Conclusions In this the largest series to date, the accuracy of vascular staging by EUS was found to be impaired by biliary SEMS. We recommend that patients who require biliary drainage and EUS staging should have EUS before stent placement.

| P57 | LAPAROSCOPIC ASSISTED ENDOSCOPIC MUCOSAL RESECTION OF A COMPLEX CAECAL POLYP |

[1]Jody Parker*, [1,2]Sunil Dolwanit, [2]Michael Davies. [1]Cardiff University, Cardiff, UK; [2]University Hospital of Wales, Cardiff, UK

Introduction Laparoscopic Assisted Endoscopic Mucosal Resection (Laparoscopic EMR) can offer organ preservation in complex colonic polyps deemed too challenging even with expert therapeutic endoscopy input for colonoscopic resection alone.

Methods This 64 year old male was diagnosed through bowel screening with a 25 mm laterally spreading polyp in the caecum around the appendix orifice. The patient was assessed by a surgeon, an advanced endoscopist and discussed at a Complex Polyp Multi Disciplinary Team Meeting. Due to the extent of appendix orifice involvement, endoscopic intervention alone was deemed unlikely to be successful and a Laparoscopic EMR was recommended. The patient was placed in the Lloyd David position. For this caecal polyp 10 mm supraumbilical, 5 mm suprapubic and 5 mm left lower quadrant laparoscopic ports were inserted. Lateral mobilisation of the caecum was performed to facilitate laparoscopic assistance during the colonoscopic procedure. The introduction of a tape around the terminal ileum prevented inflation of the small bowel from the colonoscope. Thorough laparoscopic and endoscopic assessment ensured there was no signs of malignant change in the polyp. Piecemeal EMR was performed with laparoscopic assistance achieving complete clearance of lateral margins as visualised through the colonoscopic view. Laparoscopic invagination of the appendix enabled full resection of the polyp from the orifice. Finally the caecum was assessed to exclude evidence of immediate complications.

Results There were no intra or post operative complications. The patient was discharged the day following the procedure and histology confirmed a tubulovillous adenoma with low grade dysplasia. A check colonoscopy will be performed three months after the procedure.

Conclusions Laparoscopic EMR enables resection of complex colonic polyps that are not amenable to expert colonoscopic intervention alone whilst avoiding bowel resection and its associated risks.

| P58 | LAPAROSCOPIC ASSISTED ENDOSCOPIC MUCOSAL RESECTION REDUCES THE NEED FOR BOWEL RESECTION FOR COMPLEX COLONIC POLYPS |

[1]Jody Parker*, [2]Michael Davies, [1,2]Sunil Dolwani. [1]Cardiff University, Cardiff, UK; [2]University Hospital of Wales, Cardiff, UK

Introduction The incidence of benign complex colonic polyps is increasing. Lesion size, position or access difficulties may restrict endoscopic removal even with expert therapeutic colonoscopist input. Laparoscopic Assisted Endoscopic Mucosal Resection (Laparoscopic EMR) may facilitate polyp removal and avoid colonic resection and its risks. Our aim was to assess outcomes after Laparoscopic EMR for the removal of selected complex colonic polyps.

Methods A retrospective review was performed of consecutive Laparoscopic EMR patients between September 2008 and October 2018 in a tertiary referral unit. All included lesions and patients were prospectively assessed and discussed in a Complex Polyp Multi Disciplinary Team Meeting. Decisions confirming the suitability for Laparoscopic EMR were made when complex colonoscopic intervention alone was not feasible due to polyp size or access difficulties or had previously been unsuccessful.

Results There were 50 patients treated in the series. Median polyp size was 40 mm (range 8–90 mm) with 50% located in the caecum. Indications for laparoscopic EMR included difficult access (46%), size (28%) or both (24%). Endoscopic assisted laparoscopic appendicectomy was required in 8% of patients. There was a 12% intraoperative conversion rate to bowel resection. Postoperative complications included one bleed requiring re-operation and two urinary retentions. Median length of stay was 1 day. Final histology demonstrated malignancy in 5 polyps (9.6%). Two of these had been converted during their initial procedure as cancer was suspected during the intra operative assessment of the polyp. The remaining three had a subsequent bowel resection after discharge. Incidence of residual disease at first surveillance was 10% and all were successfully treated by colonoscopy. There was no polyp recurrence during colonoscopic surveillance over a median follow up of 77.5 months.

Conclusions Laparoscopic EMR avoided bowel resection in 82% of patients selected for this procedure. This technique provides a safe option for complex colonic polyps where advanced colonoscopic intervention alone is either unfeasible or unsuccessful with the benefits of low morbidity and excellent long term outcomes.

| P59 | ARTIFICIAL INTELLIGENCE INCREASES ADENOMA DETECTION EVEN IN 'HIGH-DETECTOR' COLONOSCOPY: EARLY EVIDENCE FOR HUMAN: MACHINE INTERACTION |

Mehul Patel*, Shraddha Gulati, Sarah O'Neil, Nicholas Wilson, Sophie Williams, Shonette Charles-Nurse, Guy Chung-Faye, Rajaventhan Srirajaskanthan, Amyn Haji, Bu'Hussain Hayee. King's College Hospital NHS Foundation Trust, London, UK

Introduction Artificial intelligence (AI)-driven polyp detection (PD) modules to assist colonoscopy in real time are now commercially available. Early controlled studies suggests that polyp detection rates (and by inference adenoma detection rates (ADR)) and mean adenomas per patient (MAP) is improved by using such a module. We wished to examine the real-world effect of AI-PD on ADR and MAP.

Methods As service evaluation, the GI Genius™ module (Medtronic, Ltd) was used by three 'high-detector' colonoscopists for index colonoscopy procedures over three months (the 'active' period). Data was collected prospectively. Results were compared to the three months immediately preceding use (the 'baseline'), as well as for two months after the active period, when the device was intentionally not used ('inactive'). Withdrawal time included time taken to resect lesions.

Results Data from 163 index procedures were analysed (mean age 65.8±4.8y; 69F). During the active period, ADR increased

from 61.1% (baseline), to 68.8% (active) and fell again in the inactive period (59.4%, p=0.53 across groups). PD rates were 70.4% vs 77.9% vs 78.1%, respectively (p=0.57).

MAP rose significantly from 1.22 to 1.84 then dropped to 1.47 (p=0.03). Withdrawal time (WT; minutes) was 11.5 vs 17.0 vs 13.5 (p=0.02 for baseline vs active only).

More adenomas >10 mm were detected in the active phase: 13 vs 39 vs 9 (p=0.03), but smaller lesions were not, with significantly more found in the transverse and left hemicolon (p=0.01 and 0.04, respectively, accounting for almost all the excess detection rate).

Conclusions In this pilot study MAP significantly increased in an AI-dependent manner, most notably in colonoscopists with an established high baseline ADR. The study was underpowered to detect a difference in ADR (n=541 required). PDR remained elevated even after the machine was switched off, suggesting a 'learning' effect. Surprisingly, more adenomas >10 mm were detected, with most 'additional' lesions being detected in the transverse and left hemicolon. The origin of these effects is not clear as the AI module studied has no additional functions other than aiding PD.

Further work is required to understand the interacting relationship between humans and AI and whether the magnitude is dependent on experience or baseline ADR. This will have intriguing implications for colonoscopy training to drive further improvements in ADR.

Mehul Patel*, Shraddha Gulati, Sophie Williams, Amyn Haji, Bu'Hussain Hayee. *King's College Hospital NHS Foundation Trust, London, UK*

Introduction Per-oral endoscopic myotomy (POEM) is a proven, effective treatment for patients with achalasia, but there are concerns regarding the risk of developing post procedure acid reflux with published studies reporting conflicting results. This study aims to determine the risk of acid reflux and related complications following POEM and influencing factors.
Methods This was a single centre, retrospective study. As part of the routine patient pathway, all patients following POEM were offered oesophageal pH testing at 3 months, symptom screening at each follow-up appointment (validated GORD HRQL questionnaire) and surveillance gastroscopy 2–3 years post POEM. Outcomes of interest included abnormal acid exposure time (AET>4.2%), DeMeester Score (>14.72), GORD-HRQL scores and endoscopic findings at surveillance gastroscopy (reflux oesophagitis, Barrett's oesophagus and malignancy) indicating acid reflux related complications.
Results 130 POEM procedures were included in analysis (mean age: 47.4 years, 55 female and median disease duration = 3.0 years). Oesophageal pH results were available for 47 patients; 13/47 (27.7%) had an abnormal AET and 12/47 (25.5%) had a positive DeMeester score. Mean GORD-HRQL symptom scores were lower in patients with abnormal AET (3.1 vs 5.8) but was not statistically significant (p=0.15). Comparing patients with abnormal and normal AET there was no significant difference for history of prior therapy (p=0.79), prior myotomy (p=0.80), disease duration (p=0.49) and total myotomy length (p=0.14). 4/20 (20.0%)

of surveillance gastroscopies demonstrated evidence of reflux oesophagitis; there were no cases of Barrett's oesophagus or malignancy.
Conclusions This study demonstrated a prevalence of 27.7% for abnormal acid exposure following POEM based on pH studies, this is at the lower limit of published research. No factors influencing the development of abnormal AET were identified. Symptom scores were lower in patients with abnormal AET but not statistically significant. Although, it is reassuring that acid reflux may be lower following POEM than previously thought, clinicians must remain vigilant and continue to offer routine pH testing and surveillance gastroscopy. Especially, as symptoms of acid reflux are a poor correlate with abnormal AET. Long-term surveillance should continue in this patient group to truly determine the long-term risks of post POEM acid reflux and associated sequalae.

[1]Frank Phillips*, [2]Miguel Fraile-Lopez, [1]Adolfo Parra-Blanco. *[1]NIHR Nottingham Digestive Diseases Biomedical Research Centre, Nottingham University Hospitals NHS Trust and University of Nottingham, Nottingham, UK; [2]Department of Gastroenterology, Hospital Universitario Central de Asturias, Oviedo, Spain*

Introduction Polyp resection techniques which use a hybrid of endoscopic mucosal resection (EMR) and endoscopic submucosal dissection (ESD) are well described. They facilitate lesions that may be difficult to remove due to snare slippage for very flat lesions or poor lifting due to fibrosis. However, endoscopists with little experience of cutting with a snare tip or dedicated endoscopic knife may not feel comfortable to perform this technique safely.
Methods Hybrid biopsy EMR involves submucosal injection with a lifting solution, then taking sequential bites around the polyp with a biopsy forceps to make a semi or full circumferential gutter. The lesion may need further lifting, before being snared with cold or hot technique, with either en-bloc or piecemeal fashion.
Results This case series includes 17 patients and 19 lesions: 8 females, 4 males with a mean age of 73.1 years (±8.67 SD, range 53–89). Lesions were located in the ascending colon (n=8), transverse colon (n=6), sigmoid colon (n=2), rectum (n=2) and caecum (n=1). Polyp size was small (n=2), intermediate (n=8), large (n=6) and fragments of large (n=3). Polyp type was laterally spreading tumour (LST) (n=6; granular mixed= 1, non-granular pseudo-depressed= 2, non-granular flat= 5), small sessile adenoma (n=3), sessile serrated lesion (n=7) and hyperplastic (n=1).

The indication for hybrid technique was actual or expected slippage (n=10) and actual or expected poor lifting (n=9). Resection was performed piecemeal (n=12) or en-bloc (n=7), with the assistance of underwater in 5 patients. Histology showed tubular adenoma (n=11; with high grade dysplasia in 3 patients), sessile serrated lesion (n=7) and hyperplastic (n=1). Excision was histologically complete in 7 patients. A follow up endoscopy has been performed in 7 patients with 9 lesions and there has been no evidence of recurrence. There was one perforation which occurred with an attempted resection of a 30 mm LST-G mixed lesion. We suspect this was