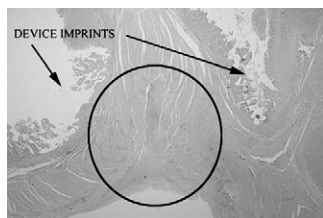


healing. Conclusions: As we move into the realm of incisionless surgery, a primary tool is the endoscopic suture or tissue anchor. The expandable shape of the USGI tissue anchors distribute the tissue holding forces thereby resisting pull-through and migration, evidenced by plication durability in this study. There did not seem to be significant differences between these two anchor shapes in inducing canine gastric tissue healing. Further study in other tissue types such as thinner colonic wall may demonstrate the utility of various endoscopic tissue anchor designs just as various suture materials and sizes are necessary in open and laparoscopic surgery.



Tissue anchor imprints and gastric muscularis remodeling.

S1500

Treatment of Anastomotic Leakage and Benign Esophageal Perforation By Esophageal Or Colorectal Self-Expandable Metal Stents (SEMS)

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Background: The intrathoracic anastomotic leakage and the benign esophageal perforation carry a high morbidity and mortality. Methods: Nine patients (6 males, 3 females), mean age 58.5 years (range: 43–70) were treated for bronchoesophageal fistulas following esophagogastrostomy (3), anastomotic leaks after total gastrectomy (2), Boerhaave's syndrome (2), perforation after oesophageal dilation (1) and after a foreign body ingestion (1) by esophageal or colorectal SEMS (eSEMS or cSEMS) placement. The mean defect diameter was 2 cm. Results: A total of 10 eSEMS (9 Hanarostent with anti-reflux valve 22 × 90 mm (1), 22 × 120 (7), 22 × 160 (1) and 1 Choostent without valve 18 × 80) and 8 cSEMS (Hanarostent 24 × 90) were inserted. Oral feeding was achieved in all patients. The successful closure of the defect was obtained in 6 cases in a mean time of 40 days, by one stent insertion in 4 (eSEMS in 2 cases and cSEMS in 2 cases-1 with a double defect) and two stents insertion in 2 of them (1 eSEMS replacement and 1 longer eSEMS placed inside 1 cSEMS in the same session for a double fistula). Another patient was managed by a eSEMS placed inside 1 cSEMS in one session for the covering of a double fistula. Fifteen days after their replacement, he died from an unrelated cause to the stent insertion. In another one, 1 eSEMS was replaced due to a duodenal migration by 3 cSEMS inserted by a stent-in-stent procedure at 6-8 month intervals due to a small displacement. Two of them could not be removed due to impaction but the third one was replaced by an eSEMS for the treatment of a tracheoesophageal fistula at the upper end of the stent. An attempt for surgical repair led to his death 23 months after the first stent insertion. In the last patient, the defect was successfully covered by an eSEMS, but it was not removed due to a residual cancer until his death from a bleeding ulcer at the upper end of the stent 8 months after insertion. Mediastinal drainage was additionally performed in 4 of them. Conclusions: The SEMS placement is an efficient method of treatment for anastomotic leakage and benign esophageal perforation, including spontaneous rupture. The stent-induced complications are related to their late removal. The placement of eSEMS with valve may decrease the migration rate owing to their large diameter. Moreover, in the absence of larger or longer eSEMS, the cSEMS insertion raises the possibility of achieving a lower migration rate and a complete covering of large esophageal defects or anastomotic leaks.

S1501

Endoscopic Stenting Versus Surgical Gastrojejunostomy for Palliation of Malignant Gastroduodenal Obstruction

Rodrigo Castaño, Oscar a. Alvarez, Jorge Lopera, Eugenio Sanin, Faruk Erebric, Edilberto Nuñez, Luz E. García

Objective: Palliative treatment of malignant gastroduodenal obstruction has been performed traditionally with gastrojejunostomy. Palliation with autoexpandable metal prostheses has also shown to be effective and to improve the quality of life of patients. We compared the effectiveness of conventional gastrojejunostomy with the application of an autoexpandable metal stent developed locally, for palliation of malignant gastroduodenal obstruction by evaluating clinical success, morbidity, mortality and length of hospital stay. Materials and Methods: Medical records from 80 patients with malignant gastroduodenal obstruction were reviewed: 40 patients had received treatment with the autoexpandable metal stent and 40 with gastrojejunostomy. Patients

who underwent prophylactic gastrojejunostomy were excluded. Results: Gastroduodenal stents were successfully placed in 39 of 40 (97%) patients (21 males) and gastrojejunostomy was performed in 40 patients (23 men) with obstructive tumors of the gastroduodenal tract. The gastroduodenal obstruction was secondary to gastric, gallbladder or biliary tract, pancreatic and ampullary tumors or metastatic disease. These malignancies were considered unresectable in all patients. There were no statistical differences in the origin of the obstruction, hospital mortality or survival between the treatment groups. However, time to resume oral feeding (1.6 vs 7 days) and length of hospital stay (3 vs 14 days) were significantly shorter in the group receiving the stents ($p < 0.01$). Furthermore, morbidity was significantly lower in the stent group (15% vs 38%, $p < 0.01$). There was a trend in a higher activity index in the stent group ($p = 0.08$). Conclusions: The placement of autoexpandable metal stents was more beneficial in terms of length of hospital stay, time to resume oral feeding and morbidity than open gastrojejunostomy for the palliation of malignant gastroduodenal obstruction.

S1502

Self-Expanding Metal Stents in Malignant and Benign Colonic Obstructions

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Objectives: The use of metal autoexpandable stents in acute colorectal obstruction is appropriate in three different scenarios: with palliative intention, a bridge to facilitate a future operation of definitive character and in benign colorectal stenoses. We describe a prospective follow-up of patients who received colorectal stents in these three situations. Patients and Methods: We present a prospective analysis of the outcome in 20 patients in whom 22 stents were placed (11 men, 55%), between June of 2003 and August 2007. The mean age was 71 years (range 46 to 91). All patients with malignant or benign pathology had symptoms of acute colorectal occlusion. Malignant obstruction was present in 16 patients and benign obstruction in 4 patients. The benign stenoses included ischemic ($n = 1$), radiation ($n = 1$) and anastomotic ($n = 2$). Results: 8 stents were used for palliation, 8 preoperative stents and 4 in benign stenoses. In more proximal stenoses through the scope stents were used and in rectosigmoid stenoses (more distal) peranal stent were used, produced locally with support of Korean technology. There was clinical success in 18 patients (90%). Complications included stent migration ($n = 4$), obstruction ($n = 2$) and perforation ($n = 2$). There was one failure to place a peranal stent in one patient due to descending colon location. All the patients with benign stenoses were treated successfully with the application of the stent avoiding a definitive colostomy. A patient died after a colonic perforation, she didn't accept the surgery. Conclusions: The use of stents as a palliative procedure or as a bridge to surgery is associated with low morbidity, allows bowel preparation, and thus avoids the need for a temporary or definitive colostomy. Long-term patency suggests that stents may lead to avoiding an operation in patients with metastatic disease and further defines their role in the palliation of malignant obstruction and its application in benign pathology is equally encouraging. Further prospective randomized studies are necessary to fully elucidate the use of stents in the management of colorectal cancer and benign colorectal obstructions.

S1503

Expandable Nitinol Stent for Treatment of Malignant and Benign Esophagorespiratory Fistulas

Rodrigo Castaño, Oscar a. Alvarez, Jorge Lopera, Eugenio Sanin, Edilberto Nuñez, Luz E. García

Objective: Esophagorespiratory fistulas are complications of malignant esophageal tumours and bronchogenic cancer, and they are difficult to manage. The efficacy of polyurethane-covered nitinol stents for management of malignant and benign esophagorespiratory fistulas were analyzed prospectively. Patients and Methods: Twenty one patients (16 males-76%) with esophagorespiratory fistulas were treated with nitinol stents. The lesions were located in the proximal ($n = 2$), middle ($n = 16$) and distal ($n = 3$) esophagus. All patients suffered from dysphagia for liquids and solids. Stents were produced in Medellín-Colombia with Korean technology endorsement. Results: There were no technical problems during endoscopic implantation of the stents. Completed sealing of the fistula was confirmed the following days by gastrografin swallow x-ray. Dysphagia improved significantly. All nitinol stents showed a sufficient expansion within 24-48 h after placement. Severe early or late complications were not encountered, with the exception of tumour overgrowth in three patients and two stent migrations. In eight patients short term (3-6 days) retrosternal pain was observed, and three patients complained of slight foreign body sensation. Ten months later all 18 patients with malignant fistula had died of advanced disease, with a median survival time of 96 days (range, 17–266 days). In three patients with benign fistula after myotomy for achalasia, laparoscopic fundoplication and gastric bypass for obesity, the stent placement allowed closure of the fistula within 4 months. Conclusions: Polyurethane-covered nitinol stents are highly effective for palliative treatment of

esophagorespiratory fistula and have a low complication rate. The use of the nitinol stent appears to be a good therapeutic method for palliative endoscopic treatment of these high risk patients.

S1504

Yield of Repeat ERCP for Persistently Elevated LFTs After a Previously Normal Cholangiogram in Liver Transplant Patients with Choledochcholedochostomy Anastomosis

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Background: Biliary tract complications are common after orthotopic liver transplantation (OLT), occurring in 13–35% of pts, with biliary leaks and anastomotic strictures most often identified. ERC allows for effective and less invasive management of these complications than repeat surgical evaluation. **Aim:** The aim of this study was to evaluate the yield of a repeat ERCP in OLT pts with persistently elevated or rising LFTs after a previously normal ERC. **Methods:** Eligible OLT pts were identified by review of our ERCP database from 1999-2007. The biliary anastomosis had been established by choledochcholedochostomy in all pts. The indications for initial ERCP were abnormal LFTs, biliary dilation and/or suspected biliary leak. Only those pts with a normal ERC who subsequently underwent a repeat ERC for abnormal LFTs were evaluated. Subgroup analysis reviewed those pts with a normal ERC without (group 1) and with (group 2) prior endoscopic stricture therapy. Outcome of therapy was evaluated by manual chart review. **Results:** Overall, 589 OLT pts underwent ERCP during the study period; 180 pts had a normal ERC. Only 63 pts (29 female, 34 male) underwent repeat ERC for persistently elevated or rising LFTs, of which 15 pts had previously undergone successful endoscopic stenting of an anastomotic stricture (i.e. to resolution; group 2). The characteristics of both groups are as noted in the Table below. Overall, 36/63 (57.1%) pts had a normal repeat ERC while 27/63 (42.9%) pts had evidence of biliary pathology prompting endoscopic therapy (strictures in 27, leak in 1, choledocholithiasis/sludge in 4); 4 pts had more than one abnormality identified. LFTs significantly improved in 15 of these 27 pts after endoscopic therapy. One pt was lost to follow up. In 10/11 pts who did not respond, an alternative etiology was found (HCV recurrence in 3, rejection in 7). The overall complication rate was 4.8% (mild pancreatitis 1.6%, mild bleeding 3.2%). **Conclusion:** A repeat ERC for persistently elevated or rising LFTs can identify a significant percentage of post-OLT pts with biliary pathology despite a prior normal study. However, the etiology for elevated LFTs in these pts is often multifactorial. Rejection or recurrence of underlying disease may still need to be considered.

	M/F	Mean age (y,range)	Median time interval between the 2 ERCPs (days, range)	Pts with biliary pathology on repeat ERCP (n, %)
Group 1 (48 pts)	26/22	50.4 (18-65)	114 (4-1651)	23 (47.9)
Group 2 (15 pts)	8/7	51.6 (39-73)	190 (4-564)	4 (26.7)

S1505

Dye-Free Cannulation of the Biliary Tree: Outcomes in a Single Operator Experience of 800 Cases

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Background: Selective deep biliary cannulation (DBC) is a prerequisite to most therapeutic ERCP interventions. Numerous cannulation techniques have been described to facilitate DBC with emphasis on improving success rates and reducing complications, especially pancreatitis. Dye-free guidewire cannulation using guidewires with hydrophilic tips has been proposed as a method to increase cannulation rates while reducing complication rates. We report the outcomes of dye-free guidewire cannulations in 800 consecutive patients using this technique. **Objective:** To evaluate the success rate for DBC and rates of post ERCP complications (pancreatitis, cholangitis and bleeding) using dye-free guidewire technique. **Methods:** Consecutive ERCP procedures with intent to achieve DBC exclusively using dye-free guidewire technique were included. Cases were performed by a single endoscopist (DGA). Patients with altered biliary anatomy, primary objective of pancreatic duct (PD) cannulation or aborted exams due to inadequate sedation were excluded. Access using two-wire technique was counted as success and use of other techniques counted as failure, even if these allowed access. Complication data on post ERCP pancreatitis, bleeding, perforation, and cholangitis were extracted and tabulated. Unintentional PD contrast injection was also counted as a failure. **Results:** There were 835 ERCPs cases with intent to achieve DBC exclusively using dye-free guidewire technique, of which 35 cases were

excluded. The final group comprised of 800 cases (M:F ratio 1:1.06). Indications included but were not limited to choledocholithiasis, benign or malignant biliary strictures, bile leaks, and post-surgical injuries. Using guidewire technique the rate of successful DBC was 96.6%. The rates of pancreatitis, cholangitis and bleeding were 2.5%, 0.3% 0.6% respectively. There were 7 (0.86%) cases of unintentional PD contrast injection and 12 (1.5%) cases with pre-cut sphincterotomy, mostly in patients with ampullary stone impaction. There were no perforations. **Conclusion:** In this large retrospective case series, a high success rate of DBC was achieved using the dye-free guidewire technique exclusively. This technique resulted in very low rates of complications (post ERCP pancreatitis, bleeding and cholangitis), no severe complications, and a high overall safety profile compared to other cannulation techniques.

S1506

Is Percutaneous Drainage of Intra-Abdominal Bile Necessary for Post-Cholecystectomy Bile Leaks in the Era of Successful ERCP Management?

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Background: ERCP intervention for the treatment of post-operative bile leaks following cholecystectomy has become the standard of care. Bile leaks are frequently unsuspected at the time of surgery resulting in a delayed presentation. These leaks are generally from cystic duct or gallbladder bed and uniformly respond to ERCP stent placement or nasobiliary drainage with or without sphincterotomy. However, the management of the intra-abdominal bile is less clear, with percutaneous drainage (PCD) frequently employed without clear guidelines. We at a major tertiary referral medical center. **Patients and Methods:** From a prospectively entered ERCP database, patients (pts) were identified as having bile leaks who had not had intra-abdominal drains placed at the close of their cholecystectomy. Transections and other major duct injuries were excluded. Data points collected included success and complications of ERCP management of the bile leak, incidence of pre and post-ERCP PCD, indication for PCD, bile culture and subsequent hospital course and outcome. **Results:** 53 pts with post-op bile leaks from the cystic duct stump n = 36, GB bed n = 17 were included: 7/53 (13%) underwent pre-ERCP PCD, and 2/53 (4%) underwent post-ERCP PCD, with the remaining 44/53 (83%) undergoing no further intervention beyond ERCP. ERCP resulted in successful leak closure in all without significant complication. Volume of intra-abdominal bile, WBC count, pain and fever were not different between drained and undrained groups. Three serious complications occurred in the drained patients including loculated abscess (n = 2) and a pleural fistula. Cultures at initial PCD were positive in 2/7 (29%) pre-ERCP PCD cases and neither of the two post-ERCP PCD pts. These two positive cultures represented the only bacteriologic evidence of infection (2/53) 4%. Length of stay was significantly different between PCD cases and those treated by ERCP alone (Median = 15 days (mean = 18, range = 6–31) vs. median = 4 days (mean = 7, range = 1–22), p = 0.001). **Conclusions:** In general, patients presenting with undrained intra-abdominal bile leaks post-cholecystectomy can be managed with ERCP alone. Decision regarding percutaneous drainage should follow response to ERCP, in light of the low incidence of infection, and costs and morbidity associated with percutaneous drainage for this indication.

S1507

Papillectomy for Ampullary Neoplasm: Results of a Single Referral Center from 1997 to 2007

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Background & Purpose: Tumors arising from the duodenal papilla account for about 5% of GI neoplasms, but are increasingly identified. We report a large single center experience of patients referred for endoscopic papillectomy. **Methods:** All patients referred for endoscopic papillary lesions between 9/97 and 9/07 were reviewed. Clinical presentation, family history, endoscopic details, complications, histology, follow up and need for surgery were analyzed. **Results:** Between 9/97 and 9/07, 193 patients underwent endoscopy for ampullary lesions (7 patients minor and major). 15 juxta-ampullary lesions and 10 normal variants of the ampulla were excluded. Mean f/u at VMMC was 24 months. Among 168 patients, there were 112 (67%) adenomas, 38 (23%) adenocarcinomas, 18 (10%) non-adenomatous lesions. There were 88 men, 80 women, with a mean age of 64 (28 to 94). Excluding 23 FAP patients, there was a personal history of colon polyps or cancer in 34%. Clinical presentation included: Cholestasis/cholangitis 72, abdominal pain 54, incidental 51, pancreatitis 9, bleeding 7. 58 patients were referred to surgery. 20 were sent directly after endoscopy and biopsy without ampullectomy due to high suspicion for cancer. 22 were sent due to unresectability endoscopically (intraductal extension 12, extensive lateral extension 7, other reasons 3). 16 were sent after papillectomy (invasive cancer 8, intraductal recurrence/residual 7, multiple local recurrences 1). Ampullectomies were performed in 119 patients, with 2 patients requiring minor and major ampullectomies, and 14 patients requiring more than one session (total