Methods This prospective single-centre study included patients with symptomatic ZD undergoing flexible endoscopic septal division (FESD) as day case procedures between 2014–2018. Patients underwent Barium swallow imaging; ZD dimensions (figure 1) were measured and agreed by two expert radiologists using a predefined protocol. Symptom severity pre- and post-FESD was recorded using the Dysphagia, Regurgitation, Complications (DRC) scale.¹ Procedural difficulty was rated on a three-point scale: easy, moderate, difficult. The primary outcome was therapeutic success, defined as remission following single episode FESD with a DRC score of 1 or less at 6 months of follow-up. ZD dimensions were subjected to Mann-Whitney tests and logistic regression analyses.

Results In total, 68 patients (mean age 74.2, SD 11.8) underwent barium radiology. Male gender comprised 60.9% of the cohort and was associated with larger pouch height ($P=0.008$), width ($P=0.004$) and depth ($P=0.045$). A positive correlation was identified between baseline DRC score and pouch depth (ρ 0.319, $P=0.012$), particularly the symptom of regurgitation ($P=0.009$). No significant associations were found between ZD dimensions and procedural difficulty. Overall, each patient underwent an average of 1.4 FESD procedures. The outcome of therapeutic success at 6-months was achieved in 69% and was associated with shorter pouch height (median 14.5 mm vs. 19 mm, $P=0.030$) and pouch width (median 20 mm vs. 28 mm, $P=0.046$), with smaller cricopharyngeal length tending towards significance (median 20.8 mm vs. 26.3 mm, $P=0.051$). On multivariable analysis using a forward stepwise approach, pouch height was the sole dimension affecting the study outcome, with each additional mm in pouch height associated with a decrement in the probability of therapeutic success (OR 0.946, 95% CI: 0.897–0.997, $P=0.031$).

Conclusions ZD dimensions may be feasibly evaluated using Barium radiology. Specific parameters, especially those relating to the pouch, appear to correlate with baseline severity and post-FESD patient outcomes. These results may inform the planning of FESD in day case patients with ZD.

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ATH-06 FIRST CLINICAL EXPERIENCE WITH SPEEDBOAT RS2, A NEW MULTIMODALITY DEVICE FOR COLONIC SUBMUCOSAL DISSECTION

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Introduction The 'Speedboat-RS2' (Creo-Medical/Wales/UK) is the first multi-modality device, incorporating bipolar-radiofrequency energy for cutting, microwave energy for coagulation, an integrated needle for submucosal injection, and a rotatable blade with a heat insulated hull.

Methods A prospective database from June 2018 to Jan 2019 was analyzed including 20 consecutive patients (mean age: 69.7 ± 15.18 years, 50% males) with 20 colorectal Lateral Spreading Tumours/LSTs. Two operators performed all colonic endoscopic submucosal dissections/ESDs.

Results Sixteen procedures were performed under conscious sedation and 4 general anaesthesia (Olympus/CF-HQ290ZL/

13.2 mm tip diameter). Median lesion size was 4 cm (range 1–9 cm). The LSTs and procedural characteristics are described in table 1.

Abstract ATH-06 Table 1

Case	Polyp site	Polyp Morphology	Procedure	Procedure Time (hrs)	Polyp size (cm)	Delayed Bleeding
1	SC	LST-G (MN)	ESD/snare conversion	>2	6	No
2	SC	LST-G (MN)	ESD/snare conversion	1–2	7	No
3	Rectum	LST-NG (F)	ESD En-bloc	<1	1	No
4	SC	LST-G (U)	ESD En-bloc	<1	4	No
5	Rectum	LST-G (U)	ESD/snare conversion	1–2	5	No
6	Caecum	LST-G (U)	Abandoned 'Muscle retraction sign'	NA	3	NA
7	AC	LST-NG (F)	ESD/snare conversion	1–2	4	No
8	Hepatic flexure	LST-G (U)	ESD En-bloc	1–2	4	No
9	SC	LST-G (U)	ESD En-bloc	1–2	3	No
10	Rectum	LST-G (MN)	ESD/snare conversion	>2	4.5	Yes
11	TC	LST-NG (F)	ESD/snare conversion	>2	9	Yes
12	AC	LST-G (U)	ESD/snare conversion	1–2	4.5	No
13	SC	LST-G (U)	ESD En-bloc	<1	2.5	No
14	RS	LST-G (U)	ESD En-bloc	1–2	4	No
15	Caecum	LST-NG (F)	ESD/hybrid En-bloc	1–2	3.5	No
16	TC	LST-G (U)	ESD En-bloc	<1	3.6	No
17	Rectum	LST-NG (F)	ESD/snare conversion	<1	5	No
18	Rectum	LST-G (U)	ESD En-bloc	<1	4	No
19	AC	LST-G (U)	ESD/hybrid En-bloc	<1	2.5	No
20	Rectum	LST-G (MN)	ESD En-bloc	1–2	3.5	Yes

1/20 case was abandoned during dissection. Endoscopically en-bloc resection was achieved in 11/19 (57.8%) cases and 10/19 cases (52.6%) resections were R0 histologically. In 8/19 patients snare excision was used to facilitate resection with a median of 2 resection pieces. Microwave energy was utilized to pre-coagulate and control active bleeding successfully in 17/19 (89.5%) cases and haemostatic monopolar forceps was required in 2 cases. Histology showed dysplasia in 15/19, NET in 1/19 and T1 cancer in 3/19. 2/3 patients with T1 cancers had endoscopic surveillance with no recurrence and 1 had surgery and no residual tissue. 3/19 patients experienced

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delayed bleeding all requiring endoscopic hemostasis. No perforation was seen.

Conclusions This early experience with SRS2 shows colorectal submucosal dissections are feasible with an acceptable safety profile. Resection times for lesions ≤ 4 cm were relatively quick and microwave coagulation appeared to be effective in most cases.

ATU-01 ENDOSCOPIC AMPULLECTOMY: HOW SAFE IS IT IN UK SETTINGS?

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Introduction Endoscopic ampullectomy is a minimally invasive technique of treating non-invasive lesions involving the ampulla of Vater, and offers an alternative to major surgical intervention. In this study, we describe the safety and outcome of this procedure from a large, tertiary centre.

Methods Data were prospectively collected on an electronic database. Parameters related to ampullectomy outcome and complications were retrospectively analyzed.

Results A total of 37 cases were included in this analysis, between 2009 and 2018. Average age was 66. Female represented 59.4% of patients. Mean duration of follow up was 62.3 weeks. 23 (62.1%) lesions were pure ampullary, and the remaining involved the duodenal wall as well. Lesions ranged from 5 to 80 mm in size, with average size of 21.58 mm. 5 patients (13.5%) had familial adenomatous polyposis FAP. Pre resection histology confirmed HGD in one patient (2.7%), and neuro-endocrine tumor NET in one case (2.7%). Post resection histology showed focal adenocarcinoma in 1 patient (2.7%).

Prophylactic PD stenting was performed in 26 cases (70.2%), adjunctive APC used in 7 cases (18.9%), and Submucosal injection in 27 cases (72.9%). En-bloc resection was achieved in 16 (43.2%), while piecemeal in 21 cases (56.7%). Recurrence observed in 9/37 cases (24.3%). Piecemeal resection and lack of submucosal injection were significantly associated with higher risk of recurrence ($P=0.0485$, $P=0.0471$, respectively). Early bleeding (including intra-procedural and bleeding within 24 hours of procedure) happened in 5 patients (13.5%), delayed bleeding (after 24 hours) in 2 cases (5.4%), all were successfully treated endoscopically. Only 1 patient (2.7%) had Pancreatitis, and one patient developed ampullary stenosis post procedure. There was no report of perforation, need for emergency surgery or 30 day mortality in this series.

Abstract ATU-01 Table 1 Outcomes and complications following endoscopic ampullectomy in a single UK tertiary endoscopy unit (Total number of patients =37)

Outcomes		
	En-bloc resection	16 (43.2%)
	Piecemeal resection	21 (56.7%)
	Recurrence	9 (24.3%)
Complications		
Bleeding	Early	5 (13.5%)
	Delayed	2 (5.4%)
Pancreatitis		1 (2.7%)
Ampullary Stenosis		1 (2.7%)
Perforation		0 (0%)

Conclusion Our series demonstrate the safety of this procedure in the UK setting. Piecemeal resection, and lack of submucosal injection seems to predict risk of recurrence, while size of the lesion did not significantly affect this outcome.

ATU-02 A PROSPECTIVE, COMPARATIVE STUDY OF PLENUV®, MOVIPREP® AND SENNA/CITRAMAG AS BOWEL PREPARATION FOR SCREENING COLONOSCOPY

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Introduction Efficacy and patient acceptability of bowel preparation are key components in colorectal cancer screening (CRC) populations. Plenvu is a new, 1 litre, low volume PEG-based product indicated for bowel cleansing in adults prior to colonoscopy. Two Phase III studies have demonstrated superior colon cleansing efficacy, with comparable safety and tolerability versus standard preparations.^{1 2}

Methods The aim was to assess the effectiveness and acceptability of Plenvu as compared to two different regimes for bowel preparation. A total of 68 consecutive patients attending day-case screening colonoscopy as part of the Bowel Cancer Screening Program were allocated either Plenvu (Norgine UK) ($n = 31$), Moviprep (Norgine, UK) ($n = 26$) or senna and Citramag (Sanochemia UK) ($n = 11$). An adapted split dosing regime was used for morning and afternoon appointments. Patients recorded their experience of the preparation on a questionnaire and one of two experienced endoscopists blinded to the preparation given, assessed bowel cleansing using the Boston Bowel Preparation Scale (BBPS). The volume of fluid aspirated from the colon (total amount in suction canister) and volume of fluid required for mucosal washing (including 50 ml syringes and automated irrigation pump use) was measured during each procedure.

Results All patients completed their prescribed dose of bowel preparation. A total of 55% of patients reported Plenvu as pleasant in taste; this was comparable to both Moviprep (59%) and senna/Citramag (45%). Plenvu provided superior bowel cleanliness in each segment of the colon with an average total BBPS score of 7.5 out of 9 as compared to Moviprep (6.4) and senna/Citramag (6.0) ($p=0.006$). The median volume of fluid aspirated from the colon was 400 mls for all three bowel preparations ($p=0.96$). The median volume required for mucosal washing was lowest in the Plenvu group (200 mls) compared to Moviprep (350 mls) and senna/Citramag (250 mls) ($p=0.04$).

Conclusions Plenvu appears to be an effective and palatable bowel preparation, providing superior cleanliness and a reduced requirement for washing. It is currently the lowest volume PEG based solution available and an important alternative for patients unable to tolerate higher volume preparations.

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