Conclusions The Apollo OverStitch system can be used in the management of esophageal leaks and has proven efficacy and safety. Although this technique does require expertise, it provides a successful minimally invasive method that can help in the management of these often critically ill patients. This is the first reported case series of successful utilisation of the Apollo OverStitch System in combination with a stent in the management of esophageal leaks.

PTH-035 EUS-GUIDED BILIARY AND ENDOLUMINAL DRAINAGE BY LAMS: INITIAL EXPERIENCE FROM A HPB/ TRANSPLANT CENTRE

Geri Keane*, David Reffitt, Philip Harrison, Deepak Joshi, John Devlin. *Kings College Hospital, London, UK*

10.1136/gutjnl-2019-BSGAbstracts.60

Introduction Endoscopic ultrasound-guided biliary or enteral drainage is an emerging alternative to managing biliary or enteral obstruction, when endoscopic retrograde cholangiopancreatography (ERCP) or duodenal stenting fail. Recently developed electrocautery-enhanced Lumen-Apposing Metal Stents (LAMS), allow endoscopic anastomosis (Hot AXIOS™ system, Boston Scientific) to facilitate EUS guided choledochojunos-tomy or gastrojejunostomy. EUS guided hepaticogastrostomy is also feasible; using a dedicated half covered biliary SEMS (Giobor® stent). The aim of this study was to assess the safety and effectiveness of these stents in gallbladder, biliary and endoluminal drainage where standard approaches have failed.

Methods Case series of EUS guided biliary or enteral drainage from a tertiary referral HPB/Liver Transplant centre between January 2017 and January 2019.

Results During the 2 year study period, 19 cases were undertaken on 14 patients; 7 Male, 7 Female. Median age 77 (range 34–91). 10 of the patients had malignant disease, 4 benign. Indications included 6 EUS guided biliary drainage with LAMS from D1, 4 EUS guided gallbladder drainage, 3 EUS wire guided rendezvous, 2 EUS guided drainage of an obstructed hepaticojunos-tomy, 2 EUS guided gastrojejunostomy, 1 gastrojejunostomy stent change, 1 hepaticogastrostomy. The procedure was clinically successful in 68% (13/19) of cases. Median length of stay post procedure was 4 days (range 1–32). Adverse events occurred in 32% (6/19), 5/6 were small bile leaks, which settled clinically without need for further intervention, one case of stent displacement requiring surgical removal.

Conclusion In our experience, EUS-guided LAMS placement for novel applications, performed by experienced endosonographers was safe and feasible in selected cases of benign and malignant disease.

PTH-036 INTRA-DUCTAL COVERED SELF-EXPANDING METAL STENTS ARE NOT JUST FOR THE MANAGEMENT OF POST-TRANSPLANT ANASTOMOTIC STRICTURES

¹Geri Keane*, ²Ben Warner, ¹David Reffitt, ¹John Devlin, ¹Phillip Harrison, ¹Deepak Joshi. *Kings College Hospital, London, UK; ²Dartford NHS Trust, Dartford, Kent*

10.1136/gutjnl-2019-BSGAbstracts.61

Introduction Traditional fully covered self-expanding metal stents (FCSEMS) can have poor durability in certain situations e.g. post transplant anastomotic strictures, leading to proximal

or distal stent migration. Novel intra-ductal FCSEMS have been developed with an antimigration waist, short stent length and removal wires that are deployed in the duodenum to allow easy removal. These stents have improved the management of post-transplant anastomotic strictures, substantially decreasing the number of ERCPs these patients require and are now becoming the preferred stent in this situation in a number of transplant centres globally. Non-transplant indications for this stent have rarely been described.

Methods Case series of novel indications for ID-FCSEMS from a tertiary referral HPB/Liver Transplant centre.

Results 10 ID-FCSEMS were inserted in 9 patients for a range of indications (bile leak following transplant (3) or hepatectomy (1), bile leak following spontaneous perforation of the bile duct during acute pancreatitis, stricturing due to bile duct trauma post laparoscopic cholecystectomy (2), Mirizzi syndrome or choledochal varices). Five stents were inserted into the CHD/CBD and 5/10 into the proximal IHD/hilum. Median age of the patients was 51 years, and the majority were female (55%). Five patients had had a previous ERCP and plastic stent, which had been unsuccessful. 90% (9/10) of the stents inserted were 8×40 mm, with a single 10×40 mm stent inserted in one case. A sphincterotomy was performed in 60% cases and 30% of strictures were balloon dilated prior to stent insertion. Clinical resolution of the leak or stricture was seen in 100% of cases. There were no associated episodes of stent migration or post ERCP pancreatitis. All stents were removed without any difficulty. No patients required a further ERCP or intervention following ERCP with ID-FCSEMS insertion.

Conclusion This novel ID-FCSEMS is associated with high rate of clinical success in a range of clinical indications, over and above the management of post-transplant anastomotic strictures. There were no associated adverse events. As a result, there are growing number of applications for this novel stent.

PTH-037 BURIED PEG BUMPER SYNDROME CAN NEARLY ALWAYS BE MANAGED ENDOSCOPICALLY: A 14 YEAR PERSONAL SERIES

¹Gireesh Kothegal Marimahadevappa*, ²Sr Mandy Parry, ²Tamsin Boyce, ²Miles Allison. *¹ABM UHB, Swansea, UK; ²AB UHB, Newport, UK*

10.1136/gutjnl-2019-BSGAbstracts.62

Introduction Most patients needing Percutaneous Endoscopic Gastrostomy (PEG) tube feeding have incurable neurological disease, often with behavioural difficulty. Patient traction on tubing and weight gain predispose to the internal PEG bumper eroding through the anterior gastric wall and becoming buried, leading to the condition generally known as Buried Bumper Syndrome (BBS). This could be challenging to deal with as it is associated with complex decision making process.

Methods We collected the data of the patients who had BBS between 2004 to 2018, from two sites in Aneurin Bevan University Health Board (AB UHB). All patients were managed by one endoscopist across the sites. This included patients who had their procedures done both under sedation and general anaesthesia. Data reviewed included the endoscopic techniques used, sedation practice, new PEG tube placements, complications, limitations and outcome of these procedures

Results There were 28 instances of buried FREKA PEGs among 21 patients. Nowadays, our usual management is to deploy a new PEG in a separate site, then attempt endoscopic bumper removal using a wire-guided 15Fr dilatation balloon introduced via the cut stump of the buried PEG (balloon push technique). The balloon dilates the track and grips the internal surface of the bumper during forward traction.

Conscious sedation was used in 21 instances and general anaesthesia in 7. It was possible to deploy a new PEG in 26 instances (93%) and to unbury the bumper endoscopically in 24 instances (86%). An external (push-pull) T snare technique was required twice.

There were no immediate complications; all but one survived for at least 1 year and 11 patients (52%) remain alive after 1–130 months. Three required surgical removal $\pm$ deployment of a new PEG. A patient for whom the bumper stump was left alone and a new PEG deployed had recurrent infections at the stump site during his three remaining years.

Conclusions Buried PEG bumpers can normally be managed safely endoscopically. If this fails, and the patient is expected to survive, surgery should be done to remove them. General anaesthesia was needed in around a quarter. Long term survival may be expected in some patients. Although buried bumpers could be avoided with meticulous daily care of these patients, when encountered appropriate intervention is necessary to deal with this uncommon complication associated with PEG tube feeding.

PTH-038 RESONANCE ENHANCED SELF-PROPELLED CAPSULE ENDOSCOPY FOR SMALL BOWEL EXAMINATION

¹Yang Liu*, ¹Bingyong Guo, ²Shyam Prasad. ¹University of Exeter, Exeter, UK; ²The Royal Devon and Exeter NHS Foundation Trust, Exeter, UK

10.1136/gutjnl-2019-BSGAbstracts.63

Introduction Capsule endoscopy has become established as the primary modality for examining the small intestinal mucosa. However, its reliance on peristalsis for passage through the intestine causes variable locomotion speeds, which can lead to incomplete visualisation of the mucosa and potentially missed pathology. In addition, lengthy videos resulting from long transit times can be both time-consuming and burdensome for clinicians to examine.

Methods A resonance enhanced self-propelled capsule endoscope (Liu et al., *Int. J. Mech. Sci.*, 66:2–11, 2013; Liu et al., *Nonlinear Dyn.*, 83:1029–1041, 2016) was developed for small bowel examination. The driving principle of this technique is that rectilinear motion of the capsule can be generated using a periodically driven internal mass interacting with the capsule's main body (as a hammer), in the presence of intestinal resistances. A small 'hammer' actuator, which was excited by an on-off square wave signal, was mounted in the capsule prototype. The capsule can perform forward and backward progression by modulating the amplitude and frequency of the square wave excitation. Early proof-of-concept tests in a laboratory environment were carried out for different capsule-intestine contact conditions by utilising a synthetic small intestine.

Results Three contact scenarios were investigated: capsule moving on an aluminium bench (Case 1), on a flat synthetic small intestine (Case 2), and in a tubular synthetic small intestine (Case 3). Extensive tests under different control

parameters (e.g. varying the frequency of the excitation between 1–20 Hz), were conducted for each case, and the main results are: (1) The maximum average speed of forward progression was 5 mm/s for Case 1, 7 mm/s for Case 2, and 2 mm/s for Case 3. (2) In all three cases, the maximum average speed of backward progression was 1 mm/s. (3) The energy efficiency of the capsule was up to 1.5 mm/J.

Conclusions Assuming a maximum small intestinal length of 6 m and capsule speed of just 2 mm/s (Case 3), small intestinal transit could be reduced to no more than 50 minutes, offering the potential for a 'live' and controllable examination. The energy efficiency of the prototype equates to a total of 4 kJ energy for a complete small bowel examination, which could be provided by currently available button cells.

PTH-039 THE COST-EFFECTIVENESS OF RADIOFREQUENCY ABLATION FOR GASTRIC ANTRAL VASCULAR ECTASIA REFRACTORY TO FIRST-LINE ENDOSCOPIC THERAPY

^{1,2}Cormac Magee*, ^{1,2}David Graham, ⁴Jessica McMaster, ³Catherine Leonard, ⁴Heather Davies, ¹Matthew Banks, ^{1,2}Rami Sweis, ²Gideon Lipman, ²Durayd Alzoubaidi, ^{1,2}Mohamed Hussein, ²Martin Everson, ^{1,2}Laurence Lovat, ^{1,2}Samed Sami, ^{1,2}Charles Murray, ⁵Charles Gordon, ⁴Stuart Mealing, ⁶Howard Smart, ^{1,2}Rehan Haidry. ¹University College London Hospitals, London, UK; ²University College London, London, UK; ³Medtronic UK; ⁴York Health Economics Consortium, York, UK; ⁵Royal Bournemouth and Christchurch Hospitals, Bournemouth, UK; ⁶Royal Liverpool University Hospital, Liverpool, UK

10.1136/gutjnl-2019-BSGAbstracts.64

Introduction Argon plasma coagulation (APC) is the most commonly used treatment within the UK NHS for Gastric Antral Vascular Ectasia (GAVE), a chronic condition that can cause debilitating symptoms secondary to chronic blood loss. This economic evaluation provides a preliminary assessment of the cost-effectiveness of radiofrequency ablation (RFA) in this patient population, which recent evidence suggests may offer improved safety and effectiveness when used to treat APC-refractory GAVE patients.

Methods A Markov model was constructed to undertake a cost-utility analysis for adults diagnosed with GAVE symptomatic of iron-deficiency anaemia. The economic evaluation used a UK NHS and personal social services (PSS) perspective, with a 20-year time horizon, and three-month cycles. Patients transfer between health states defined by haemoglobin level: mild (11 to 12 g dl⁻¹), moderate (9 to 10 g dl⁻¹) and severe (< 8 g dl⁻¹). The clinical effectiveness data were sourced from literature and expert opinion. Resource use and costs were reflective of the UK NHS, and parameter uncertainty was explored using probabilistic sensitivity analysis (PSA). Benefits were qualified using Quality Adjusted Life Years (QALYs), with utility weights taken from the literature. The primary output was the Incremental Cost-Effectiveness Ratio (ICER) expressed as cost per QALY gained.

Results The base case ICER was £13,933 per QALY gained, with a 58.9% chance that RFA was cost-effective at a threshold of £20,000 per QALY gained. The model estimated that implementing RFA would result in reductions in the need for intravenous iron, endoscopies and blood transfusions by 27.1%, 32.3% and 36.5% respectively. Compared to APC, RFA was associated with an estimated 36.7% fewer procedures as well as less time in severe health states (1.77 years) and more time in mild health states (1.2 years) when treated with RFA over a 20-year time horizon.