Hitesh Chavda, Sterling Hospital, Ahmedabad

Introduction: Multifactorial scorings, radiological scores and biochemical markers may help in early prediction of severity, pancreatic necrosis and mortality in patients with acute pancreatitis. Method: Hematocrit, C reactive protein, procalcitonin, intra abdominal pressure, SIRS, BISAP, APACHE O and modified Marshall Score were calculated using data within 24 hrs of admission whereas CTSI Balthazar was calculated on day 7 from onset of symptoms. Predictive accuracy of scoring systems, sensitivity, specificity, and positive and negative predictive values of various markers in prediction of severe acute pancreatitis, transient organ failure, pancreatic necrosis, admission to intensive care units and mortality were calculated.

Result: Of 39 patients, 7 patients had persistent organ failure classified as severe acute pancreatitis, transient organ failure in 6 classified as moderate severe acute pancreatitis, 10 had pancreatic necrosis, and 3 died. Area under curves for hematocrit, CRP, procalcitonin, intra abdominal pressure, SIRS, BISAP, APACHE O, modified marshall Score and CTSI in predicting severity were 0.77, 0.80, 0.82, 0.89, 0.70, 0.88, 0.94, 0.92 and 0.86 respectively, for pancreatic necrosis 0.47, 0.69, 0.87, 0.86, 0.77, 0.66, 0.83, 0.76, and 1.00, respectively, for mortality 0.63, 0.75, 0.85, 0.95, 0.73, 0.84, 0.98, 0.88, and 0.88, respectively, for ICU admission 0.65, 0.87, 0.88, 0.88, 0.90, 0.88, 0.87, 0.75 and 0.84 respectively. Conclusion: APACHE O is found to be the most accurate predictor of severity and mortality in acute pancreatitis. A score more than 8 along with presence of SIRS is highly predictive of need for ICU admission. Procalcitonin has the highest accuracy for pancreatic necrosis if CT scan not available. Normal hematocrit at admission can limit the requirement of CECT to those who do not improve or deteriorate. Intra abdominal hypertension has high sensitivity for mortality and development of persistent organ failure.

P40
Early and Late Postoperative Outcomes of Middle Pancreatectomy. Shashikiran MS, Medical College, Thiruvananthapuram

Introduction: Tumours of neck and proximal body of pancreas pose a challenge for operating surgeons and used to be treated by classical resections of the pancreas such as or distal pancreatectomy or Pancreatodudodenectomy. These standard resections done for benign lesions invariably result in removal of large amount of normal pancreatic tissue and subject the patient to the possibility of developing post operative exocrine & endocrine deficiency. Even though enucleation is a viable option in some benign lesions, this is not possible in lesions deeply embedded in the pancreatic parenchyma or close to the pancreatic duct due to the threat of a postoperative pancreatic fistula. In these situations, middle or median pancreatectomy is a useful option for preserving normal pancreatic parenchyma and reducing incidence of exocrine and endocrine deficiency. There are roughly 200 cases reported in literature with minimal data on long term follow up. In this study, we evaluated the early postoperative outcomes, based on Clavien- Dindo and ISGPS Classification as well as exocrine and endocrine deficiency in the long term.

Methods: Analysis of prospectively collected data from January 2010 to June 2016 was carried out. Patients with lesions deemed to be benign after clinical, radiological as well as biochemical evaluation and located in the neck or proximal body of pancreas were considered for Middle Pancreatectomy. All patients undergoing pancreatic surgeries in our centre have a detailed proforma filled as to the patient demographics and operative characteristics as well as outcomes based on the International Study Group of Pancreatic Surgery (ISGPS) and Clavien-Dindo classification, which is maintained on a prospective database. Post operative fasting and postprandial blood sugar levels, Fecal Fat globules testing and weight recording were done on regular follow up. Results: A total of 7 patients underwent Middle Pancreatectomy compared to 8 distal pancreatectomies in the same period. The etiology of the lesions was as follows: SPEN: 2, Insulinoma: 2, Non-functioning NET: 1, Serous cystadenoma: 1, Serous adenoma: 1. 2 out of 7 (28.5%) patients developed Grade A POPF. None developed clinically significant pancreatic fistula (Grade B or C) as defined in ISGPS criteria. None required radiological or surgical re-intervention. PPH occurred in 1 patient (14.2%) due to a pseudoaneurysm. None had post operative diabetes and/or steatorrhea (presence of stool fat globules) or significant weight loss at a median follow up of 16 months. Longest follow up was 6 years. The postoperative outcomes as per the Clavien-Dindo Classification were Grade I– 4, Grade II– 2 and Grade IIIa 1 patient. Conclusion: Middle or Median Pancreatectomy is a feasible option for benign lesions and tumors of low malignant potential in the neck and proximal body of pancreas with minimal postoperative complications and exocrine & endocrine function preservation.

P41
Need to Optimize Maximum Surgical Blood Order Schedule (MSBOS) for Pancreatoduodenectomy. Abhinav Sengar, Savio George Barreto, Manish Kumar Singh, Adarsh Chaudhary, Medanta Hospital, Gurugram

Introduction: Unnecessary preoperative ordering of blood and blood products results in wastage of a valuable life-saving resource and poses a significant financial burden
on health care systems. To determine if the existing MSBOS for pancreatoduodenectomy (PD) is uniformly applicable, if there exist patient-specific factors that may predict the likelihood of requiring intra-operative transfusions, and if intra-operative blood transfusions impact immediate post-operative morbidity. Methods: Analysis of consecutive patients who underwent PD for pancreatic tumours between March 2010 and October 2015. Patients were divided into two groups for comparison based on whether or not the patient received an intra-operative blood transfusion (group 1- transfusion, and group 2- no transfusion). Results: 384 patients underwent a Classical PD with an estimated median blood loss of 200 cc and percentage transfused being 9.6%. There were 37 patients in Group 1 and 347 patients in group 2. The transfusion index was 0.14 and type and screen (T/S)-to-transfusion ratio was 10.4:1. On multivariate analysis, pre-existing hypertension (OR 3.272), synchronous vascular resection (OR 8.598), end-to-side pancreaticojejunostomy (PJ) (OR 3.464) and nodal disease burden (OR 6.210) were significantly associated with the need for intra-operative transfusions. Intraoperative blood transfusion was not associated with post-operative morbidity. Pre-existing hypertension, synchronous vascular resections, end-to-side PJ and node positive disease are significantly associated with the need for intra-operative transfusions. Using these factors may help optimize MSBOS protocols in centres performing PD thereby leading to a more judicious use of blood products.

P42

Aim: Solid pseudo papillary tumor of the pancreas (so-called Frantz tumor) is a rare neoplasm of typically benign behaviour, predominantly occurring in young females. This study was designed to analyse clinico-pathological characteristics, management strategy and outcome of this rare disease. Methods: Total of 21 patients of Solid Pseudo papillary Tumours of the pancreas (SPT) have been treated between 1994-2015. Out of 21, 20 patients were female, 1 patient was male. Mean age of presentation was 39 years of age. All underwent thorough clinical examinations, x ray abdomen, CECT abdomen & MRI abdomen in selected cases. Most patients presented with dyspepsia and abdominal pain & abdominal lump. Regarding the location of the tumour, 10 presented as distal body & tail tumour, 6 at the head & 4 at the body. 6 patients were managed with simple excision/enucleation, 8 with distal pancreatectomy & splenectomy, 4 with distal pancreatectomy and 3 patients were managed with Whipple’s procedure. Results: The clinical and radiological diagnoses were confirmed by histological examination of the tumor. 2 patients were lost in follow up. No major short-term or long-term surgical complications or metastases have been recorded in the follow-up (mean- 10 years). Conclusion: Solid-pseudo papillary tumours of the pancreas are rare tumours. Despite rare, presumptive diagnosis is possible based on the fact that these tumours particularly affect young females and radiological findings show a tumor with solid and cystic parts. Radical tumor resection is the therapeutic method of choice. Although enucleation is discussed as controversial, it is a viable option in very large encapsulated tumours arising in the body of pancreas.

P43
Implication of SMAD4 loss on Clinico-pathological features and Prognosis in Pancreatic cancer– A prospective study. Subrahmaneswara Babu Naidu, Sandeep Sabnis Chandrakant, Senthilnathan Palanisamy, Annapoorani Shankar, Aravinth Subramaniam, Anand Vijay Natesan, Nalankilli VP, Srivatsan Gurumurthy, Parthasarathi Ramakrishnan, Palanivelu Chinnusamy, GEM Hospital and Research Institute, Coimbatore

Introduction: The molecular heterogeneity of pancreatic ductal adenocarcinoma (PDAC) has rendered it resistant to the arsenal of treatment modalities currently available. There have been dramatic advances in the molecular biology aiming to translate the novel therapies into patient survival. SMAD4 has been detected as one of the principal genes mutated in pancreatic cancer. Studies of SMAD4 mutation in PDAC exists, though done mostly in western world, there is only a single study from India. Hence we conducted this study, to identify the impact of SMAD4 mutation on the clinico-pathological spectrum of PDAC and its effect on prognosis. Methods: This is a prospective observational study conducted from March 2014 till February 2016 which included all biopsy proven PDAC irrespective of resection status. All the clinico-pathological parameters of the patients, SMAD4 and P53 status, and the follow up variables (recurrence and survival) were analyzed. Results: Among thirty patients evaluated, SMAD4 was lost in 21 (70%). On multivariate analysis SMAD4 was associated with poor tumour differentiation (p=0.05, C.I.=0.93-34.45), Overall survival (p=0.002, C.I.=0.9-4.1), 12 months survival (p=0.01, C.I.=0.01–0.57) and tumour recurrence (p=0.03). Poor tumour differentiation was associated with metastases (p=0.04, C.I.=0.006–0.93). SMAD4 loss and poor tumour differentiation had median survival of 9.3+1.0 months (HR=6.7, C.I=1.9-23.3, p=0.002) and 8+1.6 months (HR=5.8, C.I=1.2-28.4, p=0.02) on Kaplan Meier and Cox regression analyses respectively. Conclusion: Loss of SMAD4 had significant negative impact on tumour differentiation and
over all survival. Stratifying PDAC patients based on SMAD4 status can direct optimum albeit tailor made therapeutic strategy for given patient.

**P44**

**Comparison of outcomes between minimally invasive and open pancreatic necrosectomy.** Satish Kumar Mugali, Manipal Hospital, Bangalore

**Introduction:** Surgery for pancreatic necrosis is associated with a high morbidity and mortality. For patients with acute pancreatitis complicated by infected necrosis, minimally invasive techniques have taken hold without substantial comparison with open surgery. We present a contemporary series of open necrosectomies in comparison with minimal invasive techniques. The aim of our study was to review and compare the incidence of early and late complications after open and minimal invasive pancreatic necrosectomy. **Methods:** Using a prospective database, we retrospectively identified patients undergoing debridement for necrotizing pancreatitis (2009 to 2016). The clinical outcomes of 46 patients who underwent pancreatic necrosectomy between June 2009 and March 2016 were reviewed. **Results:** Forty six patients underwent debridement for pancreatic/peripancreatic necrosis. The key findings of the study were, overall 46% of the patients had complications, 31% had short term complications and 74% of the patients surviving pancreatic necrosectomy had late complications. The overall mortality was 26% (MIPN vs Open- 23% vs 33%). 46% of the patients had postoperative organ failure (MIPN vs Open- 39% vs 60%) and median post-op ICU stay was 12 days (MIPN vs Open – 10 days vs 14 days). 15% of patients had retroperitoneal bleeding, (MIPN vs Open – 19% vs 7%) and all required an additional procedure for control of bleeding. The incidence of gastrointestinal fistula after necrosectomy was 26%. Overall SSI rate was 61% (MIPN vs Open – 52% vs 80%). The median hospital stay among MIPN and open group were 33 days (6 – 82 days) and 36 days (6–98 days) respectively. Overall incidences of late complications were 74% during follow-up and 25% of these required surgical or endoscopic interventions. 40% of patients developed secondary diabetes mellitus and 18% of patients developed exocrine insufficiency. 6% of patients developed biliary stricture and 6% of patients developed incisional hernia. **Conclusion:** With the adoption of minimally invasive surgical techniques, there is a reduction in the rate of surgical site infections, new onset of organ failure as well as the postoperative intensive care unit stay. However, there is still a higher rate of gastrointestinal fistula, intraabdominal bleeding in these patients, requiring the need of additional procedures. Although, the reduction in mortality, new onset MOF, and median ICU admission rate has not reached statistical significance, with the adoption of minimal invasive techniques there is a trend of lowering many of the complications and thereby reducing the median hospital stay.

**P45**

**Correlation between clinical features, imaging characteristics, pathomorphology and functional status in patients with non alcoholic chronic pancreatitis.** Waliullah Siddiqui, Lakeshore Hospital And Research Centre, Kochi

**Introduction:** Stage wise progression of disease was described by Amman from recurrent acute attacks to complication and finally an end stage burnout pancreas with less pain and a marked endocrine and exocrine impairment. A similar study by Antman showed close correlation between pancreatic function and morphology in late stages of disease but no similar correlation is seen in early course of disease. A detail study on nonalcoholic chronic pancreatitis is still elusive. Chronic pancreatitis is progressive fibrosis of pancreatic parenchyma. Tropical calcific pancreatitis deserves special attention. The study was designed to establish the correlation between clinical features, imaging characteristics, pathomorphology and functional status in patients with non alcoholic chronic pancreatitis. It was based on 2 hypothesis (a) Symptomatic patients (pain and complications) have early disease (no functional impairment, normal pancreas, no atrophy or gross main duct dilatation) (b) functional deficiency (diabetes and steatorrhea) is accompanied by atrophic glands and grossly dilated ducts. **Aims:** To establish correlation between between clinical features, imaging characteristics, pathomorphology and functional status in patients with non alcoholic chronic pancreatitis. **Methods:** All patients with non alcoholic chronic pancreatitis who were followed up in surgical department of gastroenterology at Lakeshore Hospital and Research Centre, Kochi from 2014 to 2016 were included. The clinical symptoms of pain and complications were grouped together as asymptomatic. The function loss in form of diabetes and steatorrhea was grouped together as function loss (present or absent). Pancreatic duct size was used as continuous variable. Pancreatic atrophy was graded as mild, moderate, severe and used as ordinal data. Independent sample t-test (Student’s t-test) was used for the comparison of quantitative (continuous) variables. Chi-square test / Fisher’s exact test was used for the comparison of qualitative (categorical) variables. **Results:** The mean age in study group was 34 years which is consistent with early age of TCP in this part of country. The mean BMI was 21.7 and so malnutrition as a cause may not hold true. There were 21 asymptomatic and 53 symptomatic patients in form of pain and complications. 25 of the 74 patients had no functional loss in form of diabetes or steatorrhea but 49 had functional loss, of which 37 had diabetes, 32...
had steatorrhea and 40 had both. Dilated pancreatic duct patients were more symptomatic as compared less dilated ducts. The relationship between symptomatic patients and CT atrophy was not statistically significant, though a higher percentage (52.4% as compared from 28.3%) of non atrophic pancreas was significant. When pancreatic functional loss was analyzed with pancreatic duct size, patients with larger pancreatic duct size had statistically significant pancreatic functional loss. Conclusion: Morphological changes in pancreas cannot be sole guide for intervention and follow up in patients with nonalcoholic chronic pancreatitis. Burnout hypothesis may not hold true for nonalcoholic CP, and patients are equally susceptible for complication and symptom in late course of disease. Surgical option should be guided by patients clinical symptoms and remains a viable option in late stage of disease as well.

P46
Factors Predicting The Outcome In Patients Undergoing Necrosectomy For Severe Acute Pancreatitis With Necrosis. Durairaj Segamalai, Siva Kumar, Benet Duraisamy, Prabhaharan Raju, Amudhan Anbazhagan, Anand Lakshmanan, Kannan Devy Gounder, Madras Medical College, Chennai

Introduction: Acute necrotising pancreatitis occurs in 20% of patients with acute pancreatitis. It carries nearly 80% mortality in acute setting. Infection and organ failure are important determinants of mortality. Aims: To assess the factors influencing the outcome of patients undergoing surgery for acute necrotizing pancreatitis in terms of morbidity and mortality in a retrospective study. Methods: It is a retrospective study in a tertiary care center catering the whole of Tamilnadu and southern part of India, between April 2012 -2016. The diagnosis of necrotising pancreatitis made according to the revised Atlanta Classification of Acute Pancreatitis. Pancreatitis severity assessed based on the Balthazar scoring system; organ failure defined according to Marshal scoring system. Totally, 36 patients underwent necrosectomy during this period, among these 24 patients are infective pancreatic necrosis (culture positive from the drainage, per operative fluids) were taken for analysis. These 24 patients were grouped into survivors (n=15) and non survivors n=9 and 12 patients with sterile necrosis excluded. Factors analysed in the infected necrotizing pancreatitis group (Culture positive : 1. Age and Sex of the patient, 2. Duration of symptoms before admission, 3. Time of referral, 4. Comorbidity, 5. Organ failure, 6. Extent of the necrosis, 7. Step Up approach, 8. Time of necrosectomy, 9. Other additional procedures performed, 10. Post operative complications, 11. Biliary vs Alcoholic pancreatitis. Results: Among the 24 patients 83% (n=20) are male and 17% (n=4) are female. Only 22% (n=2/9) non survivors came to hospital within 4 weeks of onset of symptoms at the same time, 86.6% (n=13/15) survivors reached the hospital. Only 26.6% (n=4/15) of the survivors had co-mobity, but 66.6% (n=6/9) of the non survivors had co morbidity. 73% (n=11/15) of survivors and 54% (n=5/9) in the non survivors had necrosis involving either head and body or body and tail. Among the non survivors, 66% (n=6/9) underwent preoperative PCD/endotherapy in the survivors 40% (n=6/15) underwent such procedures. Only 15% (n=4/15) of survivors needed ventilator support whereas it was needed in 44% (n=4/9) of non survivors. In 88% (n=8/9) of non survivor’s ASA/PS anesthesia assessment score was more than III and above when compared with the survivors where only 53% (n=8/15) had more than three. In survivors 60% (n=9/15) patient underwent additional procedures like FJ, NJ, cholecystectomy & faecal diversion. Only 54% (n=5/9) of the non survivors underwent such procedures. Conclusion: Time of admission, comorbidity, extend of necrosis, organ failure, vitals status and surgical procedures determines the surgical outcome.

P47
Head coring for chronic calcific pancreatitis without pancreatic head mass: short –term outcome analysis. Villalan Ramsamy, Rajamahendran Rajendran, Rajendran Vellaisamy, Amudhan Anbalagan, Prabhakaran Raju, Benet Duraisamy, Kannan Devy Gounder, Madras Medical College, Chennai

Introduction: Debilitating abdominal pain remains the most common presentation of chronic pancreatitis and the treatment remains challenging. As pancreatic head is the pacemaker of pain in chronic pancreatitis and coring out the head even in the absence of inflammatory head mass provides better pain relief. Objective: This retrospective cum prospective study analyzed the outcome of Frey procedure in chronic calcific pancreatitis patients without inflammatory head mass. Methods: For the period between 2010 and 2015, 205 patients with chronic pancreatitis underwent Frey procedure for intractable abdominal pain. 130 patients without pancreatic head mass were included in the study. The mean follow up was six months. Using visual analogue scale score pain was analyzed both preoperatively and post operatively. Endocrine and Exocrine insufficiencies were also analyzed. Results: There was no 30 day mortality. Statistical analysis showed significant improvement of pain score. The improvement of pain score in the patients without head mass is comparable to the patients with head mass for whom frey procedure was done. Though there is improvement in Endocrine and exocrine insufficiency they are not statistically significant as per chi-square test. Conclusion: This study shows that even in the patients with no pancreatic head mass, the head coring frey procedure provides better quality of life.
and better pain relief with comparable morbidity and nil mortality. Head coring procedure can be therefore strongly recommended for pain relief even in pancreatitis without head mass.

**P48**
Node negative ampullary cancer treated with preoperative endoscopic sphincterotomy and drainage has a higher incidence of liver metastasis after pancreatico-duodenectomy. Rajan Saxena, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow

**Introduction:** Node negative ampullary tumours have a better long term prognosis after pancreateicoduodenectomy (PD). Many of them require endoscopic pre-operative biliary decompression (PBD) before PD. Some of the node negative patients who experienced PBD, on our follow up, behaved as poorly as node positive tumours, and prompted us to explore the reason for this behavior. **Methods:** A retrospective analysis of prospectively maintained database of 300 node negative ampullary tumors treated with PD. The 300 patients were then classified into two groups – those undergoing preoperative endoscopic sphincterotomy (ES) (ES group, n=210) and those with no preoperative ES (nES group, n=90), and compared for clinical, laboratory and histopathological parameters, complications, timing and pattern of recurrence, and survival. 67 patients developed recurrence, and were analysed. **Results:** The groups were matched for demographics, preoperative parameters and tumour histology. PD was performed at a median of 37 days following ES. The ES group had a higher incidence of wound infection (p=0.012) and delayed gastric emptying (p=0.035). 67 patients had recurrence at a median time of 20 months post-PD. The ES group had earlier recurrence, a significantly higher incidence of liver metastases (p=0.046), particularly in the second year post PD (p=0.035). The nES group had an overall survival advantage of 6.3 months. **Conclusions:** ES cuts through the ampullary tumor, predisposing to hematogenous dissemination in the portal circulation, may be responsible for the inordinately high incidence of liver metastases in early ampullary tumors, and thus a negative prognostic factor.

**P49**

**Introduction:** Delayed Gastric Emptying (DGE) is a worrisome morbidity following Pancreatico Duodenedectomy (PD) prolonging hospital stay. The available literature suggests Pancreatic Anastomotic Failure or Pancreatico- Jejunostomy (PJ) leak is a risk factor for DGE in almost half of the cases. In this era of decreasing PJ leak rates, this study aims to examine whether clinical or biochemical pancreatic leak is a risk factor for development of DGE. **Methods:** Retrospective review of prospectively maintained database of patients who underwent PD between 1st July 2012 and 31st May 2016 at Sree Gokulam Medical College and Research Foundation was analyzed. **Results:** 58 patients (Mean age 57.4 years (range 14-75); M:F=34:24) underwent PD (Classical- 24.1% (n=14), Pylorus preserving (PPPD)- 63.8% (n=37), Extended Whipple’s– 12.1% (n=7)). DGE occurred in 24.1% (14/58) patients. The incidence of DGE according to ISGPS Grade A, B and C were 6.9% (n=4), 12.1% (n=7) and 5.2% (n=3) respectively. DGE occurred in 23% (3/14) in Classical, 27% (10/37) PPPD and 14.3% (1/7) Extended Whipples PD. Overall PJ leak rate was 15.5% (n=9) [ISGPS Grade A– 3, B– 3 and C– 3], PJ leak had significantly increased risk of developing DGE (p=0.03, Odds ratio = 5.556). However among 14 patients, who had DGE, only 5 had PJ leak (35.71%), of which 3 had Grade A leak and 2 (14.28%) patients had Grade C PJ leak. **Conclusion:** The incidence of DGE, which currently is a major comorbidity resulting in prolonged hospital stay following PD, continues to remain high despite decreasing PJ leak rates.

**P50**
Role of adjuvant treatment in periampullary carcinoma. Asit Arora, Nikhil Agrawal, Saphalta Baghmar, Tushar Kanti Chattopadhyaya, ILBS, New Delhi

**Introduction:** There is no consensus regarding the optimal management of patients after resection of periampullary carcinoma. Retrospective studies have shown benefit of adjuvant treatment in node positive cases. **Methods:** We retrospectively analysed prognostic factors and role of adjuvant therapy in 95 patients with periampullary carcinoma, who underwent pancreaticoduodenectomy in a dedicated hepato-pancreato-biliary centre. The patients included in the study were registered at Institute of Liver and Biliary Sciences, New Delhi from January 2011 to December 2015. **Results:** The median age of patients was 57.5 years (range 29–76 years). Sixty five (68.5%) were males. Ampulla was the most common site in 45%; followed by distal common bile duct (26.3%), head of pancreas (15.8%), and duodenum (9.5%). Site of origin could not be ascertained in three patients. R0 resection could be achieved in 85.3% patients. Median tumor size was 2.5 cm (range 0.7–7 cm). Median number of lymph nodes dissected was 15 (1–46). The median follow up was 14.07 months (range 0.33–56.77 months). Recurrence was seen in 34 patients (35.8%) of which 7 had locoregional only recurrence. Median time to recurrence was 10.7 months (range 2.21–45.5 months). Liver was the most common site of distant recurrence. Thirty three (34.7%) patients expired, out of which 5 during treatment (2 post-
operatively and 3 due to chemotoxicity). Median survival time is 30.8 months (range 23.5–38 months). Node positivity (62.2%), lymph node ratio (LNR) >0.2 (32.3%) and lymphovascular invasion (LVI) were predictors of poor progression free survival (PFS). On multivariate analysis, LNR >0.2 (HR 7.7, 95%CI 2.7 16; p <0.0001) and LVI (HR 3.4, 95%CI 1.34 8.6; p 0.01) significantly affected the PFS. Patients with tumor arising from head of pancreas (15.8%) and common bile duct (26.3%); T3 and T4 tumors (58%), node positivity, LNR >0.2 and tumor size >2 cm (70.5%) had significantly poor overall survival (OS). On multivariate analysis LNR >0.2 (HR 2.2, 95%CI 0.98 5.3; p <0.056) and advanced T stage (HR 2.6, 95%CI 0.97 7.2; p 0.01) predicted poor OS. Fifty seven (66.3%) patients received adjuvant treatment (51–chemotherapy; 6-chemoradiotherapy). Patients with T3/T4 tumors, pancreatobiliary histology, node positivity, LNR >0.2, tumor grade >2 and PNI showed improved PFS and OS with adjuvant treatment. PFS also improved in those with LVI and, OS improved in those with cholangiocarcinoma. Conclusion: Lymph node ratio >0.2 and lymphovascular invasion adversely affects PFS; while, LNR >0.2 and advanced T stage adversely affects OS in periampullary carcinoma. Patients with T3/ T4 tumors, pancreatobiliary histology, node positivity, LNR >0.2, tumor grade >2 and PNI showed improved PFS and OS with adjuvant treatment.

P51
Pancreatic Ascites- A single centre experience. Soma Sekar, Bennett Duraisamy, Prabhakaran Raju, Amudhan Anbalagan, Anand Lakshmanan, Kannan Devy Gounder, Madras Medical College, Chennai

Introduction: Pancreatic ascites can occur as a complication of either acute or chronic pancreatitis. Three approaches in treating these patients are 1. Initial trial of conservative therapy with repeated abdominocentesis, TPN and octreotide use 2. Endotherapy & 3. Surgery. We share our experience of 19 cases with pancreatic ascites during the period from Jan 2013 to June 2016. Of these 16 were due to chronic pancreatitis, 2 cases developed PA following trauma and one in the setting of acute pancreatitis. In this study we have defined the indications for a primary direct surgical approach for patients with PA due to chronic pancreatitis which has decreased morbidity. Inclusion criteria: All patients with acute or chronic pancreatitis with ascites and an ascitic fluid amylase >1000 IU/L are included. We have not taken into consideration the ascitic fluid albumin levels as majority of our patients are hypoprotinemic. Methods: Of the 19 cases, 18 were males and one female. Of the male patients 17 were chronic ethanol users with age range of 20 to 46 years. In two male patients PA was due to trauma. The only female patient is a 16 year old girl with chronic calcific pancreatitis and PA due to a ruptured pseudocyst in the tail of pancreas. A standard protocol was followed with initial percutaneous catheter drainage of the ascitic fluid which improved patient discomfort and also enabled the use of MRCP to define the MPD. In the setting of chronic pancreatitis the approach is guided by the main pancreatic ductal morphology defined by a CECT abdomen and MRI with MRCP. Of the 16 cases, MRCP showed a dilated MPD in 12 cases and ductal disruption in 6, all of which were in the body or tail of pancreas. In 12, the MPD was dilated on a CT abdomen with a diameter ranging from 7-11 mm, 7 showing chunky calcifications in the head and a ruptured pseudocyst was seen in 5 cases. The 12 cases with MPD dilatation underwent primary early direct surgery. Surgery was tailored to the individual case with a combination of distal resection, ductal drainage and/or Frey’s procedure. Other 4 cases without ductal abnormalities settled with conservative management after 3-4 weeks. Only one patient with acute pancreatitis with PA was treated, who was taken up for surgery following endotherapy failure, but died. In the trauma group one underwent a pancreatic fistulojejunostomy and the other settled with endotherapy. Results: The mean duration of hospital stay was 16 days in the primary surgery group with a range of 9-23 days. 4 patients had Grade A pancreatic fistula and settled. No TPN was used in this group. Post surgery pain relief was also good. Conclusion: Primary early direct surgery guided by the MPD morphology (duct diameter >5mm) in selected patients with chronic pancreatitis and PA leads to faster recovery of the patient and it takes care of the primary pathology also. It decreases patient morbidity, avoids the cost and complications of TPN.

P52
Laparoscopic Distal Pancreatectomy- Analysis Of Seventeen Years Experience Of A Tertiary Care Academic Institute. Samrat Vijaykumar Jankar, Senthilnathan Palanisamy, Subrahmaneswara Babu NS, Sandeep Sabnis, Srivatsan Gurumurthy, Anad Vijay Natesan, Nalankilli VP, Palanivelu Chinnusamy, GEM Hospital, Coimbatore

Introduction: Laparoscopic distal pancreatic resection has become the standard approach for tumors in the body and tail of pancreas in appropriately selected patients. The objective of the present study is to present our experience over past 17 years, technical modifications adapted to make LDP a safe, feasible and reproducible procedure. Methods: A retrospective review of prospectively maintained database was conducted from 1998 to 2015, including all patients who underwent laparoscopic distal pancreatectomy. The clinic-pathological data of the patients, operative variables, and postoperative morbidity including pancreatic fistula and follow up were recorded. The various modifications in the technique that were adapted over the study period and their impact on the outcomes were analyzed. Factors with a possible association with increased risk of POPF were included.
for univariate analysis and subsequently for multivariate logistic regression analyses. **Results:** Total 82 patients underwent laparoscopic distal pancreatectomy among which 72 patients were operated for pancreatic tumors. Among the remaining 10 patients, multivisceral resection was done in 4 patients while 6 patients underwent LDP secondary to trauma. The median age of the population is 45 years (12–79). Female to male proportion was 59:23. The mean BMI was 28.8±3.7 kg/m². The mean tumor diameter was 5.1±2.9 cm. Spleen preservation was possible in 14 patients (17%). Stump was closed using stapler division (rapid firing) in the initial 18 patients (22%) followed by suture closure in the next 29 patients (35.4%). For the last 38 patients (42.7%) the technique of graded compression with stapler was used. The mean operative time was 205.4±48.7 minutes while intra-operative blood loss was mean 153±40.5 ml. Open conversion needed in 4 patients. The mean post-operative hospital stay was 6.9±4.3 days. Post-operative pancreatic fistula developed in 17 patients while 4 patients had grade B/C fistula. Four patients had post-pancreatectomy hemorrhage, two required re-operation. Pulmonary complications noted in seven patients in form of ARDS in 3 and pleural effusion in 4. There was single mortality due to myocardial infarction. The final histopathology revealed mucinous cystadenoma (24) (two mucinous cystadenocarcinoma), benign serous cystadenoma (15), solid pseudo-papillary tumor (9). Rest of the diagnoses includes IPMN (5), pancreatic ductal adenocarcinoma (7), neuro-endocrine tumor (7), pseudocyst (5). All the nine patients who had malignant diagnoses had a R0 resection with adequate lymphadenectomy. The mean followup period was 62.2±16.2 months, without recurrances. New onset diabetes (NOD) was detected in 8 (20.83%) while new onset steatorrhoea (NOS) in 11 (29.17%). On univariate analysis, male sex, BMI, pre-operative hemoglobin, spleen preservation and type of stump management were identified to affect the development of POPF (p<0.1). These factors were analyzed with multivariate logistic regression, after which Male sex (p=0.032, OR=19.6, 95% CI=1.28–29.8) and BMI (p=0.027, OR=1.33, 95% CI=1.03–1.72) were found to have statistically significant co-relation. **Conclusion:** Laparoscopic distal pancreatectomy can be the choice of approach for distal pancreatic tumors including malignant tumors, although in carefully selected patients. Surgeons with adequate experience in open pancreatic surgery and who also have advanced laparoscopic technical experience such as intra-corporeal suturing and knotting can perform LDP safely and effectively.

**P53**

Does the addition of a Braun entero-enterostomy decrease the frequency of postoperative pancreatic fistula and delayed gastric emptying after standard pancreaticoduodenectomy? **Results of an interim analysis.** Nivas Venkatachalapathy, Waliullah Siddiqui, Satinder Singh Bains, Rajesh BM, AVenugopal, S Mahesh, Jacob Mathew, H Ramesh, Department of Surgical Gastroenterology & Liver Transplantation, Lakeshore Hospital, Cochin, Kerala, India

**Introduction:** Despite continuous refinements in the technique of pancreaticoduodenectomy, postoperative pancreatic fistula (POPF) and delayed gastric emptying (DGE) continue to cause significant morbidity. **Aim:** Compare the data of patients who have undergone the Braun enterenterostomy during reconstruction with those who have not, and analyse the frequency and severity of POPF and DGE. **Methods:** The prospective data of 29 patients who underwent the Braun enterenterostomy during reconstruction (group 1) were compared with those of 39 patients did not (control period during 2015; group 2); Fisher’s exact test was used for analysis. **Results:** The demographics of the two groups were similar (table 1).

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Group 1 (Braun) n=29</th>
<th>Group 2 (no Braun) n=39</th>
<th><strong>P value</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (median, years)</td>
<td>60</td>
<td>62</td>
<td>NS</td>
</tr>
<tr>
<td>Sex</td>
<td>20:09</td>
<td>23:16</td>
<td>NS</td>
</tr>
<tr>
<td>Comorbidities</td>
<td>25</td>
<td>28</td>
<td>NS</td>
</tr>
<tr>
<td>Jaundice</td>
<td>20</td>
<td>18</td>
<td>NS</td>
</tr>
<tr>
<td>Preoperative ERCP / stenting</td>
<td>14</td>
<td>12</td>
<td>NS</td>
</tr>
<tr>
<td>Soft pancreas</td>
<td>12</td>
<td>21</td>
<td>NS</td>
</tr>
<tr>
<td>PD diameter &gt;4 mm</td>
<td>14</td>
<td>13</td>
<td>NS</td>
</tr>
<tr>
<td>Head cancers: periamp cancers:NET</td>
<td>15:14:07</td>
<td>10:10:03</td>
<td><strong>NS</strong></td>
</tr>
</tbody>
</table>

Postoperative pancreatic fistula occurred in 23 patients overall and DGE in 14 patients. The outcomes in the two groups are shown in table 2.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Group 1 (Braun) n=29</th>
<th>Group 2 (no Braun) n=39</th>
<th><strong>P Value</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>POPF (ISGPF)</td>
<td>8 (27)</td>
<td>15 (38)</td>
<td>NS</td>
</tr>
<tr>
<td>Grade A</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Grade B</td>
<td>5</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Grade C</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>DGE</td>
<td>5 (17)</td>
<td>9 (24)</td>
<td>NS</td>
</tr>
</tbody>
</table>
**Conclusion:** The addition of a Braun entero-enterostomy decreased the incidence of POPF and DGE after standard pancreaticoduodenectomy, though the difference did not reach statistical significance. Fewer B and C POPF were also encountered in group 1.

P54

**Assessment of Prognosis of Acute Pancreatitis on Admission: Comparison of HAPS and Apache II Scoring Systems.** Nigil Abdul Jalal, Kasturba Medical College, Mangalore

**Introduction:** Acute pancreatitis is a common and potentially lethal inflammatory process with a highly variable clinical course. Persistent organ failure develops in 10%–20% of patients, with mortality reaching 30% in this subgroup. Since the morbidity and mortality of acute pancreatitis differ markedly between mild and severe disease (mild < 5% vs severe 20–25%), the ability to identify patients at risk for persistent organ failure early in the disease course is very critical, both for triaging patients to the appropriate level of care and for designing mechanistic studies for targeted intervention.

**Aims:** To assess the severity of acute pancreatitis using APACHE II and HAPS (Harmless Acute Pancreatitis Score) scoring systems. To compare HAPS and APACHE scoring systems for assessment of prognosis of acute pancreatitis on admission, and to assess the feasibility of HAPS scoring system over complicated APACHE II scoring system.

**Methods:** This is a time bound prospective study on admitted patients clinically suspected to have acute pancreatitis from time period November 2014 to September 2016 in a tertiary teaching hospital. Criteria for clinical suspicion of acute pancreatitis are characteristic abdominal pain, serum amylase values more than thrice the upper limit of normal and imaging evidence. Currently, 80 patients were studied, all of whom were subjected to both APACHE II and HAPS scoring systems. Scoring was done on admission /at the time of diagnosis. The scores were compared with the clinical severity which was graded according to Atlanta criteria and also compared with the clinical outcome. Statistical analysis done using independent t test. A "p" value of less than 0.05 was considered to be statistically significant.

**Results:** Of the 80 patients studied, 55 (68.8%) patients were positive for HAPS and had an APACHE II score of less than or equal to 8. Of these, 51 (92.7 %) patients had an eventual non-severe (mild) clinical course. As all the evaluation criteria are found to be the same for both HAPS and APACHE II scores, HAPS scoring system is equally efficacious as APACHE II scoring system for the prognostication of acute pancreatitis, with HAPS having the added advantages of being significantly less time-consuming and less invasive while at the same time accurately triaging patients with the disease. This indicates that HAPS is capable of identifying the patients who could be reliably triaged to receive less aggressive treatment, making it an ideal predictor for Indian patients at the community level.

P55

**Prospective randomised study comparing outcome of duodenum preserving pancreatic head coring with duodenum preserving pancreatic head and body coring in chronic pancreatitis.** Vikash Moond, PGIMER, Chandigarh

**Introduction:** Chronic pancreatitis is a progressive inflammatory disease with uncertain pathogenesis and unclear treatment. There is no single effective surgery for the variant structural abnormalities associated with the disease. The aim of this study is to ascertain whether more extensive pancreatic resection lead to better outcome in terms of post-op pain control, exocrine and endocrine deficiency, morbidity and mortality.

**Methods:** 20 patients of chronic pancreatitis undergoing surgery were randomly allocated into 2 groups to undergo head coring or head and body coring and were followed post-operatively at 1, 3 and 6 months. Pain score, exocrine and endocrine function and quality of life were assessed for the 2 groups.

**Results:** A total of 20 patient were randomly allocated into 2 groups. 4 females and 6 male patient were included in each study group. Duration of surgery (p=1.0), intra-operative blood loss (p=1.0), post-op bleeding (p=1.0) and anastomotic leak (p=1.0) were not significantly different between the two group. There were 2 mortality in the group undergoing head and body coring and 1 mortality in the group which underwent head coring alone which was not statistically significant (p=1). Post-op pain control was comparable in the two group (p=0.478) although there was a trend towards decreased pain score in the head and body coring group. Exocrine (p=1.0) and endocrine (p=1.0) function were comparable between the two group at 6 months follow up. **Conclusion:** More extensive pancreatic resection does not lead to increased operative difficulty and increased morbidity and mortality in the post op period. Long term follow up will be required to assess the effect of extensive pancreatic coring on pain control, exocrine and endocrine deficiency which were not different at 6 months.

P56

**Utility of Feeding Jejunostomy in Pancreaticoduodenectomy.** Rajesh Pendlimari, Vinay BN, Venugopal HG, Nagesh NS, Bangalore Medical College & Research Institute, Bengaluru

**Introduction:** Concurrent feeding jejunostomy (FJ) is routinely performed in patients undergoing pancreaticoduodenectomy for early enteral nutrition. Few reports suggested that there is increased morbidity associated with FJ among patients undergoing
pancreatoduodenectomy. The aim of this study was to determine the usefulness of FJ and morbidity of FJ after pancreatoduodenectomy in our series. **Methods:** All patients undergoing concurrent FJ after pancreatoduodenectomy (whipples procedure) were reviewed retrospectively July 2014 to July 2016. Jejunostomy feeds were routinely started on POD2. Jejunostomy feeds were discontinued once patient is able to take oral feeds. Data were represented by frequency and mean. **Results:** A total of 28 patients underwent pancreatoduodenectomy surgery in the study period and concurrent FJ was performed in all those patients. A total of 18 (64.3%) were men and mean age was 47.1 years. Majority (n=25, 89.3%) of these patients had malignancy. Only 6 out of 28 (21.4%) required nutrition supplementation through FJ on POD 7. Only 2 out of 28 (7.1%) patients required FJ feeds on POD30. None of the patients had major complications such as peritubal leak/peritonitis in the 30-day post-operative period. There was no FJ related mortality in the 30 day post-operative period. The patients who required prolonged FJ feeds had grade C pancreatic leak after pancreatoduodenectomy, esophagegastric anastomotic leak, anastomotic stricture or pyloric narrowing. **Conclusions:** Though FJ in some studies suggested increased morbidity, concurrent FJ should be considered in patients undergoing pancreatoduodenectomy as it is not associated with major complications. FJ is especially benfecial among those patients who required prolonged nutritional supplementation. Literature review suggested that one-third of NJ tubes dislodge and TPN doubles the risk of infections, hence FJ is considered safe and effective adjunct for patients undergoing pancreatoduodenectomy.

**P57**

**Clinical Profile Of Tropical Chronic Pancreatitis In Orissa.**
Sarat Chandra Jayasingh, SCB Medical College, Cuttack

**Introduction:** Tropical chronic pancreatitis (TCP) is the commonest variety of chronic pancreatitis in Orissa similar to the other South Indian States. This is characterized by moderate to severe abdominal pain with/without diabetes in young adults with poor socio-economic background, more prevalent in the costal belt of Orissa. We propose to find out the distribution and clinical features of TCP seen in Orissa.

**Methods:** Hospital records between 2000-2015 reveal about 454 cases of TCP admitted to our department with/without pain, diabetes, malnutrition and other complications. All these patients were subjected to detailed history taking, clinical examination, routine laboratory tests, blood sugar, lipid profile, pancreatic function test, UGIE, CA-19-9, X-ray abdomen and ultrasound. CT scan, MRI and other sophisticated tests were used selectively. **Results:** Among the 454 patients 312 were male and 142 female (2:1 ratio), more than half of the patients belong to age group of 20 to 40 years. About 86% of patients come from low socio-economic background from costal belt of Orissa. Alcohol consumption was observed in 8% of cases. Moderate to severe abdominal pain was present in 237 (98%), diabetes 28 (11%), steatorrhea/diarrhoea 5 (2%), jaundice 9 (4%), pseudocyst 11 (5%), ascites 2 (1%), malignancy 8 (3%), upper GI bleed 2 (1%). Parenchymal calcification and intraductal calculi was seen in almost all cases. Two third of the patients were managed conservatively and rest one third were offered any type of surgical treatment. **Conclusion:** Tropical Chronic Pancreatitis is more prevalent in costal belt of Orissa affecting young males of lower economic group. Moderate to severe abdominal pain is the commonest symptom. 11% have diabetes, steatorrhea and upper GI bleed is very rare. Pancreatic calcification and ductal calculi seen in all most every case.

**P58**

**Comparison study of the necrosectomy by retroperitoneal approach with transperitoneal approach for necrotizing pancreatitis.**
Arun Kasi Viswanathan, Stanley Medical College & Hospital, Chennai

**Introduction:** Minimally invasive necrosectomy through a retroperitoneal approach has shown promising results for the treatment of necrotizing pancreatitis. There is however, little evidence from comparative studies in favor of these techniques over laparotomy. **Aim:** To perform comparison of patients with necrotizing pancreatitis who underwent necrosectomy by the retroperitoneal approach with transperitoneal approach. **Methods:** Between August 2013 and July 2016, 77 patients were admitted with pancreatic necrosis. Conservatively managed- 19; PCD alone- 12; PCD followed by TPN/RPN-11; Transperitoneal necrosectomy- 26; Retroperitoneal necrosectomy- 20 (left flank- 18; right flank- 01; Bilateral-1); prophylactic ileostomy done in 2 cases in RPN & 2 cases in TPN (suspicion of bowel communication). These patients were matched for the age (10 years), status of infection, CT severity score (2 points), preoperative organ failure and timing for surgery (for 7 days). **Results:** Reintervention was required in 4 patients (ileostomy-3 & redo necrosectomy-1) in the RP group; 2 patients in the TP group (ileostomy-2). Median post operative hospital stay was 25 days in the RP group and 22 days in the TP group. Mortality was observed in 5 cases in TP group; 2 cases in RP group. **Conclusions:** Comparing to TP approach, RP approach for pancreatic necrosectomy through a small flank incision was associated with more morbidity (mainly because of bowel injury in RP group) comparable postop hospital stay but less mortality (because of lack of peritoneal contamination). In selected cases, prophylactic ileostomy indicated in suspected bowel communication. In selected cases, RP approach can be done through right flank & bilateral approach.
P59
Laparoscopic Necrosectomy In Acute Necrotizing Pancreatitis: A New Frontier. Abhishek Arun Bhagwat, Santosh Gudimani, Mustafa Razvi, Narsimhan Mohan, Ramesh Ardhani, Meenakshi Mission And Research Center, Madurai

Introduction: Pancreatic necrosis still remain a major concern of mortality and morbidity, and when infected the treatment is mainly drainage. With the advent of step up approach percutaneous drainage is routinely being used as a bridge till the necrotic tissue becomes walled off, and sometimes in itself is sufficient to tackle the problem. Conventional surgical approach was associated with lot of mortality & morbidity. With increase in experience in minimal access surgery there is a trend toward laparoscopic necrosectomy. Even recent literature supports the efficiency of laparoscopic necrosectomy.

Aim: To study the feasibility of laparoscopic necrosectomy in acute necrotizing pancreatitis.

Methods: All patients undergoing laparoscopic necrosectomy for acute necrotizing pancreatitis from 2012 to 2015 were reviewed. Total 15 cases were reviewed. All data related to intraoperative, post-operative complications, need for pigtail insertion were evaluated. 12 male & 3 female patients with mean age of 41 underwent laparoscopic necrosectomy. Result: All patients except one survived. The mean surgery time was 70.6 mins. One patient required conversion to open due to excessive bleeding and was packed and re-explored next day. Most common complication was pancreatic fistula (n=4, 26.6%), then recollection (n=3 each, 20%) and followed by surgical site infection (n=2, 12.5%). Conclusion: Laparoscopic necrosectomy seems a feasible option with good clearance of necrotic tissue, early postoperative recovery & has less incidence of major complications.

P60
Preoperative Tissue Diagnosis– Is it a must before a Pancreatoduodenectomy? Waliullah Siddiqui, Jacob Mathew, Tanveer Singh, Adarsh Choudhary, Ramesh H, Lakeshore Hospital & Research Center, Cochin and Medanta, The Medicity, Delhi

Introduction: It is now a routine to seek biopsy proof in suspected malignant lower biliary obstructions. In some cases, it identifies masqueraders, and helps determine the appropriate treatment. However, a negative biopsy may often delay definitive therapy.

Aim: Analyse the data of patients operated for pancreatoduodenectomy to determine the numbers of patients who had benign pathology, hitherto unsuspected preoperatively where resection may have been avoided.

Methods: Retrospective analysis of patients from two large volume centers– Medanta, the Medicity, New Delhi and Lakeshore Hospital, and 9 patients undergoing elective laparoscopic pancreatoduodenectomy with one of the 3 artery first approaches (right posterior, medial uncinate, mesenteric) to SMA during January 2016 to July 2016 are retrospectively analyzed. Results: Among 9 patients, carcinoma head of pancreas was seen in 3 cases, distal cholangiocarcinoma in 2 cases, duodenal adenocarcinoma in 2 cases, ampullary carcinoma in 1 case and neuroendocrine tumor of head of pancreas in 1 patient. 5 patients were males and 4 were females. Mean age of the patients was 61 (+/-7.81) years. Mean duration of the surgery was 324.44 (+/-21.13) mins. Mean blood loss
during the surgery was 214.4 (+/-84.61) ml. All the cases were successfully completed by laparoscopic technique and no conversion was required. No intraoperative complications were seen. Average size of the tumor was 2.4 (+/-0.01) cm, average number of lymph nodes harvested during the surgery 18.4 (+/-4.04). Mean diameter of main pancreatic duct was 4 (+/-1.66) mm, mean diameter of CBD was 12.4 (+/-4.28) mm. The mean postoperative hospital stay was 11.11 (+/-1.9) days. R0 resection was achieved in all the cases. There was no mortality, however 1 patient developed delayed gastric emptying, 3 patients had Grade A pancreatic fistula, none of them developed Grade B or C pancreatic fistula and post pancreaticoduodenectomy haemorrhage was seen in 1 patient. Post operative period of three patients was complicated by significant diarrhea requiring antidiarrheal medications. Conclusion: Artery first approach in laparoscopic pancreaticoduodenectomy is safe and feasible.

P62
Use Of Pigtail Fluid Analysis In predicting The Course Of Patients Of Severe Acute Pancreatitis Managed By Step Up Approach. Rohit Keshav Nimje, PGIMER, Chandigarh

Introduction: Pigtail drainage (PCD) in the first step in management of severe acute pancreatitis (SAP) using 'Step up approach'. The aim of this study was to use pigtail fluid amylase (PFA) as a surrogate marker to predict the course of the disease, its outcome and need for surgical intervention. Methods: 47 patients of SAP managed by PCD from June 2014-October 2015 were included in the study. Serial PFA was determined starting from day of pigtail insertion, followed by days 1/3/7. Measurements were continued weekly till pigtail was removed. Serial PFA values were co-related with extent of necrosis, morbidity, mortality and need for surgery. Results: There were 41 males and 6 females. The mean age was 40.8 years. The most common etiology was alcohol intake. The mean PFA on day 1, 3, 7, 14, 21 and 42 were 38575, 43340, 46192, 54368, 49628 and 47176 U/L. On univariate analysis, mean PFA on day 7 correlated with need for endoscopic biliary stenting (p=0.038) and extent of pancreatic necrosis (p=0.037). Mean PFA on day 42 co-related with the need for surgical intervention (p=0.046) and prolonged ICU stay (p=0.045). No association of PFA was found with mortality, hospital stay, duration of PCD, main pancreatic duct disruption, pancreatic duct stenting, infected necrosis, EC fistula, bleeding and organ failure. Conclusion: Serial monitoring of PFA levels correlates with the extent of pancreatic necrosis, need for surgery and duration of ICU stay.

P63
Role of promoter hypermethylation and epigenetic silencing of PTEN in peripancreatic carcinoma. Asgar Firdaus, Sundeep Singh Saluja, Vaibhav Varshney, Rohit Rathi, Sadhana Sharma, Pramod Kumar Mishra, GB Pant Institute Of Medical Education And Research, Delhi, AIIMS, Patna

Introduction: Studies have reported the role of PTEN gene downregulation and apoptosis induction in different cancers and cell lines. However, the role of loss of PTEN expression in association of promoter hypermethylation and spontaneous apoptosis and its impact on survival in peripancreatic carcinoma is not established. Methods: One hundred and seven tumour tissues along with their nonadjacent tissues as normal from patients undergone pancreaticoduodenectomy for peripancreatic carcinoma were analysed for the mutational, expressional, hypermethylation and apoptotic status of PTEN gene. Molecular profiling was performed by next generation sequencing, protein expression by immunohistochemistry, methylation status by methylation specific PCR and Programmed cell death (apoptosis) by terminaldeoxynucleotidyltransferase biotin–dUTP nick end labelling (TUNEL) assay. The changes were correlated with clinicopathological characteristics, overall survival (OS) and recurrence free survival (RFS). Results: Amongst 107 specimens (77 men, 30 women) evaluated, 41 (38) had well differentiated while 66 (62) had moderately or poorly differentiated tumors. The incidence of T3-4 disease, lymph node positivity and perineural invasion were in 65 (61), 60 (56) and 27 (25) patients respectively. Loss of protein expression was found in 58 (54), promoter methylation status was in 58 (54) and apoptosis suppression was in 55 (51) cases. No mutation was detected in the tumour tissue. The correlation of molecular parameters with clinicopathological characteristics showed significantly more loss of expression in ampullary tumours (p=0.06) while significantly more hypermethylation (p=0.08) and loss of apoptosis (p=0.06) in patients with age >50 years. The peri-operative mortality, recurrence, median OS and RFS of the cohort was 5.6%, 29%, 45 and 52 months respectively. Loss of expression of PTEN gene and apoptosis suppression did not have significant impact of OS (p=0.56 & p=0.53) and RFS (p= 0.44 & p=0.84) respectively. Conclusion: The loss of expression of PTEN gene is seen in ampullary subgroup of peripancreatic tumours. The promoter hypermethylation of PTEN gene and spontaneous apoptosis suppression in significantly more in older patients. PTEN gene loss did not have any impact on survival.

P64
**Introduction:** The SMA first approach, a technical modification of pancreatoduodenectomy, attempts to assess resectability (SMA involvement) of a tumour before irreversible steps are taken and also attempts to improve oncological outcome by better sanitizing the posterior retroperitoneal margin. We compared the posterior SMA first approach (SMA group) with conventional pancreatoduodenectomy (Classical group) in a randomized control trial. **Methods:** Patients with periamillary tumours, carcinoma head of pancreas and good performance status (ECOG 0 to 2) were included. Borderline resectable tumours were also included. Patients with an unresectable lesion, metastasis and those who underwent total pancreatectomy were excluded. Standardized ‘Leeds Histopathological protocol’ was followed. Primary outcome variables analyzed were the R0 resection rate, number of lymph nodes harvested and lymph node positivity ratio. The secondary outcome variables analyzed were intraoperative variables (operating time, intraoperative blood loss), postoperative complications and overall survival in the two groups. Preoperative biliary drainage was selectively done for patients with cholangitis, poor nutritional status, planned neoadjuvant therapy and serum bilirubin levels >15 mg/dL at presentation. The calculated sample size of this ongoing study is 74 in each arm. **Results:** At the time of this interim analysis, 97 patients had been assessed for eligibility from January 2014 to December 2015. 20 patients were excluded (refused consent n=6, metastasis on exploration n=13, refused surgery n=1) and 77 patients were randomized. Seven patients were further excluded (protocol violations n=2, absence of malignancy on final histopathology n=5). Thus, 34 patients in the SMA and 36 patients in the classical group were included in this analysis. The demographic profile and preoperative laboratory parameters were comparable. The median maximum serum bilirubin levels at presentation were higher in the SMA group (15.75, range 0.7–30.7 mg/dL vs 7.9, range 0.5–30.2 mg/dL) resulting in a higher incidence of preoperative biliary drainage (78.4% vs. 55%). The mean operating time was lower in the SMA group (6.85±1.61 hours vs. 7.19±1.73 hours; p=0.40). The blood loss and transfusion requirements in both groups were comparable. **Conclusion:** ‘SMA- first’ approach to pancreatoduodenectomy is technically feasible with comparable intraoperative and postoperative outcomes. Though not statistically significant, in the present interim analysis, the ‘SMA first’ approach allowed a faster pancreatoduodenectomy with a higher rate of R0 resection.

**P65**

**Predictors of bleeding and need for concomitant splenectomy in the management of asymptomatic splenic vein thrombosis while undergoing surgery for chronic pancreatitis patients.** Villalan Ramasamy, Amarojith J Moses Vikram, Balakumaran Sathiyaamoorthy, Gnanasekar Murugaiyan, Prabhakaran Raju, Benet Duraisamy, Amudhan Anbalagan, Anand Laxmanan, Kannan Devygounder, Madras Medical College, Chennai

**Introduction:** Even though splenectomy is considered as treatment of choice for those with bleeding varices, no consensus has been arrived at regarding management of asymptomatic splenic vein thrombosis (SVO) while undergoing surgical management for pain in Chronic Pancreatitis (CP). **Aim:** Whether adding splenectomy while performing surgical procedure for CP influences the outcome of patients with asymptomatic SVO is assessed in this retrospective study. **Methods:** SVO was found in 39 cases among a total of 365 patients (10.7%) operated for CP between 2009 and 2015. 21 patients underwent splenectomy and 11 underwent only pancreatic procedures and 7 patients are treated with non surgical management. Bleeding manifestations prior to the surgery were found only in 17 patients. On follow up reduction in size of varices and restoration of flow in splenic vein, rate of rebleeding and morbidity and mortality were analyzed. Median follow-up period was 36 months (Range 10-88 months). **Results:** None of them in the splenectomised patients bleed in the follow up. 4 patients in the non splenectomised patients developed bleeding in the follow up. 3 patients expired after admission with bleeding manifestations. Another patient developed features of hypersplenism and required splenectomy in the follow up. None of the factors significantly predicted the risk of bleeding. **Conclusion:** The rate of bleeding is high in surgical population of CP hence we strongly advise splenectomy as a single stage treatment while performing surgical management of chronic pancreatitis especially in patients with remote access to health care facilities.

**P66**

**The Effect of Preoperative Biliary Drainage on Pancreatic Fistula after Pancreaticoduodenectomy and Analysis of Confounding Factors.** John Mathew Manipadam, Ramesh Hariharan, Mahesh S, Lakeshore Hospital, Kochi

**Introduction:** Surgeons and endoscopists welcome routine preoperative biliary drainage prior to
pancreatectoduodenectomy despite evidence suggesting that it increases complications. The effect of stenting on pancreatic fistula rates after pancreatectoduodenectomy has been variably reported in literature. **Aims:** 1. To analyse the incidence of pancreatic fistula in stented versus non stented patients across various pancreatic pathologies. 2. To determine whether demographic, preoperative and intraoperative parameters have significantly affected the incidence of pancreatic fistula in these two groups. 3. To determine the indications for stenting prior to pancreatectoduodenectomy and the ideal time gap between stenting and operation. **Methods:** Retrospective analysis of patients who underwent pancreatectoduodenectomy over the last 10 years at our centre. Patients who underwent prior biliary bypass were excluded. **Results:** Out of 402 patients who underwent pancreatectoduodenectomy, 6 were excluded because of biliary bypass earlier. 304 of the remaining were adenocarcinomas without underlying chronic pancreatitis, 42 with chronic pancreatitis and the rest net, GIST and other less common pathologies. 237 patients were not stented and 67 were stented in the adenocarcinoma group without chronic pancreatitis. There was no significant difference in any of the confounding factors between these two groups except a clinically insignificant difference in serum preoperative albumin of 0.3. There was a statistically significant increase in the pancreatic fistula rates in the stented group (29/67 versus 67/237), (P= 0.02). When subgroup analysis was done according to preoperative/ pre-stenting serum bilirubin values, the group with <10 bilirubin had a significant increase in the pancreatic fistula rates in the stented group when compared to the non-stented. 5/5 patients who underwent endoscopic ampullectomy followed by biliary and pancreatic stenting in this subgroup developed pancreatic fistula. By univariate and multivariate analysis, Pancreatic texture, presence or absence of stent were the significant factors affecting pancreatic fistula rate. Documented cholangitis was seen in only 4/67 patients who underwent stenting. 54 were stented for no particular reason. The time gap between stenting and operation did not affect the pancreatic fistula rates. Patients with chronic pancreatitis and requiring portal vein resection had a significantly reduced pancreatic fistula rate (p=0.02, p=0.007) irrespective of stenting due to a significant differences in pancreatic texture and duct diameter. **Conclusion:** We infer that in patients with an initial bilirubin less than 10 without frank cholangitis stenting significantly increases the risk of pancreatic fistula. Stenting both pancreatic and bile ducts after endoscopic ampullectomy or for preoperative pancreatitis considerably increases the chance of pancreatic fistula postoperatively. We conclude that stenting prior to pancreatectoduodenectomy is overdone despite contrary evidence and that the time gap between stenting and operation does not influence the rate of pancreatic fistula postoperatively. Univariate and multivariate analysis show that preoperative stenting along with pancreatic texture and duct diameter significantly affect the incidence of pancreatic fistula after pancreatectoduodenectomy. The presence of chronic pancreatitis and requirement of portal vein resection are indicators for a decreased incidence of pancreatic fistula irrespective of stenting.

**P67**

**Comparative Study Between Preoperative Predictive Factors (Using CT/MRI) And Intra-Operative Clinical Risk Score In Predicting Post Operative Pancreatic Fistulas (POPF).** Ashwin Alva, George Mathew Sebastian, Gandi Vikram, Vamsi Syamprasad, A Venugopal, S Mahesh, JM Manipadam, H Ramesh, Department of Surgical Gastroenterology & Liver Transplantation, Lakeshore Hospital, Cochin, Kerala, India.

**Introduction:** Pancreatectoduodenectomy (PD) is a complex surgical procedure associated with significant morbidity and mortality even in the high volume centres and POPF is the major contributor. Pre-operative prediction of patients with high risk of Post Operative Pancreatic Fistula (POPF) could make an impact on the POPF rate. Various risk prediction scores have been published to date but literature on comparative studies between pre-operative and intra-operative risk scoring systems are scarce. **Aims:** Primary outcome: Correlation between preoperative (CT/MRI characteristics) and intraoperative (using Clinical Risk Scoring) predictive risk factors for POPF. Secondary outcomes: To analyse various factors (including radiological and clinical which include pre-operative and intra-operative risk factors) associated with higher POPF rate and find correlation between them. **Methods:** 45 patients who underwent PD were included in the study after standard exclusions. The database was collected according to a standardised protocol which included all pre, intra- and post-operative information relevant to the management of similar patients. Previously validated CT/MRI based radiological risk scores and Clinical Risk Scores(intra-operative) were calculated for all patients. **Results:** Overall 13 patients (28.9%) developed CR-POPF in our study. Delayed Gastric Emptying (DGE) (15 patients) and Post Pancreatectomy Hemorrhage (PPH) (7 patients) were the next most common complications encountered. Both the risk scoring systems proved to be highly sensitive in our study and among the two, the intra-operative based clinical scoring system had an excellent sensitivity of 100% compared to 92.3% for the CT/MRI based system. Even though both the scoring systems had a low specificity of 46.88% each, the high sensitivity of these risk prediction scores makes them more acceptable as tools for detecting high risk patients for CR-POPF. In the ROC analyses, the intra-operative risk had an edge over the radiological score for the prediction of CR-POPF with an area under the curve
of 80.5% and 81.6% for CT/MRI based and intraoperative risk assessment systems respectively. When combining the gland and duct characteristics, grouping them into the respective composite POPF risk groups (i.e. low, intermediate and high risk). CT/MRI based risk assessment identified both low (6.25%) and high risk POPF (58.3%) groups but in the intraoperative method, only low risk group (0%) reached statistical significance. **Conclusion:** Both preoperative (CT/MRI based) and intraoperative risk scoring systems are capable of accurately predicting CR-POPF and compared to pre-operative risk assessment tool, intra-operative risk scoring is more sensitive and accurate. CT/MRI based risk score can definitely be a valuable tool to identify those patients who might land up in severe morbidity and mortality after PD and thereby help the surgeon to take the necessary steps in reducing the CR-POPF rate.
**M1**

**Is preoperative malnutrition in patients undergoing major gastrointestinal surgery a modifiable risk factor?**

*Halder PJ, Santhosh R, Jagjivan Ram Railway Hospital, Mumbai*

**Introduction:** Malnutrition in surgical patients is known to be associated with negative outcomes. In India, only a few investigators have studied the prevalence of malnutrition and its impact on surgical outcomes in patients undergoing major gastrointestinal surgery (GI) after nutritional supports. **Aims:** To study the prevalence of malnutrition, identify the patients at nutritional risk, and compare the outcomes of such patients undergoing major GI surgery after preoperative nutritional support. **Methods:** In this prospective study, sample size was calculated using 46% malnutrition in published literature, 112 patients undergoing open major GI surgery (defined as surgery lasting for >180 minutes) between June 2014 and December 2015 in our unit were studied. Subjective global assessment (SGA) was used to screen at-risk patients in addition to handgrip strength, serum albumin and anthropometry. **Results:** The incidence of malnutrition was 50% by SGA and 40.2%, 21.4%, 14.3% as per MAC, BMI and serum albumin levels respectively. Eighteen patients (54.5%) of SGA B group received nutritional support for 5.73±6.2 days others directly underwent surgery. All SGA B (N=23) received nutritional support for 21.3±13.26 days (R=14-68 days). Sixty eight percent of patients had atleast one complication. There was no statistically significant difference in overall complication among SGA A, B, C patients (p=0.306). Specifically, 65 (58%) patients had surgical site infections (Superficial and deep). The incidence was higher among patients with no malnutrition group (64.3%) compared to malnourished group (p=0.210). Pulmonary complications were higher 65.2% in severely malnourished group compared to 39% and 32% in SGA B and A group respectively (p=0.024). Cardiac and renal complications occurred in 12.5% and 14.3% in well nourished and 17% and 22% severely malnourished groups respectively (p=0.179 & p=0.307 respectively). Patients with low preoperative mean handgrip strength (p=0.001), haemoglobin (p=0.021) and higher preoperative percentage weight loss (p=0.024), preoperative blood transfusions (0.038) had significantly higher grades of complications. Twenty percent of patients (N=22) needed secondary abdominal interventions either surgical or radiological or both. Re-exploration/ procedure under anaesthesia were required in 12.5% and 8.9% of patients having malnutrition and no malnutrition respectively (p=0.311). The length of postoperative stay was significantly (p<0.001) higher among patients with higher grades of complications. The length of stay (14±13.47 days) in well nourished group and (17±15.19 days) in malnourished group (p=0.26). The mortality rate was 10.7%. The overall mortality rate in this study was 10.7%. There was 12.5% mortality (7 patients) in malnourished patients compared to 8.9% (5 patients) in well nourished group (p=0.509). **Conclusion:** There was malnutrition in 50% of patients undergoing major GI surgeries. Severe malnutrition requiring nutritional support was seen in significant proportion (20.5%) of patients. Low Serum albumin, low hand grip strengths and higher mean preoperative blood transfusions were significantly associated with higher complications. With nutritional support, the overall mortality and morbidity even in severely malnourished patients undergoing elective surgery are similar to their well fed peers, and hence malnutrition is a modifiable risk factor.

**M2**

**Inflammatory Myofibroblastic Tumour of the Spleen—A Rare Case Report.** Ramji Narendra Nalla, Sistla Sarath Chandra, Harish Gautam, Sakthivel Harikrishnan, JIPMER, Puducherry

Inflammatory myofibroblastic tumours are intermediate grade rare mesenchymal tumours. These tumours originates secondary to abnormal response to tissue injury following trauma, ebstein barr virus / herpes virus 8 infections or due to over expression of interleukin 6. These tumours are also called plasma cell granuloma, fibrous xanthoma, pseudo sarcoma, lymphoid hamartoma, myxoid hamartoma, inflammatory myofibrohistiocytic proliferation, benign myofibroblastoma (1). Most commonly they occur in lungs rarely in trachea, brain, breast, stomach, liver, spleen, kidney, oesophagus and ampulla of vater.(2)(3) These tumours has the ability to turn into malignancy.(4) 45 year old male presented with increased urinary frequency and left upper quadrant abdominal pain for past 6 months. He attended a local hospital for the same and diagnosed to have splenic space occupying lesion in ultrasound abdomen, further on CECT abdomen patient was suspected to have Haemangioma/ abscess. He had no history of B symptoms. Abdomen was soft, non-tender and no hepatosplenomegaly. Complete haemogram, Routine urine examination and culture was normal. Ultrasound abdomen showed 11.2 cm sized spleen with evidence of 6.8×5.3 cm well-defined hypodense lesion with few anechoic areas noted in the lower pole of splenic parenchyma, features...
suggestive of evolving abscess in the lower pole of spleen parenchyma. CECT scan showed well defined, lobulated 6.5×5 cm hypechoic lesion with internal vascularity and splaying of vessels found in the lower pole of spleen. Laparoscopic splenectomy was done. Microscopically showed peripheral normal splenic parenchyma with central ill circumscribed lesion predominantly showing fascicles of spindle cells in a collagenous stroma along with mixed population of many plasma cells showing russels bodies, lymphocytes, histiocytes and eosinophils. CD 23 has stained the follicular dendritic cells in the white pulp, CD68 has stained occasional macrophages leading to a diagnosis inflammatory myofibroblastic tumour of spleen. Inflammatory myofibroblastic tumour was described in lungs, it mimics malignant growth in clinical/ radiological/ histopathological grounds. Respiratory, Gastrointestinal tract, Head and neck regions are common sites.(1) They don't have any age preference but usually effects children and young adults. Equally affecting both the sexes with 1:1.4 (M:F). Clinically they are of short duration, presenting with painless indurated swelling with symptoms depending on the site of origin.(13) Lymphocytes, plasma cells, histiocytes, fi broblasts and myofi broblasts are the basic components of IMT, present in variable proportions. Four basic histologic patterns are commonly seen as follows: Dominant lymphoplasmacytic infiltrate; Dominant lymphohistiocytic infiltrate; Young and active myofi broblastic process and Predominantly collagenized process with lymphocytic infiltrate. The neoplastic nature was refl ected by some cytogenetic studies of chromosome 2p23 involving anaplastic lymphokinase (ALK) in about 50% of cases. These tumours can be metastatic or multicentric. (15) Though rare, inflammatory myofi broblastic tumours needs to be considered in the differential diagnosis of focal lesions of spleen and can be successfully managed laparoscopically and defi nite diagnosis will be made post resection pathologically.

M3
A Rare Occurrence of Pheochromocytoma and GIST in a case of Neurofi bromatosis Type 1. Anoop Sivakumar

Neurofi bromatosis Type 1 also known as von Recklinghausen's disease is an autosomal dominantly inherited disorder with a prevalence of 1 in 3000 general population (1). Associated with Neurofi bromin1 (NF1) gene mutation, which generates an increased risk of variety of tumour types (2,3). The current study reports a rare case involving NF 1, Pheochromocytoma and Gastrointestinal stromal tumours (GIST). A 45 year old lady presented with abdominal distension. Clinical examination revealed multiple diffuse soft tissue lesions throughout her body, amid pigmented macules on the skin. Per abdomen examination revealed a huge lump in the left hypochondrium extending to lumbar, epigastrium and umbilicus. Imaging was done with USG and MRI which were in favour of a large cystic retroperitoneal lymphangioma. We proceeded with exploratory laparotomy and found a 25×22×14 cm retroperitoneal tumour and two soft tissue lesions on jejunum 12 cm and 32 cm from DJ flexure. Excision of the retroperitoneal tumour, resection of the involved part of jejunum and end to end anastomosis of jejunum were done. Histologically retroperitoneal tumour turned out to be giant pheochromocytoma with extensive cystic degeneration and the small intestinal tumours as GIST. IHC of both awaited. This case is a rare occurrence of giant cystic pheochromocytoma and GIST in a case of NF 1. A literature review was conducted to identify the specific clinical features of patients with this condition. Only 13 similar cases have been reported world wide (3). In the present study there was no paroxysms of hypertension, head ache or palpitation. Thus the present study indicates that NF 1 - GIST - Pheochromocytoma is a rare occurrence with varied clinical symptoms which may be associated with variable prognosis. References: 1. Riccardi VM: Von Recklinghausen Neurofibromatosis. N Engl J Med305: 1617- 1627,1981. 2. Miettnen M, Fetsch JF, Sobin LH and Lasota J: Gastro intestinal stromal tumours in patients with neurofibromatosis 1. A Clinicopathologic and molecular genetic study of 45 cases. Am J Surg Pathol 30:90-96, 2006. 3. Kramer K Hasel C, Aschoff AJ, Henne-Bruns D and Wuerl P: Multiple gastrointestinal stromal tumours and bilateral pheochromocytoma in neurofibromatosis.: World J Gastroenterol 13: 3384-3387, 2007.

M4
Delivery of HIPEC (Heated Intraperitoneal chemotherapy) through CRRT (Continuous renal replacement) machine – an innovative technique. Yogesh Ashokkumar Bang, Pradeep R, Gurudu V Rao, AIG, Hyderabad

Cytoreductive surgery (CRS) followed by heated intraperitoneal chemotherapy (HIPEC) has brought paradigm shift in the management of primary peritoneal malignancy and peritoneal carcinomatosis due to malignancies of stomach, colon, appendix or ovary. There has been significant improvement in overall survival of these patients with use of CRS– HIPEC. Still use of CRS and HIPEC is not widespread and it is confined to limited centers. Primary reason for this is the equipment required for delivering HIPEC which is very costly. In fact there are some centers which perform CRS without giving HIPEC. HIPEC is delivered through specially designed HIPEC machines which consists of following parts– 1. Reservoir 2. Roller pump 3. Heat exchanger 4. Outflow and infl ow catheters 5. Temperature probes 6. Monitor screen. At our institute we are using CRRT machine to deliver HIPEC to patients of peritoneal carcinomatosis. CRRT machine consists of roller pump, infl ow and outflow tubes. We connect these
tubes to fluid warmer to heat the chemotherapy solution. Temperature is monitored with probes placed intra-abdominally. With this technique HIPEC can be delivered at 300-400 ml/min at desired temperature 40 degrees for required time. Overall efficacy is same and cost is significantly low. We have performed CRS with HIPEC in 6 patients of pseudomyxoma peritonei. We also used HIPEC in high risk colorectal cancer patients as prophylactic treatment to prevent peritoneal carcinomatosis (9 patients). HIPEC was delivered through CRRT machine and was found to be safe and highly cost effective. In view of wide spread availability of CRRT machines in most tertiary care setups, these machines can be used as a substitute to costly and limited available HIPEC machines for delivering HIPEC.

M5
Castleman's disease: A rare diagnosis of retroperitoneal mass. Satya Prakash Jindal, Indraprastha Apollo Hospital, New Delhi

Castleman's disease is a rare lymphoproliferative disorder. It is a pathological diagnosis and difficult to be diagnosed before surgery. Presentation of disease may be unicentric or multicentric. Two pathological variants have been described; hyaline vascular variant and plasma cell variant. Few cases with mixed pattern have also been reported. Hyaline vascular variant commonly presents as an asymptomatic unicentric mass, while the plasma cell variant has multicentric disease with systemic constitutional symptoms similar to a lymphoma. Multicentric disease has also been reported more commonly in patients with HIV & HHV-8 infection. We present a case of unicentric Castleman's disease. Our patient was a 42 year old male who presented with mild, recurrent pain abdomen. An USG abdomen done outside revealed a mass in left hypochondrium and FNAC of the lesion showed absence of atypical cells and was thus inconclusive. CT abdomen was done at our institute, which revealed a hypervascular homogenous mass of size 8x7.5 cms in the retroperitoneum, near the tail of pancreas. The mass was distinctly separate from the pancreas and was situated to the left side of the root of small bowel mesentery. Patient was planned for surgery and a complete en block resection of the lesion was done. Histopathological analysis of specimen revealed Castleman's disease with hyaline vascular variant. The pathogenesis of castleman's disease is not clear but it is believed that there is a significant role of IL-6 and VEGF. Unicentric disease is curable after complete resection. Associated small satellite nodules generally involute after resection of bulk of the disease. Multicentric disease is difficult to treat and there are no specific guidelines for treatment. Corticosteroids are beneficial in the management of an acute exacerbation, but a higher dose for chronic disease is not recommended. Rituximab and chemotherapy regimen used for lymphoma such as CHOP (cyclophosphamide, doxorubicin, vincristine, and prednisone) or CVAD (cyclophosphamide, vincristine, doxorubicin, and dexamethasone) has been used with variable response. Other IL6 targeted therapies including including Suramin, tocilizumab and siltuximab are being used in trial. Multicentric disease is associated with increased risk of certain malignancies, like large B-cell lymphomas and follicular dendritic cell sarcomas.

M6
A Tertiary Centre Experience of Splenic Artery Pseudoaneurysms. Koyyoda Prashanth, Osmania General Hospital, Hyderabad

Introduction: Visceral artery pseudoaneurysms are uncommon but commonly cause complications. Splenic artery is the most commonly affected visceral artery. They usually develop secondary to pancreatitis with abdominal trauma being the second most common cause. Other rare causes described are peptic ulcer disease and iatrogenic causes (e.g. prior abdominal surgery or endovascular interventions). Methods: We have retrospectively analyzed all the cases of splenic artery pseudoaneurysms dealt by us in our department and present the various modes by which we have tackled them and their follow up. Discussion: A total of 12 patients were identified who were all male. The mean age of presentation was 38.33 years with the common mode of presentation being hematemesis. All except one developed them on a background of pancreatitis and the one patient due to trauma. Diagnosis was by contrast enhanced CT with vascular reconstruction. One patient was managed with angioblolisation, One patient had percutaneous thrombin injection but had a rebleed and later required cystogastrostomy with overrunning of the aneurysm, one had splenic artery ligation, 9 underwent spleenectomy with distal pancreatectomy, 2 of them had additional pancreatic drainage procedure. Postoperatively one developed diabetes. One patient had adhesive small bowel obstruction on follow-up and was reoperated for it. Conclusion: Splenic artery pseudo aneurysms are not as rare as previously though and the incidence is rising as our threshold for imaging is falling. Their management is multidisciplinary but eventually majority of them require surgery of some sort for a permanent control. The threshold to offer surgery to large pseudo aneurysm (>2cm) should be low.

M7
Non-Parasitic Cysts of Spleen- A Case Series. Nitesh Naga Balaji Pagadala, V Venkatarami Reddy, Gavini Sivaramakrishna, C Chandramalakiteswaran, M Brahmeswara Rao, Sri Venkateswara Institute Of Medical Sciences, Tirupati

Introduction: Splenic cysts are very rare. Non- parasitic
cysts and parasitic cysts have a very similar clinical presentation but management of both differ. Hence it is important to distinguish them. Imaging cannot accurately differentiate between them. **Aim:** To study the demographic data, mode of presentation, imaging characteristics, surgery done, and outcomes in patients operated for splenic cysts in our institute. **Methods:** All patients operated for cysts of spleen at our institute from January 2016 to June 2016 were assessed retrospectively. Demographic data was noted. Imaging findings including the size were noted. Surgery done and postoperative outcomes were recorded. **Results:** 6 patients underwent surgery for cysts of spleen during the study period. Mean age was 26 years. 4 were male and 2 were females. 4 patients presented with pain abdomen, 2 presented with abdominal swelling. 5 patients underwent laparoscopic deroofing of cyst. One patient of generalised Lymphangiomatosis with massive splenomegaly underwent open splenectomy. Mean size of cyst was 11.5 cm. Post operatively, no patient had cyst recurrence. Histopathological examination of cyst wall revealed granulomatous pathology in one, organising hematoma in one and epithelial cyst in 3 and Lymphangiomatosis in 1 patient. All patients were discharged uneventfully with an average post op stay of 3 days. **Conclusions:** True nature of splenic cyst is always a diagnostic dilemma. Histopathological examination of cyst wall alone provides conclusive evidence. Symptomatic and large cysts >5 cm mandate treatment—usually surgical. Spleen preserving strategies are currently in practice.

**M8**

**Laparoscopic Repair of Diaphragmatic Hernia: Video.**

Nitesh Naga Balaji Pagadala, V Venkatarami Reddy, Gavini Sivaramakrishna, C Chandramaliteswaran, M Brahmeswara Rao, Sri Venkateswara Institute Of Medical Sciences, Tirupati

**Introduction:** Diaphragmatic ruptures can occur in up to 0.8% to 7% of blunt abdominal trauma, with the left side being more commonly involved. Approximately 40% to 62% of ruptured diaphragms are missed during the acute hospital stay. High index of suspicion should be maintained for early diagnosis. All traumatic diaphragmatic hernias should be repaired. Laparoscopy is being increasingly used in the diagnosis and treatment of traumatic diaphragmatic hernias with good results. **Aim:** To study the outcomes of laparoscopic repair of diaphragmatic hernias at our institute. **Methods:** Demographic data, imaging findings, surgery done and outcomes were recorded in patients undergoing laparoscopic repair of diaphragmatic hernia at our institute from January 2015 to April 2016. We present a video showing laparoscopic mesh repair of diaphragmatic hernia. **Result:** Six patients underwent repair of diaphragmatic hernia during the study period. Mean age was 29.25 years. There were 3 male patients and 3 female patients. All patients except one had antecedent history of trauma and the diagnosis was missed at the time of trauma. One patient had penetrating injury abdomen, rest of them had blunt injury abdomen. Diagnosis was confirmed with CT scan of chest or abdomen in all cases. Three patients underwent total laparoscopic repair, 2 patients underwent laparoscopic converted to open repair. One patient underwent open repair (in view of cardiac comorbidity). Mesh was placed in 4 patients whereas 2 patients underwent primary repair. All patients had an uneventful post operative recovery and are doing well on follow up. **Conclusion:** Laparoscopic repair of diaphragmatic hernia is an effective technique for the management of diaphragmatic hernias with the advantage of early post operative recovery.

**M9**

**Laparoscopic excision of mesenteric tumours.** Vinay Kumar Shaw, Rockland Hospitals, New Delhi

**Introduction:** Primary tumours of the mesentery are rare. They can be solid or cystic, benign or malignant and can be seen in all age group from infancy to elderly. Surgical removal is adequate treatment in majority of these. Laparoscopy can be both diagnostic and therapeutic and we present two different types of mesenteric tumours, both of which were managed laparoscopically. **The Cases:** Case 1: 50 year lady, presented with partial intestinal obstruction. CT abdomen findings were suggestive of 8x8x6 cm sized intra peritoneal tumour in relation to small bowel ? small bowel GIST. During laparoscopy it was seen that the tumour was solid and was arising from the mesentry and safe excision was possible without comprising the vascularity of bowel and segmental bowel resection could be avoided. Biopsy findings were consistent with histological findings of Extra intestinal-GIST of low grade. Patient had an uneventful recovery and could be discharged on 3rd post-operative day. Case 2: On evaluation of pain abdomen in an 11 year girl, mesenteric cyst of 8X8X7 cm was diagnosed on imaging. Laparoscopic excision of the cyst was done and HPE was suggestive of benign lymphatic cyst. Patient was discharged on 1st post–operative day. **Discussion:** There can be heterogeneous presentation of mesenteric lesions; however, most of them require excision alone. Laparoscopy has a significant role in management of these tumours, whose excision is simple and does not require advanced laparoscopic skills of bowel anastomosis and stapling. One of our cases was an Extra-intestinal GIST (E-GIST) which was too amenable to laparoscopy which is rare. Laparoscopic excision is feasible and safe option in majority of mesenteric tumours.

**M10**

**Laparoscopic Median Arcuate Ligament division for Celiac artery compression syndrome: Outcomes and lessons learned.** M Noushif, Arunkumar ML, TK Mohamed
**Introduction:** Median arcuate ligament syndrome (MALS) resulting from celiac artery compression is a rare disorder with debated management and outcomes. We report our experience with Laparoscopic MAL division (LMALD) and clinical outcomes. **Methods:** Retrospective review of prospectively maintained database of patients who presented with clinical and radiological features (on CT angiography) of MALS and underwent surgery between 1st January 2014 and 31st May 2016 was performed. LMALD was performed for all patients. Celiac axis lymph node was dissected off for access to celiac trunk, and LMALD was performed for all patients. Celiac axis lymph hence was routinely biopsied.

Results: Five patients (mean age 41 years; M:F=2:3) who were symptomatic for a mean duration of 9.8 months (range 1-24) underwent surgery. Preoperative symptoms included post-prandial abdominal pain (n=5), vomiting (n=1), gastroesophageal reflux symptoms (n=1), loss of appetite (n=3) and loss of weight (n=1). Two patients each had Hypertension and Non Alcoholic Fatty Liver Disease (NAFLD). CT angiography showed a mean celiac axis stenosis of 66% (range 50-80%). Two patients each underwent concomitant cholecystectomy (for gall bladder polyps) and liver biopsy (for NAFLD). Postoperative morbidity was limited to Grade 1 (Clavien-Dindo classification) in 40%, which included mild pancreatitis (n=2) prolonging the hospital stay [mean 2.2 days (1-3 days)]. Two patients had transient diarrhea of which one required readmission. Celiac lymph node histopathology showed reactive changes in 3 patients, Sinus Histiocytosis in two patients with one patient having microgranulomas and antrhoeptic pigments. Over a mean follow up of 11.2 months (range 1-16), symptomatic improvement was noticed in all patients, except for recurrent pain in one patient who had prolonged preoperative duration of symptoms (24 months) and 80% celiac stenosis. **Conclusion:** Early LMALD may provide better symptomatic relief for MALS, though transient diarrhea and mild pancreatitis remains a concern postoperatively. In patients with gall bladder disease, MALS should be ruled out in those with predominant postprandial abdominal pain and atypical symptoms, before considering laparoscopic cholecystectomy. Etiological association of Sinus Histiocytosis needs further studies in larger series.

**M12**

**Omphalic Bleed - A rare case report.** Loka Vijayan Siddha, Raj Kumar N, Mayank Mangal, JIPMER, Puducherry

The formation of portosystemic collaterals happens more commonly in patients with portal hypertension. These collaterals are common at the esophagogastric region, gastric fundus and ectopic sites like duodenum, jejunum, ileum, colon, rectum, enterostomy stoma, retroperitoneum, anterior abdominal wall, and umbilicus. Bleeding from the ectopic varices is rare and literature available on umbilical varices bleed are very few. We present here a case of a 55 yr old gentleman who presented with the complaint of bleeding from the umbilicus with severe hypovolemic shock. Bleeding was suspected to be from the umbilical varices. CECT abdomen with angiography revealed cirrhotic liver with partial thrombosis of portal vein with collaterals in perigastric, lower esophageal, peripancreatic, splenic and mesenteric, umbilical and parumbilical collaterals with recanalization of the umbilical vein. The bleeding vessel was identified to be the single collateral at umbilical region draining into the superior mesenteric vein. The patient was treated with Doppler guided injection of sclerosant into the collateral and thereby achieving successful hemostasis. There are various nonsurgical and surgical modalities available for treating bleeding ectopic varices. Non-surgical modalities are band ligation, injection sclerotherapy, transjugular intrahepatic portosystemic shunt (TIPS), embolization and surgical modalities are ligation of varices, local devascularization, overworking of veins, creation of nonselective portosystemic shunt and liver transplantation. Among all the available modalities depending upon the feasibility and patients general condition, the management should be individualized.

**M13**

**Cytoreductive surgery (peritoneectomy) with hyperthermic intraperitoneal chemotherapy (HIPEC) for pseudomyxoma peritonei: A video demonstration.** Ramakrishnan Ayloor Seshadri, Cancer Institute (WIA), Chennai

Pseudomyxoma peritonei (PMP) is a clinical condition characterised by accumulation of massive amounts of...
Mucinous jelly like ascites within the peritoneal cavity. In 95% of cases, it is secondary to a mucocele or mucinous carcinoma of the appendix. Previously debulking surgery was being performed which inevitably resulted in recurrence of the disease. The current standard of care is cytoreductive surgery (CRS) to completely remove all tumor followed by hyperthermic intra peritoneal chemotherapy (HIPEC). This video demonstrates CRS and HIPEC in a lady with PMP. The surgery begins with a thorough inspection of the abdominal cavity to calculate the peritoneal cancer Index (PCI). CRS involves six peritonectomy procedures as described by Paul Sugarbaker: parietal peritonectomy, pelvic peritonectomy, right and left sub-diaphragmatic peritonectomy, greater omentectomy and lesser omentectomy. Organ resection is performed wherever required, usually in the form of right hemicolectomy, anterior resection, hysterectomy, splenectomy, cholecystectomy or antrectomy. The goal is to achieve a complete cytoreduction score (CCS) of zero or one in PMP. If CCS-0/1 is achieved, then HIPEC is performed. There are two methods of doing HIPEC—the closed method as shown in this video or the open method. In PMP, the chemotherapeutic drug used is usually mitomycin-C given as shown in this video or the open method. In PMP, the chemotherapeutic drug used is usually mitomycin-C given as shown in this video or the open method. In PMP, the chemotherapeutic drug used is usually mitomycin-C given as shown in this video or the open method. In PMP, the chemotherapeutic drug used is usually mitomycin-C given as shown in this video or the open method. In PMP, the chemotherapeutic drug used is usually mitomycin-C given as shown in this video or the open method.

M14
Massive splenic artery aneurysm with aneurysmal dilatation of the portal vein and splenic infarct: A Case report and review of literature. Samrat Ray, Amitabh Yadav, Samiran Nundy, Sir Ganga Ram Hospital, New Delhi

Introduction: Aneurysms of the splenic artery are rare but potentially life threatening problems and the risk of complications increases manifold with their increase in size. Aneurysms of the portal vein aneurysms are even rarer with as few as only 200 cases being reported in the surgical literature. The presence of both aneurysms in the same patient has not been previously described previously and presents a therapeutic challenge. The Case: A 56 year old apparently healthy male presented with vague upper abdominal discomfort with fever, headache and a palpable spleen. Evaluation by triple phase computed tomography of the abdomen revealed a large 9x8 cm sized aneurysm in the distal third of the splenic artery with an aneurysmal dilatation of the portal vein about 48 mm at the porta hepatis, splenomegaly with a splenic infarct and multiple gallstones. Laparotomy with distal pancreatosplenectomy, excision of the aneurysm and cholecystectomy were done. Gross evaluation of the specimen revealed a 10 cm aneurysm of the distal splenic artery containing organised thrombus with an infarct at the lower pole of the spleen. Discussion: Presentation of a massive splenic artery aneurysm in association with a portal vein aneurysm is an exceedingly rare clinical phenomenon. Most portal vein aneurysms being asymptomatic, may be left alone and followed up periodically. The splenic artery aneurysm can be managed by open, laparoscopic or endovascular routes. Owing to the large size and complicated nature of the disease, laparotomy with excision and splenectomy remains the mainstay of treatment. Conclusion: We describe an extremely rare association of coexistent aneurysms of the splenic artery and portal vein which was managed by distal pancreatectomy and splenectomy.

M15
Video presentation: Laparoscopic management of Median arcuate ligament syndrome. Ram Raksha Pal, Deepak Mittal, Sanjay Patolia, Mahendra Narwaria, Asian Bariatrics, Ahmedabad

Aim: Video demonstration of technique of median arcuate ligament release for decompression of celiac artery. Introduction: The median arcuate ligament passes superior to the origin of the celiac artery. It is a continuation of the posterior diaphragm that wraps over the aorta. If it lies too low on the aorta, the ligament may cause external compression of the celiac artery leading to symptoms like post prandial abdominal pain, weight loss. The Case: 50 years male patient diagnosed as a case of median arcuate ligament syndrome on the base of history and cross sectional imaging with CT angiography. He was taken for laparoscopic release of median arcuate ligament and decompression of celiac artery. Operative time was 70 min and blood loss was about 20 ml. Patient had smooth post operative recovery, started orals on first post operative day and discharged on 2nd post operative day. His symptoms of post prandial pain completely disappeared and he is under follow up since last 3 months. Conclusion: Median arcuate ligament syndrome is a rare entity and is a diagnosis of exclusion. A patient with suspected compression of the celiac artery should undergo a Doppler study followed by CT angiography. Patients who have evidence of median arcuate ligament syndrome should undergo surgical decompression, which can be accomplished laparoscopically. Laparoscopy provide good exposure and definite short term benefits over open surgery in this.

M16
Post ERCP Perforation: Presentation and Management. Abhishek Arun Bhagwat, Santosh Gudimani, Mustafa Razvi,
One of the most feared complication of ERCP is perforation. Recent studies have shown that incidence has reduced for 0.5-2.1% to less than 0.5% because of increase in experience and betterment of technique. Three types of perforation complicating ERCP have been recognized i) Retroperitoneal duodenal perforation, ii) bowel-wall perforation & iii) Perforation of the bile ducts. We present our experience of managing 3 patients in last one year who presented to us with post ERCP perforation. First case was a 62 year old gentleman who underwent ERCP elsewhere for obstructive jaundice due to choledocholithiasis. He presented to us after a gap of 16 days post ERCP with fever and pain abdomen and on evaluation was found to have infrahepatic collection which on drainage was mixture of bile and pus. He was managed with pigtail drainage and recovered well and is planned for Cholecystectomy. Second case was a 65 year old gentleman who also underwent ERCP for obstructive jaundice due to choledocholithiasis. He had a history of open cholecystectomy done 8 years back. While doing ERCP patient suddenly developed subcutaneous emphysema over face, chest and abdomen with desaturation. Air entry in both the lung fields were reduced and so B/L ICD was put in view of pneumothorax and further referred to our hospital. Our evaluation revealed a large retroperitoneal air extending to mediastinum with right pneumothorax with suspicion of duodenal perforation. After stabilizing we did exploratory laparotomy on him and a posterior D2 perforation was seen which was repaired primarily with CBD exploration and T-tube insertion. T tube was removed after 1 month after confirming a clear cholangiogram. Third case was a 17 year old girl who underwent ERCP with CBD clearance and PD stenting for chronic calcific pancreatitis with choledocholithiasis. Following which she presented to us with pain and fever after 8 days of procedure. On evaluation she was found to have infrahepatic collection with air pockets. We did ERCP which revealed bile leak from mid CBD and biliary stent was placed. Then laparotomy was done which revealed an infrahepatic collection with sloughed off CBD, lateral pancreaticojejunostomy & drains were placed. She recovered well and was discharged. On follow up she landed in recurrent stent blockade so multiple stents were place. Seven months later ERCP revealed no bile leak so stent was removed. Later she landed up in hial strictures and is planned for hepaticojejunostomy.

**Conclusion:** Post ERCP perforation can present immediately or delayed depending upon the site, size of perforation. One should have very high suspicion for procedure related complication in patients who have previous upper abdominal surgery or interventions. ERCP and oral contrast CT scan can help confirm the diagnosis.
M18
Laparoscopic TAPP- A study on the learning curve and early outcomes. Bejoy Abraham, Janaki Kritika Chandra Mohan, Renai Medicine Multispeciality hospital, Cochin

Introduction: Inguinal hernia is increasingly being treated laparoscopically. Controversies exist about which procedure is superior (Cochrane review 2005). Some studies criticize laparoscopic TAPP repair for higher rate of intra abdominal injuries. The aim of our study is to analyse short term outcome (2 year follow up) of TAPP performed in our hospital and compare it with historical TEP controls.

Methods: This retrospective study was conducted employing multi-database systematic search on lap TAPP inguinal hernia repair performed in a tertiary care set up in Kochi. Details of 100 patients operated over the past 2 years were analysed allowing a follow up period ranging from 6 months to 2 years. Various parameters such as duration of operation, immediate post op complications like infection, seroma, delayed complications like orchitis, neuropathy, inguinodynia, recurrence and rate of conversion to open technique were evaluated. The patients were evaluated in the OPD about 2 weeks before the procedure. Strain factors were analysed, investigated and optimized. They were admitted the day before the surgery. Surgical technique involved creation of ports, incision of peritoneum without incising transversalis fascia, exposure of Cooper’s ligament medially, iliac vessels laterally. Clearance of pre vesical space to achieve about 3 cm mesh overlap around the myopectineal orifice was ensured. The mesh was tacked at the pubic tubercle and positioned well followed by closure. The patients were discharged on POD 1 or 2.

Results: Of the 100 hernias studied, 96 were in males and 4 were in females. 3 patients had recurrent hernias. The duration of operation was about 3 hours in the first 20 cases and it gradually lessened to 30 minutes for the last 20 cases. There was no infection and orchitis in any patient. Seroma occurred in 7 patient who had large hernia sacs that required considerable dissection. Neuropathy was encountered in 2 patients who had malagira paresthetica. None of the patients had symptoms of small bowel obstruction. There were no recurrences reported at the point of 2 year follow up. Conclusion: Laparoscopic TAPP for inguinal hernia repair is a safe and effective procedure with few complications and low recurrence rates, as good as or better than TEP with the added advantage of a shorter learning curve and ability to adapt quickly for all types and sizes of inguinal hernias.


M19
Indications for Splenectomy– Diagnosis Vs Therapeutic? Abinaya R Nadarajan, CMC, Vellore

Introduction: Splenectomy is performed as a diagnostic and therapeutic procedure for a wide spectrum of indications. This study was performed to look for evolving indications and its outcome. Methods: Patient undergoing elective and emergency splenectomy in our surgical unit from September 2011 to July 2016 were included. The indications for operation, its diagnostic significance and the outcomes were analysed. Results: From September 2011 to July 2016, totally 68 patients underwent splenectomy. Out of 68 patients, 13 patients had emergency splenectomy. There were 49 open operations, 4 laparoscopic converted to open operations and 15 had laparoscopic splenectomy. The splenectomy was performed as a therapeutic intervention in 46 patients (68%) and as a diagnostic modality in 22 patients (32%). The indications for therapeutic intervention were splenic abscess (2), splenic cyst (4), trauma (8), ITP (20) and anemia (12). The indications for diagnostic splenectomy were pyrexia of unknown origin in 7 patients and splenomegaly with anemia or pancytopenia in 15 patients. The objective of the operation was achieved in 43 patients (63%). The success rate for each indication: diagnosis (12 of 22 patients, 55%), thrombocytopenia (12 of 20 patients, 60%), anemia (5 of 12 patients, 42%) and as a primary treatment (12 of 14 patients, 86%). Postoperative morbidity within 30 days of surgery was seen in 9 patients (13%) and 2 patients (0.03%) died within 30 days of surgery. Conclusion: Splenectomy is an effective procedure in the diagnosis of some diseases and as therapeutic means in selected patients as mainline treatment. However, splenectomy should be performed only after careful evaluation for the risks and the potential benefits to the patient.

M20
A Clinicopathological Profile of Mesenteric Vein Thrombosis. Rajesh Gangavatiker, Air Force Hospital, Kanpur

Introduction: Mesenteric vein thrombosis (MVT) is uncommon. The incidence is reported as 2/lakh in an autopsy series and it accounts for 20-33% of all cases of mesenteric ischemia. This abdominal emergency is rarely diagnosed early, can be lethal and is associated with high morbidity and mortality. Aim: To evaluate the clinical and pathological profile of patients of acute mesenteric vein thrombosis. Methods: Cases with abdominal pain with operative or imaging studies demonstrating mesenteric vein thrombosis were included in this retrospective study. After a detailed history and clinical examination, USG,
plain X-ray of abdomen and chest were done along with haematological and biochemical tests in all the cases including amylase and liver function tests. Cases with more symptoms than clinical signs with raised total leucocyte counts were suspected to have MVT and USG doppler of the portal venous systems was done. In cases where USG doppler was inconclusive CT/MRI was done. Cases with confirmed SMV thrombosis on investigation or at laparotomy were included and those with features of peritonitis were operated. Results: 23 patients were included from Dec 2005 to Apr 2016. Age ranged from 16 to 51 years. There were 19 males and four females. 15 (65%) presented with acute pain and the remaining with insidious onset of pain. 10/23 had GI bleed in the form of melena. First clinical diagnosis was pancreatitis in all. The time gap between the first and final diagnosis ranged from 12 hrs to 14 days (median 3 days). In 17 of 23 patients the diagnosis could be established by radiological means. 60% (14/23) required laparotomy for peritonitis. Seven underwent resection and side to side anastomosis 7 to 10 cms from cut margin with laparostomy for 72 hours. Six patients underwent massive bowel resection with primary closure and laparostomy in four patients and jejunostomy in 2 patients. Overall mortality was 3/23 (13%). Two patients who underwent massive resections died in the postoperative period. One patient who presented late in septicaemia and multiorgan failure died on the 2nd post operative day. Two patients who underwent massive bowel resection developed short bowel syndrome. All received heparin infusion till the risk of surgery/re-surgery was over and then converted to oral anticoagulation to keep the PT INR around 2 to 2.5. 19 patients are on follow up with oral anticoagulation ranging from 6 months to 5 years. Prothrombotic work up could be done in 18 patients and a cause of thrombosis could be identified in 8 cases (44%). 2 patients each were found to have protein C & S deficiency, 2 were found to have homocysteinuria and 1 each were found to be positive for homocysteinuria and factor V Leiden mutation. Conclusion Mesenteric vascular thrombosis poses a diagnostic dilemma. A high risk of suspicion helps in early diagnosis. Gangrenous bowel resection with anastomosis and transparent laparostomy avoids ileostomy, second/third laparotomy and considerable morbidity. A diligent search for prothrombotic factors must be made. Duration of anticoagulation remains controversial.

M21
Bacteriological Profile of Patients with Intra-Abdominal Sepsis and Superficial Surgical Site Infection following Emergency Abdominal Surgery- Is it concordant. Subair Mohsina, Aggarwal Ridhima, Sathasivam Suresh Kumar, Samanna Gubbi Sreenath, Sistla Sujatha, T Mahalakshmy, Vikram Kate, JIPMER, Puducherry

Introduction: Surgical Site Infection (SSI) is an important cause of post-operative morbidity and mortality. Better understanding of the risk factors and regional bacteriological profile is needed for designing effective prevention strategies against SSI. Hence this study was carried out to investigate the risk factors and bacteriological profile of SSI and to analyze its concordance with that of intra-abdominal sepsis in patients undergoing emergency gastrointestinal surgery. Methods: This is a prospective analytical study, enrolling all consecutive patients undergoing emergency gastrointestinal surgery in a tertiary-care center. Pre-operative patient characteristics, operative variables and peritoneal fluid culture were recorded. The post-operative SSI was assessed using the ASEPSIS score till the 30th post-operative day. A wound swab was taken and recorded if SSI developed. The bacteriological profile of intra-abdominal sepsis and SSI was then correlated. Results: A total of 100 patients were included. Incidence of SSI was 33%. 18 of the 33 patients with SSI had pre-operative intra-abdominal sepsis, of which 10 patients showed concordance in their bacteriological profile of 55.6% E. coli, Enterococcus fecalis, Klebsiella pneumonia, Candida and beta-hemolytic Streptococci showed concordance between the intra-abdominal sepsis and SSI. Gram-negative strains isolated from the SSI showed higher resistance than those isolated from intra-abdominal specimen. In contrast, gram-positive organisms isolated from SSI showed significantly lesser resistance than those isolated intra-abdominally. Significant risk factors by univariate analysis were age (p=0.015), preoperative blood transfusion (p=0.012), type (p=0.042) and duration (p=0.005) of surgery, significant blood loss (p=0.027) and placement of drain (p 0.011). Blood transfusion (11/18 vs. 7/1 p=0.027) and duration of surgery (2.86 (1.5) hours vs. 2.02 (0.8) hours p=0.005) were found to be independent risk factors for the development of SSI by multivariate analysis. Type of wound and the part of gastrointestinal tract involved (11/26 and 22/74 upper and lower GI respectively p=0.352) did not significantly affect the development of SSI. Conclusion: There was definite concordance between the bacteriological profile of the isolate from SSI and intra-abdominal specimens. Intra-abdominal sepsis does have a significant role in the development is SSI, while the part of GI operated upon in the development of SSI did not have a significant influence.

M22
Gastrointestinal Surgery in Patients on Antiplatelet Therapy. Ritesh Kumar, Sarasans Bansal, Iqbal Singh, Rudra Prasad Doley, Atul Sharma Joshi, Rajeev Kapoor, Jai Dev Wig, Fortis hospital, Mohali

Introduction: Antiplatelets are being commonly used in patients with ischaemic heart disease and occlusive
vascular disease. Temporary interruption of antiplatelet therapy during gastrointestinal surgical procedures exposes patients to thrombotic risks. Coronary stent thrombosis is a clinically devastating complication in the context of non-cardiac surgery performed in patients with coronary artery stents in whom antiplatelet therapy has been interrupted. Continuation of antiplatelet therapy is associated with increased risk of bleeding. Managing this can be a particular challenge in emergency setting. The aim of our study was to evaluate the outcome of patients receiving antiplatelet therapy who underwent emergency or elective gastrointestinal surgery. **Methods:** The study was a prospective, observational study. Patients taking aspirin, clopidogrel or both aspirin and clopidogrel were included. Patients, who were planned for elective gastrointestinal surgery, stopped antiplatelet therapy 5-7 days prior to surgery (Group A). Antiplatelet therapy was continued in the patients who underwent emergency gastrointestinal surgery (Group B). Patients were followed for thirty days after the surgery. Primary end points of our study were incidence of perioperative bleeding and any major thromboembolic event. Secondary end points were need for blood transfusion, re-exploration or reintervention due to bleeding. **Results:** Fifty five patients were included in our study with forty four patients in Group A and eleven patients in Group B. Mean age of Group A was 71±6.7 years and of Group B was 69.36±12.14 years. Patients in Group A underwent hernia surgery (36.36%), pancreaticobiliary surgery (34.09%), oncological surgery (15.91%), restoration of bowel (9.09%) and appendectomy (4.54%). Patients in Group B underwent hernia procedures (36.36%), small bowel surgery (36.36%), colorectal surgery (18.18%) and gastrectomy (9.09%). Bleeding complications were significantly higher in Group B (45.45%) which was 2.27% in Group B (p=0.002). Transfusion requirement was also higher in Group B (45.45%) while it was 4.45% in Group A (p=0.002). No difference in the major cardiac events was noticed between Group A (6.82%) and Group B (9.09%) with a p value of 1.00. Mortality rate was 4.55% in Group A and 27.27% in Group B (p=0.049). No re-exploration or mortality was noticed due to bleeding complication. **Conclusion:** The risk of bleeding is significantly increased in the patients with continued antiplatelet therapy. Besides this, transfusion requirement is significantly higher in patients with continued antiplatelet therapy. Satisfactory outcomes were obtained in the patients undergoing elective gastrointestinal surgery.

**M23**

**Nutritional Assessment in Patients with Gastrointestinal Malignancy and its Impact on Adverse Events following Surgery.** Pankaj Kumar Sonar, Azhar Perwaiz, Amanjeet Singh Arora, Adarsh Chaudhary, Medanta the Medicity, Gurugram

**Introduction:** The prevalence of malnutrition in patients suffering from cancer ranges from 40% to 80% and gastrointestinal tract malignancy has the highest prevalence of malnutrition. It has a deleterious effect not only on the postoperative course of cancer surgery but can also complicate or even limit administration of postoperative chemotherapy or radiotherapy. For these reasons, malnutrition or a risk of malnutrition must be assessed early in the course of the disease and is performed by many parameters and diagnostic tools which are principally questionnaires. **Methods:** We performed a prospective observational study (N=532) of nutritional assessment (using two validated tools NRS 2002 and PGSGA) in patients with GI malignancy and its impact on adverse events following surgery. The association of adverse event with nutritional status was tested using Chi square test. Univariate analysis and multivariate logistic regression analysis was performed to examine the relationship between adverse events. Kappa statistics was used to study agreement between the two tools. SPSS version 22.0 statistical software was used for analyses. P value <0.05 was considered significant. **Results:** Majority of patients (411/532) were SGA grade A or NRS 2002 score ?3. 121/532 had moderate malnutrition (Grade B) by PG SGA or at nutritional risk (score >3). The overall incidence of adverse events was 24.8% (132/532). Mortality was 3.38% (18/532). Nutritionally depleted patients (Grade B PG-SGA and NRS >3) had a higher incidence of postoperative complications/mortality particularly following a major surgical procedure. Adverse events following surgery were more frequent (32.9 versus 19.2 percent) in age more than 70 years. Small bowel, colorectal, hepatobiliary or pancreatic malignancy had statistically significant incidence of adverse events, when nutritionally depleted (NRS 2002 score >3 or PG SGA grade B). Major surgery (like Whipple’s, esophagectomy, etc) had a significant association with adverse events in moderately malnourished (PGSGA grade B) or in patients who were at nutritional risk (score >3). **Conclusions:** The prevalence of malnutrition as determined by PGSGA and NRS 2002 in our hospital setting was lower than that reported in literature. NRS 2002 or PGSGA tools identified same number of patients with malnutrition and were complementary to each other in predicting adverse events (complications or mortality). Either of these tools can be used during in preoperative setting to assess nutritional status.

**M24**

**Prospective validation of Comprehensive clinical index (CCI) in patients undergoing GI surgical procedure.** Karthik Keshav Raiichurkar, Vedvya Mohapatra, Rajesh Panwar, Sujay Pal, Nihar Ranjan Dash, Pratap sharan, Peush Sahni, AIIMS, New Delhi

**Introduction:** CCI has been proposed as a numerical measure of postoperative morbidity. However, it has not
been validated prospectively. We aim to validate the CCI in patients undergoing GI surgical procedures by using patient-centered outcomes including health-related quality of life (HR-QoL), duration of stay in the intensive unit (ICU) and the postoperative stay. **Methods:** All consecutive patients undergoing surgery in the Department of GI surgery, AIIMS New Delhi between September 2015 and April 2016 were included. HR-QoL was assessed at admission and at discharge or 2 weeks after surgery (whichever was later) using the WHO Qol BREF questionnaire and the difference between these two was calculated. Patients who died in the postoperative period and those who underwent emergency surgery could not have both HR-QoL assessments done and hence were excluded from this comparison. All postoperative adverse events were noted and graded according to the Clavien-Dindo classification. CCI was calculated as per the previously described formula. Spearman’s coefficient (r) was used to assess correlation between CCI and HR-QoL, duration of stay in the ICU and the postoperative stay. **Results:** A total of 140 patients (Mean±SD age=43.2±16.9 years, Male:Female=73:51, Elective:Emergency=105:19) were included in the study. The operative mortality, morbidity (Clavien-Dindo) and major complications (grade IIA or above) were 11.4%, 93% and 48% respectively. Mean duration of ICU stay and mean postoperative stay were 6±7.9 days, 16.6±16.1 days, respectively. CCI showed a significant but low level of correlation with change in HR-QoL scores for overall quality of life and general well being (r=0.23, 95% CI=0.04-0.40, p=0.02) and physical health (r=0.23, CI=0.035-0.4, p=0.02). However there was no correlation with the psychological, social and environmental domains. CCI also showed a significant correlation with the Clavien-Dindo classification (r=0.57, CI=0.44 to 0.70, p<0.0001), duration of ICU stay (r=0.57, CI=0.44 to 0.70, p<0.0001) and the post operative stay (r =0.68, CI=0.57-0.77, p<0.0001). **Conclusion:** CCI correlates with the existing standards of measuring morbidity in patients undergoing GI surgical procedures. **Reference:** Slankamenac K, Graf R, Barkun J, Puhan MA, Clavien PA. The comprehensive complication index: a novel continuous scale to measure surgical morbidity. Ann Surg. 2013 Jul;258(1):1-7.

**M25**  
**Open Ventral Hernia Repairs Without Drain: A Prospective Study.** Manish Sharma, Pavan Kumar MN, Lohith U, Yashoda Superspeciality Hospital, Hyderabad

**Aims:** The aim of the study was to look at the feasibility of open ventral hernia repair without drain. **Introduction:** Ventral hernias are commonly encountered in surgical practice. The estimated incidence of ventral hernia is around 2–10%. Most of the repairs are still done by open technique with drains. It has been shown by previous large randomised studies that seroma rates are around 19-52.4% and wound infection rates around 4-19%. **Methods:** This prospective study included 40 consecutive adult patients with uncomplicated ventral hernia, either primary or secondary. The patients were operated upon by means of retromuscular (sublay) mesh repair technique, with minimal dissection in subcutaneous plane and none of the patients had drain placed. If seroma occurred, they were managed with percutaneous aspiration in outpatient basis. All patients were evaluated as regards of operative time and postoperative complications. Results were documented and statistically analyzed. **Results:** Mean operative time was 60-90 (69.52+/− 7.25) minutes. Seroma occurred in 3 (7.5%) patient, all of whom were managed with single time aspiration in outpatient basis. Wound infection occurred in 1 (2.5%) patient, which was managed with serial dressings in outpatient basis. Mean hospital stay was 1-3 (mean = 2) days. There was 1 (2.5%) hernia recurrence at the lower end of the repair. **Conclusion:** We conclude that open ventral mesh repair without drain is a feasible technique for ventral hernia repair, with minimal post operative complications when compared to historical data. Further evaluation of this technique with larger number of cases is warranted.

**M26**  
**Correlation of intraoperative events with postoperative outcomes and quality of life in patients undergoing gastrointestinal surgery.** Karthik Keshav Raichurkar, Rajesh Panwar, Vedvyas Mohapatra, Sujay Pal, Nihar Ranjan Dash, Pratap Sharan, Peush Sahni, AIIMS, New Delhi

**Introduction:** Intraoperative adverse events may have a bearing on postoperative outcomes but are not usually reported. A recent classification system has been proposed for standardized reporting of intraoperative adverse events. We proposed to validate the classification of intraoperative adverse events by correlating it with postoperative outcomes and health related quality of life (HR-QoL). **Methods:** All patients undergoing surgery in the Department of GI Surgery, AIIMS, New Delhi between September 2015 and April 2016 were included. HR-QoL was assessed at admission and at discharge or 2 weeks after surgery (whichever was later) using WHO Qol BREF questionnaire and the difference between the two was assessed. Patients who died in the postoperative period and those who underwent emergency surgery could not have both HR-QoL assessments done and hence were excluded from this comparison. All intraoperative adverse events were recorded according to the Clavien-Dindo classification. Spearman’s coefficient (r) was used to assess correlation between intraoperative adverse events and the difference in HR-QoL, duration of ICU stay and postoperative stay. **Results:** A total of 140 patients...
Feasibility of ERAS and its impact on postoperative outcome in gastrointestinal surgical patient. Satya Prakash Jindal, Indraprastha Apollo Hospital, New Delhi

Introduction: ERAS (Enhanced Recovery after Surgery) program consists of perioperative care regimen which facilitates early ambulation and discharge after surgery. This was first introduced by Professor Henrik Kehlet in 1991. ERAS program combines a number of perioperative elements to actively enhance post-operative recovery. After sufficient evidence in favour of this program, most surgeons accept that ERAS is beneficial to patients. But there is wide variation in implementation of ERAS in clinical practice. We thus planned to study the feasibility of ERAS and its impact on postoperative outcome in Indian perspective. Method: We included consecutive 70 patients undergoing elective gastrointestinal surgery at our institute in the study. Perioperative protocol published by ERAS society was adopted as baseline. Feasibility of each component of ERAS was recorded along with reason for noncompliance. Patients were followed up to 30 days postoperatively and outcome was measured in terms of hospital stay, complications, readmission rate and resumption of normal activity. Results: Multidisciplinary involvement was favorable in our setup. A total of 21 components encompass our ERAS protocol; 16 or more components were applicable in 70% (49/70) of cases and 15 in the rest. We applied 2 hrs fasting for clear liquid in all patients. Mechanical bowel preparation (MBP) was done in 25/70 (35.7%) cases, which include 16 cases of rectal or left colonic surgery. Minimal invasive approach was feasible in 23/70 (33%) cases including 14/19 cases of colonic resection. Nasogastric tube was preferably removed on POD1; however, 3 (4.3%) patients required reinsertion due to intolerance. Two patients were unable to tolerate early oral feed and postoperative feeding was delayed in 30/70 (42%) cases due to surgeon preference. We used PCA in 20% cases with good results instead of epidural analgesia. Complication and readmission rates with ERAS were 20% and 11.4% respectively, which are comparable to traditional group. A total of 14 complications were reported including one anastomotic leak, 2 intraabdominal collection and two cases of pulmonary edema due to fluid overload. Hospital stay was significantly less in ERAS group with median of 6.8 days versus 10.4 days in traditional approach when compared in similar cases. Patients in the ERAS group resume their normal duty earlier compared to the traditional care group with a mean of 15.9 days and 23.3 days respectively. Conclusion: ERAS is feasible in our setup with some modifications. Some surgeons do not accept few elements safe in clinical practice initially, but progressively they are adopting this regimen. Patient acceptance was good and postoperative recovery was faster with ERAS regimen. There was no significant difference in complication rate compared to traditional approach.

Role of Laparoscopy in Ascites under evaluation– A Retrospective Analysis. Shreeyash Shirish Modak, Upender Rao B, Pradeep R, GV Rao, Asian Institute of Gastroenterology, Hyderabad

Introduction: Ascites is a common presentation of many gastrointestinal as well as systemic diseases. Diagnosis of etiology is crucial in starting appropriate treatment. None of the noninvasive and invasive tests available are 100% reliable in establishing diagnosis. Laparoscopy with targeted biopsy has been used in ascites as a diagnostic tool for long time, but its exact role in terms of diagnostic value and safety has not been defined. Aim: To study the role of laparoscopy in ascites under evaluation and to identify common etiologies behind ascites of unknown origin as well as to assess diagnostic efficacy of routinely done preoperative investigations. Methods: Sample size is of 60 patients with ascites under evaluation, who underwent diagnostic laparoscopy during 2 years period. Data was collected using medical records which included clinical history, biochemical investigations, radiological reports and histopathological reports. End point was decided as final histopathology report. Analysis was done using SPSS 20. Results: 57 out of 60 patients had identifiable lesions on laparoscopy and targeted biopsy could be taken in them. Diagnostic accuracy of laparoscopy was 87.7%. The sensitivity and specificity of laparoscopic visual diagnosis...
was 100% and 30% respectively. The specificity increased to 81.7% and 93.9% when tuberculosis and malignancy were analyzed separately. There was statistically significant difference between preoperative diagnosis and final histopathology result (p = 0.001). Safety of laparoscopy was 100% and only 2 patients required mini laparotomy. Most common pathologies found were peritoneal tuberculosis (n=23) and malignancy (n=27). 10 patients were undiagnosed on histopathology. All except 1 patients had low SAAG ascites. When preoperative investigations were evaluated there was significant association between tumor markers and malignancy, ascitic fluid ADA and peritoneal tuberculosis (p<0.05, for each). Imaging studies were found to be less specific. Conclusion: Diagnostic laparoscopy has a high diagnostic accuracy and should be used in all cases of ascites having undetermined etiology to avoid misdiagnosis and administer correct treatment.

M29
Gastrointestinal Stromal Tumours (GIST): Experience at an Indian tertiary care centre. Sri Aurobindo Prasad Das, Anand Narayan Singh, Sujoy Pal, Nihar Ranjan Dash, Peush Sahni, All India Institute of Medical Sciences New Delhi

Introduction: GIST are the most common mesenchymal neoplasms of the gastrointestinal tract. There is little literature on the management of patients with GIST from South Asian countries. We analysed the clinicopathological characteristics and outcomes of patients with GIST treated at a tertiary care centre over the past 15 years. Methods: All patients with histologically proven GIST operated from January 2000 to December 2015 at the Department of Gastrointestinal Surgery and Liver transplantation, AIIMS, New Delhi were studied. Data were extracted from a prospectively maintained database and included demographic, clinical, surgical therapy, histopathological details, adjuvant therapy, and follow up. Results: We had managed 106 patients with GIST. Of these, 70 (66%) were men. The median age of patients was 49.5 (16-82) years. The most common presenting symptoms were upper gastrointestinal bleed (39.6%), followed by pain (30.2%) and lump (11.3%) in the abdomen. The most common sites of GIST were stomach (34%), jejunum (20.8%) and ileum (16%). The majority of patients (95.2%) had localized disease with no evidence of dissemination. The commonest surgical procedures done included resection and anastomosis (41.5%) for small bowel GIST and gastric wedge excision (21.7%) for patients with gastric GIST. Multi-visceral resections were required in 25 (23.6%) patients. 5 (4.7%) patients died in-hospital and morbidity was 23 (21.8%). Spindle cell morphology was seen in 96 (90.6%) patients on histopathology and 71.7% (76) had low mitosis (<5/hpf). Overall risk assessment based on histology revealed 39 (36.8%) patients had low risk and 36 (34%) patient had high risk. Of the 38 patients who were followed for a median of 21 (6-120) months, there were 6 (15.8%) recurrence. There was 5 (13.1%) long-term death out of which 3 were related to recurrent disease. Conclusion: We found GIST to be more common among men and involving the small bowel and stomach almost equally, contrary to the western experience of stomach being the commonest site. The median age of presentation was a decade earlier than in reported series. Multivisceral resections were frequently needed.

M30
Clinico pathological characteristics and survival in Gastrointestinal Stromal tumors (GIST). Rinki Das, Ganga Ram Verma, Rajinder Singh, Lileswar Kaman, Arunanshu Behera, Divya Dahia, Kim Vaiphei, Rakesh Kapoor, PGIMER, Chandigarh

Sixty cases of GIST patients admitted from 2007- 2016, were retrospectively studied from prospectively maintained database. Thirty five patients were male and 25 patients were female and the mean age was 47.23 years (21-75 years). The common presentations were pain abdomen (51.7%), GI bleeding (51.7%) followed by abdominal lump (21.7%). Seven patients (11.7%) presented with distant metastasis. Stomach was the commonest location (48.3%), followed by small bowel 40.0% (jejenum 20.8%, ileum 11.7%, & duodenum-8.3%), and colon (8.3%). Average tumor size was 9.9 cm (range 1.0-27 cm). Rare extra-gastrointestinal location was observed in 2 patients. Wide local resections (no.=42) or multi visceral resections (no.=10) were contemplated depending on the extent of tumor. 86.7% of the tumors (no.=45) were CD 117. Miettinen & Lasota's pathological classification (2006) was used for better prognostication. Majority of our patients had high risk lesions (43.1%) followed by intermediate (24.14%) & low risk lesions (20.69%). Adjuvant treatment with imatinib was given in residual or recurrent disease and metastatic disease (no.=45). Three patients received imatinib in neoadjuvant setting for locally advanced non-resectable disease. Sunitinib was given to patients with disease progression on imatinib. Results: Survival was analyzed using Kaplan-Meier survival curve and Pearson Chi-square test. The median follow up was 34 months (range 1-105 months) (no.=48). Mean duration of imatinib therapy in our patients for all indications was 18.34±1.34 months. Three-year overall survival was 100%, 75%, 87.5% and 50% respectively for low, intermediate, high risk and metastatic disease (p=0.251) (no.=32). There was no sig. difference in overall survival of patients with C-kitpositive (no.= 24) or C-kitnegative (no.= 4) tumors; 79% and 50% respectively (p=0.253). Five-year overall survival was 100%, 66.7%, 83.3% and 0.0% respectively (p=0.175) for low risk, intermediate risk, high risk and metastatic disease (no.=17). Response to imatinib therapy was observed in
62.96% (no.=27) patients in the first 3 years of treatment. Over the next 2 yrs, 23% patients developed imatinib resistance (no.=13). Five patients resistant to imatinib had responded to sunitinib therapy. Conclusion: Our study demonstrates the need for detailed pathological examination of GISTs as recommended by Miettinnen and Lasota, for prognostication of the patient and to decide on adjuvant therapy. Close follow up for all GIST patients with intermediate and high risk group tumors is required and adjuvant therapy is recommended for these categories. For high risk group patient current recommendation of therapy with imatinib is at least for three years. Patients with metastatic disease may receive imatinib for indefinite period till there is observable response to therapy. Imatinib resistant tumors may respond to sunitinib, thus rendering hope for patients with very advanced and poor risk disease. Further, genetic study of such tumors may help us to predict imatinib resistance and to choose the appropriate adjuvant therapy at the outset giving improved survival chances to the patients.

M31
Use of adrenal vein as a conduit to perform splenorenal shunt: An alternative technique. Hari Govind, MN Saravanan, Vaibhav Varshney, Amit Javed, HH Nag, Anil K Agarwal, GB Pant Hospital & MAM College, New Delhi

Introduction: Proximal splenorenal shunt (PSRS) is an established treatment option in the management of Non-cirrhotic portal hypertension (NCPH)– Extrahepatic portal vein obstruction (EHPVO) and Non-cirrhotic portal fibrosis (NCPF). An end to end spleenoadrenorenal shunt (PSARS) has been selectively used at our centre instead of PSRS with the potential advantage of better reach and the avoidance of looping and/ or clamping the main left renal vein. We compared the outcomes of PSARS with those of conventional PSRS. Method: Retrospective analysis of consecutive cases of NCPH (EHPVO and NCPF) who underwent elective surgery between January 2008 and December 2015 was performed. PSRS and PSARS were included except in those cases where data on intraoperative pre-shunt and post-shunt portal pressures were not available. Demography, preoperative indications, hematologic and biochemical parameters, endoscopic and ultrasound doppler findings, intraoperative with postoperative details and follow-up were recorded and a comparative analysis was performed. Results: Out of 200 patients, 86 patients formed the study group (PSRS– 59; PSARS– 27). Aetiology, clinical profile, hematological parameters and pre-operative endoscopic findings were comparable between the two groups. Median intraoperative decrement in portal pressure between PSRS (10mmHg) and PSARS (8 mm Hg) was not statistically significant (p = 0.363). Intraoperative blood loss (p = 0.485), duration of surgery (p=0.137) and postoperative morbidity (p = 0.441) was comparable between the two techniques. All the patients experienced a recovery of cell line depletion by post-operative day 7. At a median follow-up of 48 (6-84) months, among the 80 patients in whom follow-up was available, rate of rebleed (7% vs 0%; p = 0.311), decrease in variceal grade (96.2% vs 95.7%; p = 1.00) and improvement of portal biliopathy (77% vs 86%; p = 0.663) were comparable between PSRS and PSARS.

M32
Splanchnic artery aneurysm and pseudoaneurysm: Presentation, management and outcomes over 8 years. Vaibhav Varshney, Sunil Kumar Puri, Sanjay Tyagi, Vijay Trehan, HH Nag, SS Saluja, PK Mishra, Anil K Agarwal, GB Pant Hospital & MAM College, New Delhi

Aim: Splanchnic artery pseudoaneurysm and aneurysm are encountered secondary to inflammation, trauma, intervention and sometimes denovo. They often present as impending or life-threatening emergencies. Diverse treatment modalities ranging from endovascular to percutaneous to surgical interventions have been described. Methods: Retrospective analysis from a prospectively maintained database of all patients with splanchnic pseudoaneurysm and aneurysm managed in our department from January 2009 to April 2016. Results: Thirty seven patients formed the study group. They were associated with acute or chronic pancreatitis (16; 43.2%), portal hypertension (7; 18.9%), post trauma or post procedure (10; 27.1%), de novo (2; 5.4%) and others (2; 5.4%). While diagnosis was established preoperatively by CT angiography in majority of cases (30; 81.1%), it was detected incidentally during surgery in 4 (10.8%) patients. While 12 (32.4%) patients were asymptomatic, the rest of 25 (67.6%) presented with bleed. Splenic artery (14; 37.8%) was the most common site involved followed by hepatic artery (Common/ Right/ Left) (10; 27%). Of the 35 patients who received intervention (no intervention in 2 patients; self-thrombosed in 1 patient and wait and watch in another), angiographic embolization (20) or stent (4) and percutaneous thrombin injection (4) was carried out in 28 patients with success in 23 (82.1%). Twelve patients (upfront in 7 and following failure of angiographic/ percutaneous means in 5) underwent surgery (excision with or without reconstruction in 6 and ligation in 6). Post angiographic/ percutaneous procedural morbidity included post embolization syndrome in 4 patients and thromboembolic complications in 3 patients necessitating angiographic intervention in 2. Median hospital stay was 15 (4-60) days. While there was no post-procedure mortality, 30 day mortality was seen in 2 (5.4%) patients, secondary to the underlying disease in the postoperative period. Conclusion: Splenic and hepatic artery account for about 65% of splanchnic artery pseudoaneurysm/ aneurysm encountered mainly in the background of pancreatitis and post trauma or intervention. With a success rate of
82% with non-surgical interventional measures, the role of surgery is limited to when encountered incidentally or when angiographic or percutaneous measures fail or are not feasible.

M33
To study Clinical and Microbiological profile of Complicated Intra abdominal infections. Shankar Kalyan Rao Deshmukh, Nizams Institute Of Medical Sciences, Hyderabad

Introduction: Complicated intra-abdominal infections (IAI) are common problem in clinical practice and consume substantial hospital resource. Despite advances in diagnosis, surgery and anti microbes, mortality with these infections remains high. In complicated IAI the process extends with localized or generalized peritonitis. These cases require prolonged antibiotic therapy following surgery. Choosing appropriate antibiotic therapy is clinical challenge. The threat of antibiotic resistance has been identified as major challenge in management of complicated IAI. The laboratory based antibiograms are efficacious as a rational selection of antibiotics and to alert clinician the presence of unusual or emerging antimicrobial resistance. Surveillance programs have provided important information about changes in spectrum of microbial pathogens and continued monitoring of antimicrobial resistance patterns in hospitals is essential to guide effective therapy. In Indian context data regarding antimicrobial resistance status is scarce for this very common problem. Aims: To study clinical and microbiological profile (Antibiotic resistance profile) of intra-abdominal infections. Methods: Patients from March 2014 suffering from complicated intra-abdominal infections admitted to the Surgical Gastroenterology Dept. Nizams Institute of Medical Sciences. Data was collected prospectively maintained database in surgical gastroenterology and microbiology Dept. which included patient and disease characteristics. Primary end point of study was clinical profile of patient and epidemiology of microorganisms. Disease included: 1) Peritonitis due hollow viscous perforation ruptured liver abscess, cholangitis and necrotizing pancreatitis. Disease excluded: 1) Patient with primary peritonitis. Results: Total 100 patients were included in study. Most common infections were of small bowel origin (35%) followed by pancreas (20%). Gram negative organisms were most commonly isolated organisms. Most common being Escherichia coli in 67 (63%) patients, and 62.3% of Escherichia coli were community acquired where as 37.3% were seen in hospital acquired infections. 80% of Pseudomonas aeruginosa, Acinetobacter baumannii were isolated from hospital acquired infections. Hospital acquired infections were more common in pancreatic and biliary systems. Mean duration of hospital stay in community group was 12 days and in hospital acquired group was 19 days (P=002). Similarly hospital acquired group required prolonged ICU stay and antibiotics (P-001). Patients with resistant organisms had longer hospital stay (17 days) compared to (13 days) nonresistant group (P-0.05). Resistant infections required antibiotics of mean 13 days compared to 9 days in non-resistant group (P-0.064). There was a significant difference in duration of ventilation between survivors (2 days) and non survivors (5 days) (P-0.003) 95% of Non survivors required change in antibiotic therapy compared to 55% in survivors. Conclusion: Our results showed the difference in clinical and microbiological profile of community and hospital acquired infections. Increased morbidity in hospital acquired infections but mortality between two groups was comparable, may be because improved source control and critical care. Colistin and Tigecyclin were highly efficacious in treating these patients. Higher rate of ESBL and MDR organisms in our study was cause for concern and need for strict adherence to recommended antimicrobial protocol in such patients.

M34
Informed consent in 500 consecutive Indian surgical patients. Samrat Ray, Siddharth Mehrotra, Vivek Mangla, Shailendra Lalwani, Amitab Yaday, Naimish N Mehta, Samiran Nundy, Sir Ganga Ram Hospital, New Delhi

Introduction: Informed consent constitutes a systematic process of getting permission before conducting a healthcare intervention on a person. Unfortunately, in a developing country like India, where the majority of the population is poor and illiterate, the process of obtaining an informed consent has merely been perceived as a ritual wherein the patients are presented with information that may be beyond their comprehension. Therefore, an assessment of the degree to which the patients and their family members understand the informed consent and its implications becomes important in the Indian surgical setting. Methods: We carried out a study on 500 consecutive patients presenting to our department from August 2015 to July 2016. The details and risks of the operation were explained to the patients and relatives before operation and a structured objective questionnaire, was used to evaluate their recall on the fifth postoperative day. Results: The majority could recall the nature of their disease (94.8%), the surgery performed (82.2%) and the anticipated complications (55%). The figures were better in their relatives (97.7%, 87.2% and 70% respectively). There was no difference in the recall ability among males and females in both the groups. However, the younger individuals, the better educated and the service holders were found to fare better in both the groups. There was no difference in the recall ability among the patients and the relatives (p>0.05). Subgroup analysis of the patients
undergoing liver transplantation and their relatives (n=94) versus the rest of the patients and relatives revealed a better recall ability in the former (p<0.001). Majority of the subjects in the patient group (65% and 61%) and the relative group (63.5% and 57.8%) found the process of informed consent useful and satisfactory. **Conclusion:** Informed consent is understood well by majority of the Indian population. If explained in detail, systematically and in simple language, it is comprehended well by most of the patients and their relatives. Particular attention needs to be paid to older individuals and the lesser educated population. Despite the non-uniformity of the informed consent process among different clinicians, the overall satisfaction level of the patients and their relatives by this entire process is reasonably good.

**M35**

**Why do people leave against medical advice (LAMA) in India and what happens to them subsequently? A study of 50 consecutive patients.** Ishan Shah, Samrat Ray, Siddharth Mehrotra, Vivek Mangla, Shailendra Lalwani, Amitabh Yadav, Naimish N Mehta, Samiran Nundy, Sir Ganga Ram Hospital, New Delhi

**Introduction:** Leaving against medical advice is a common problem worldwide but data is mainly available from countries which have health care which is publicly funded or by insurance. There is limited data from India, a country where nearly 80% pay out of pocket for health expenses, regarding the factors responsible for patients ‘going LAMA’ in India and their subsequent outcomes. **Methods:** Between January and December 2015 we studied the demographics and reasons for LAMA in 50 consecutive patients who had left our unit or come from some other hospital to us and followed what happened using a structured questionnaire. **Results:** We found that the incidence of LAMA was more in males than females (n=33; 66%) and in patients with a diagnosis of acute necrotizing pancreatitis (n=11; 22%). The main causes identified were financial constraints in 52% (n=26), hope of better services available elsewhere in 22% (n=11) and loss of hope in further treatment in 18% (n=9) of cases. Only 18% (n=9) of such patients were covered by medical insurance. 90% (n=45) of patients eventually took admissions in some other hospital after taking LAMA while 6% (n=3) died. **Conclusion:** Although male sex and lack of insurance are the factors responsible for LAMA even in the developed countries, substance abuse, alcohol intake, young age and psychiatric disorders are the predominant factors. However, in a country like India financial constraints and lack of services and setup in private sector are some of the important factors. There needs to be serious scrutiny of the factors responsible for such discharges and there should be Indian solutions to Indian problems for improving the scenario of the prevailing fallacies in present health care system.

**M36**

**Outcome of a series of patients with peritoneal surface malignancies treated with cytoreductive surgery and hyperthermic intraperitoneal chemotherapy in a tertiary cancer centre in India.** Gaurav Das, Ramakrishnan Ayloor Seshadri, Hemant Raj E, Cancer Institute (WIA), Chennai

**Introduction:** Cytoreductive surgery (CRS) and hyperthermic intraperitoneal chemotherapy (HIPEC) is used for the treatment of peritoneal surface malignancies. **Aims:** To study the outcome of a series of patients with peritoneal surface malignancies treated at a tertiary cancer centre in India. **Methods:** Retrospective study of a consecutive series of patients with peritoneal surface malignancies treated with CRS and HIPEC in our institution from 2012 to 2016. CRS consisted of standard peritonectomy procedures and organ resections while drugs used for HIPEC included mitomycin-C or oxaliplatin or cisplatin. **Results:** A total of 29 patients were treated with CRS and HIPEC during this time period. This included 13 patients of pseudomyxoma peritonei, 11 patients of colorectal carcinoma, 2 patients of mesothelioma and 3 patients of carcinoma of ovary. The median peritoneal carcinomatosis index (PCI) score was 18/39 (range 0 to 39). The median duration of surgery was 10 hours (range 4 to 17 hours). The median blood loss was 1200 ml (range 100 to 9400 ml). Completeness of cytoreduction (CC) score CC0 was achieved in 24 patients and CC1 in 5 cases. Mitomycin C was used for HIPEC in 20 patients, oxaliplatin in 5 patients and cisplatin in 4 patients at doses of 30 to 35 mg/m², 260 to 460 mg/m² and 50 to 75 mg/m² respectively. Two patients (6.89%) developed intra-operative complication in the form of hypotension. Post-operative mechanical ventilation was needed in 18 patients (62.07%). The median duration of ICU stay was 4 days (range 0 to 20 days) and that of hospital stay was 15 days (range 2 to 54 days). Pulmonary complications occurred in 11 patients (37.93%) and neutropenia in 3 patients (10.34%). The post-operative 30-day mortality was 10.34%. No patient required re-operation or re-admission. Recurrence was noted in 6 patients (20.69%), the peritoneum being the site of failure in two patients. After a median follow up of 12 months (range 2 to 48 months), 22 patients (75.86%) are alive and three of them have recurrent disease. This includes five patients who have lived beyond 2 years without recurrence. **Conclusion:** The treatment of peritoneal surface malignancies with aggressive CRS and HIPEC approach can achieve prolonged survival.

**M37**

**Tracheo-esophageal Fistula in Advanced Squamous Cell carcinoma Oesophagus- A Single Centre Experience of 31 cases.** JMV Amarjothi, Amudhan Anbalagan, Prabakaran R, Bennet Duraisamy, Kannan D, MMC, Chennai

**Introduction:** Among patients with advanced carcinoma
Oesophagus, the development of airway–oesophageal fistula alters the natural history dramatically with a rapid downhill course leading onto mortality in untreated cases. In this paper we analyse our experience in management of this rare disease and the outcomes following treatment. **Methods:** All patients diagnosed with tracheo-oesophageal fistula (TEF) secondary to Carcinoma oesophagus from August 2010 to February 2013 were included in the study. At presentation demographic data was recorded, accurate history taking and physical examination was done and documented. The performance status was assessed according to ECOG. A chest radiograph was taken to document the respiratory complications. The status of disease was assessed by endoscopy, fiber-optic bronchoscopy and contrast enhanced CT scan of the neck and chest. Each patient was individually assessed and treatment was tailored according to their performance status and nature of disease. SEMS placement was performed by endoscopy over a guide wire under fluoroscopic guidance. **Results:** Thirty-one patients with a diagnosis of TEF due to advanced squamous cell carcinoma oesophagus were included in the study. In Eighteen patients (58%) had received no treatment previously. Thirteen patients (42%) were under various treatment for squamous cell carcinoma oesophagus and TEF developed following Chemo-Radiotherapy in 5 patients (16.1%), following radiotherapy in 5 patients (16.1%) and following chemotherapy in 3 patients (9.7%). The performance status was good in 12 patients (38.7%) and poor in 19 (61.3%). On endoscopic evaluation the fistula was located in middle third of oesophagus in 26 patients (83.9%) and in 5 patients (16.1%) endoscopy could not clearly delineate the location. The growth was not negotiable in 9 patients (29%). Respiratory complications were present in 26 patients (84%). Lung metastases were found in 4 patients (12.9%). Assessment of the tracheal end of fistula with fiber-optic bronchoscopy was possible in 28 patients (90.3%). The location of fistula at the tracheal end was above the carina in 18 patients (64.3%) and below the carina in 6 patients (21.4%). In 4 patients (14.2%) the fistula site could not be properly delineated. Treatment with SEMS was feasible in 14 (45.1%) patients. Eleven patients (35.4%) were too sick for any treatment and hence were advised best supportive care (8 patients in this group had FJ done elsewhere). Six patients (19.5%) with minimal lung sepsis and small fistula received chemoradiation. The technical success rate of oesophageal stenting was 86%. In the stented patients 94% had clinical relief of dysphagia. Following stenting, bleeding (n=1, 0.7%), pain (n=2, 1.4%), aspiration (n=4, 28.6%) and stent migration (n=2, 14.3%) were the complications observed. **Discussion:** In patients with advanced squamous cell carcinoma oesophagus with TEF it is difficult to offer any surgical therapy. In advanced disease SEMS has helped our patients to take food via naturalis. In some patients who are terminally ill best supportive care is the only treatment that can be offered. **Conclusion:** Post ERCP perforations have significant morbidity and
mortality even after surgical intervention. Delayed surgery had significant impact on PDL. Post-operative duodenal leak was associated with high mortality. Addition of T tube duodenostomy to the repair was not helpful in these patients.

M39
Visceral Artery Aneurysms—Incidence, Management and Outcome at a Tertiary Care Surgical Gastroenterology Centre. Abishek Rajan, Ajit Kumar Mishra, Rajanikant R Yadav, Anu Behari, Rajneesh Kumar Singh, Rajan Saxena, SGPGIMS, Lucknow

Introduction: Visceral artery aneurysms (VAA) are an uncommon entity that most commonly affects the splenic, hepatic, and superior mesenteric arteries. Etiologies are mainly degenerative, mycotic and iatrogenic. Ruptured aneurysms are usually life threatening. This study is an analysis of our experience with this rare entity over the past decade. Aim: To evaluate the incidence, location, etiology, clinical presentation and outcome of surgical and radiological interventional procedures. Methods: A retrospective analysis of 73 patients with VAA, managed at the Department of Surgical Gastroenterology, SGPGIMS, Lucknow between January 2005 and May 2016. Results: There were 51 male and 22 female patients with a mean age of 39 years (range 7-68 years). The location of VAA was right hepatic (RHA) (n=26, 35.6%), splenic (n=13, 17.8%), gastroduodenal (n=10, 13.6%), left hepatic (n=5), left gastric (n=4), SMA (n=4), ileo-colic (n=3), middle colic (n=2), jejunal (n=3), cystic artery (n=1), left gastroepiploic (n=1) and uterine (n=1). 3 patients had associated abdominal aortic aneurysm and one had multiple visceral and intracranial aneurysms. VAA developed secondary to iatrogenic causes (n= 28, 38.3%), blunt trauma abdomen (n=16, 21.9%), pancreatitis (n=14, 19.2%), degenerative (n=9, 12.3%), and portal hypertension (n=5, 6.6%). Most common iatrogenic cause was bile duct injury (n=11, 39.2%). Initial presentation was gastrointestinal bleed (n= 44, 60%) and abdominal pain (n= 38, 52.05%). Pseudo-aneurysms were found in 59 (80.8%) and true aneurysms in 14 (19.2%). Pseudo-aneurysms were secondary to surgery (n=21), trauma (n=16), endoscopic intervention (n=5), percutaneous procedures (n=4) and disease related (n=13). Diagnosis was established at CT angiography (n=58),DSA (n=4) and surgery (n=11). The index intervention was radiological in 49 (67.1%) and surgical in 21 (28.7%). No intervention could be offered to three patients (4.1%). Surgical procedures included suture ligation (n=8, 38%), bowel resection with aneurysctomy (n=6, 28.5%), aneurysctomy (n=3, 14.3%), bipolar ligation (n=2, 9.5%), aneurysmorrhaphy (n=1) and distal pancreatosplenectomy (n=1). Rebleed occurred in 10 patients (13.9%)- four after initial angiographic procedures (8.1%) and six following suture ligation of pseudo aneurysms at the initial surgery (28.57%). Rebleed after initial angiographic procedures (n=4) were managed with repeat embolization and surgery in 2 each. Rebleed after initial surgery was angioembolised in 4, (66.67%) and re explored in 2 (33.3%). 59 patients were discharged alive (80.8%). There were 14 (19.1%) mortalities– 6 following angioembolisation and 7 following surgery. One patient expired soon after arrival, before any intervention. The mean hospital stay was 18 days (1-96 days). Conclusion: Majority of the VAA managed were pseudo aneurysms. RHA aneurysm was the commonest site in our experience. 60% of our patients presented with gastrointestinal bleed. Trauma (iatrogenic or blunt abdominal), acute pancreatitis and post cholecystectomy bile duct injuries were the leading causes of VAA. Management of VAA requires a multi-disciplinary team including surgeon, interventional radiologist and intensivist. Majority can be managed with angioembolisation, but a third of the patients need surgical intervention.

M40
Rare Case of Intramural Gastric Air. C Praneeth Reddy, Narayana Medical College, Nellore

Introduction: Gas in the wall of the stomach is a rare radiological finding, which can be caused by gastric pneumatosis or emphysematous gastritis. It was first described by Chamberlain in 1947¹. Cases in the literature have described radiological, endoscopic, histological and trans-abdominal ultrasound findings in adult and paediatric populations. This is caused by a disruption in gastric mucosa leading to the dissection of air into the wall. These patients are usually asymptomatic or complain of mild dysphagia and/or epigastric discomfort. Plain radiographs characteristically demonstrate a linear lucency conforming to the contour of a thin-walled, often distended, stomach, and enveloping any intraluminal gas and fluid content ²³. The clinical course is usually benign, with spontaneous resolution after the cause is removed. In comparison, emphysematous gastritis occurs when there is diffuse infiltration of the stomach wall by pathogenic gas-forming bacteria. Thus the gas is formed within the stomach wall. In these cases, an earlier gastric mucosal injury allows gas-forming organisms to gain access to deeper tissue layers. These patients present with severe, acute epigastric pain, fever, shock, toxaemia, nausea, often haematemesis and a leucocytosis. Radiologically, the stomach is often contracted with numerous frothy or mottled radio lucencies (gas bubbles) in the gastric wall³⁴. The Case: 30yr female patient who presented to us with history of RTA- fall from moving vehicle and sustained blunt trauma abdomen, on examination only few abrasions over right subcostal region and no other external injuries. CECT abdomen showed small contusion and laceration in the right lobe of liver (AAST Grade 2 Injury), with pneumomobilia,
right adrenal hematoma, air pockets in posterior wall of stomach with mild haemoperitoneum. She underwent Laparotomy which revealed non bleeding capsular tear in segment 6 of liver with mild hemoperitoneum and a normal stomach. Conclusion: 1. In a post trauma scenario, Gastric Pneumatosis with PVG is not an absolute indication for surgery. 2. Computed Tomography is the gold standard to diagnose Portal venous gas and its etiology. 3. CT findings- Tubular areas of decreased attenuation in the liver. The most important information provided by CT scan is to rule out Bowel ischemia. 4. Correlation between clinical signs and radiological findings will be the most important factor in the decision whether or not to proceed to laparotomy. 5. Non operative management warrants close monitoring and repeated radiological and endoscopic examinations. References: 1. Chamberlain DT. Pneumoperitoneum following gastroscopy apparently without perforation: report of a case. New Engl J Medicine 1947; 237: 843-845. 2. Fidvi SA, Klein SA. Clinical Quiz. Appl Radiol 2002; 31(3): 33-36. 3. Soon M, Yen H, Soon A, Lin O. Endoscopic ultrasonographic appearance of gastric emphysema. World J Gastroenterol 2005; 11(11): 1719-1721.
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