It is a useful technique to exclude *H. pylori* gastritis. The clinical relevance is that this technique allows for targeted biopsies, reducing the miss rate and thus increasing the diagnostic yield.

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PTU-034 DOUBLE BLIND RANDOMISED CONTROLLED TRIAL OF MAGNETICALLY STEERABLE GASTRIC CAPSULE ENDOSCOPY (MSGCE) VS. CONVENTIONAL GASTROSCOPY FOR DETECTION OF BEADS IN A PORCINE STOMACH

[1]MF Hale*, [2]I Rahman, [1]K Drew, [1]R Sidhu, [3]SA Riley, [2]P Patel, [1]ME McAlindon. *[1]Gastroenterology, Royal Hallamshire Hospital, Sheffield, UK; [2]Gastroenterology, Southampton Hospital University Trust, Southampton, UK; [3]Gastroenterology, Northern General Hospital, Sheffield, UK*

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Introduction Gastroscopy is uncomfortable for patients and incurs the risks of intubation and sedation. Capsule endoscopy is well tolerated and recently a handheld magnet has been developed to enable steering of the capsule to visualise all areas of the capacious stomach. Our preliminary data suggests that a novice can identify all beads sewn into a porcine stomach within 4 min after 40 consecutive examinations.[1] We performed a double blind randomised controlled trial comparing MSGCE with conventional gastroscopy in the detection of beads in the same model.

Methods Ex-vivo porcine stomach models were used in a standard housing unit. MSGCE was performed according to a standard protocol using 1000mls of water to distend each stomach and a combination of positional change (head down, 30° left lateral, 30° right lateral) and magnetic control to steer the capsule. Each model was examined in a standard fashion by gastroscopy and subsequently MSGCE using MiroCam Navi (Intromedic Ltd). Two blinded investigators (MFH and IR) competent to perform both procedures were allocated randomly to perform either gastroscopy or MSGCE on each model.

This was performed as a non-inferiority study with an expected sensitivity of 90% for both (0 estimated difference), a specificity of 100% and a difference of interest 10 percentage points (i.e., 80% is significantly worse). A sample size of 85 beads was needed to achieve this statistical power. Twelve porcine stomachs were prepared with beads as follows: 2 × 0 beads, 2 × 1 bead, 2 × 2 beads, 2 × 3 beads, 2 × 4 beads, 2 × 5 beads, giving a total of 30 beads. The study was conducted in three rounds, giving a total of 90 beads to be identified. Number of beads identified and procedure duration was recorded.

Results Gastroscopy correctly identified 88% (79/90) beads, MSGCE correctly identified 89% (80/90) beads and thus is non-inferior to gastroscopy in this setting (95% CI 82.54–95.46%). Mean examination times for gastroscopy and MSGCE were 3.34 min and 9.90 min respectively. MSGCE overestimated the number of beads present on a single occasion.

Conclusion MSGCE is equivalent to conventional gastroscopy in the detection of beads placed in a porcine stomach model. Procedure duration was longer for MSGCE compared to gastroscopy. Further studies in humans are necessary to define the scope and utility of this exciting new technique.

REFERENCE

1 Hale MF, Drew K, Baldacchino T, Anderson S, Sanders DS, Riley SA, Sidhu R, McAlindon ME. Gastroscopy without a gastroscope! Feasibility in a porcine stomach model using a magnetic capsule. *Abstract. British Society of Gastroenterology Annual Meeting*, Jun 2013

Disclosure of Interest None Declared.

PTU-035 SINGLE CENTRE EXPERIENCE WITH ENDOCLOT POWDER SPRAY FOR UPPER GASTROINTESTINAL BLEED

M Kasimanickam*, S Vinnamala, MR Andrew, C Lim, M Ahmed. *Gastroenterology, Good Hope Hospital, Sutton Coldfield, UK*

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Introduction Endoclot' (EPI) and 'Hemospray' (Wilson Cook) are haemostatic powders marketed for endoscopic use. The

Abstract PTU-035 Table 1

Age and sex	Endo diagnosis	Endotherapy	Co morbidity	Outcome	30 days mortality Y/N
63F	DU	Adrenaline + balloon tamponade +	DM, stroke, CKD, COAD	Haemostasis	Y
92F	DU	Endoclot	Leukaemia, TIA, HT, asthma	Haemostasis;died 11days later,	N
85M	Multiple	Adrenaline + Endoclot (partial)	CVA, COPD, CKD	pneumonia	Y
87M	DU	Adrenaline + clips + gold probe +	CVA, CKD, AF, HT	Haemostasis	N
88M	DU	Endoclot x2	MI, AF	Died 3 days later due to sepsis	N
83M	DU	Endoclot	COPD, CVA, AF, HT, CKD,	Died 5 days later, pneumonia	Y
	DU	Adrenaline + Endoclot Adrenaline + Goldprobe + Clips + Endoclot	Carotid endarterectomy	Died 19 days later due to cardiac failure	
63M	Bleeding lymphoma – 4th part of duodenum	Endoclot via enteroscope	End stage follicular lymphoma	Died next day	N
89F	GU	Adrenaline + Endoclot	Cholangitis	Haemostasis	Y
67F	Severe bleed after gastric polyp biopsy	Adrenaline + Endoclot	DM, CKD, HT	Haemostasis	Y
77M	Gastric Erosions/ Gastric Lymphoma	Adrenaline + Goldprobe + Endoclot	Lymphoma	Died 5 days later, late rebleed	N
81M	GOJ Tear Post ERCP	Adrenaline + Endoclot		Haemostasis	Y
83M	GIST	Endoclot	AF, MI, CVA	Haemostasis	Y

powders desiccate bleeding lesions and promote clotting. They can be used either as an adjunct to conventional haemostatic modalities or as monotherapy.
Aim We report our early experience with Endoclot usage in upper gastrointestinal bleed.
Methods N=12 patients; M7:F5; Median age 75y (63y–92y). All were frail with multiple co-morbidities (Table 1). Endoscopic diagnosis: duodenal ulcer (6), bleeding GI lymphoma (2), gastric ulcer (1), post gastric polyp biopsy bleed (1), GIST (1) and Mallow Weiss tear (1). Endoclot was used as monotherapy in 3/12 and as adjunct in 9/12. All patients had immediate haemostasis and one patient had late re bleed at 120hrs (8%). 1/12 died within 24hr. 6/12 were alive at 30 days.
Results
Conclusion Haemostatic powder spray is a promising new technique, particularly for difficult bleeds in frail patients.

REFERENCE

Leahy A, *et al*., Early clinical experience of endoclot™ in the treatment of acute gastro-intestinal bleeding.
Gut 2013;62:A149

Disclosure of Interest None Declared.

PTU-036 ENVIRONMENTAL ENTEROPATHY: IMAGING THE CELLULAR BASIS OF DISRUPTED BARRIER FUNCTION

[1]P Kelly*, [2]T Banda, [2]R Soko, [2]R Banda, [1]J Louis-Auguste. *[1]DDC, Blizard Institute, Barts and the London, London, UK; [2]University Teaching Hospital, Lusaka, Zambia*

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Introduction Environmental enteropathy (EE), originally termed tropical enteropathy, is very common in overcrowded living conditions in developing countries. It predisposes to growth failure in the young, and probably to poor performance of oral vaccines. By permitting microbial translocation it probably contributes to insidious systemic immune activation. In order to understand the impairment of barrier function in EE, we performed confocal laser endomicroscopy (CLE) in 62 healthy volunteers from a poor community in Lusaka, Zambia.
Methods These asymptomatic volunteers were drawn from a community in Misisi with which we have been conducting studies for 15 years. On day 1 a 3 h lactulose: mannitol permeability and zinc absorption test was performed. On day 2 CLE of the duodenal mucosa was performed with diazepam/pethidine sedation and 5–10 ml 2% intravenous fluorescein, and images collected for 10 min exactly (mean number of images analysed 135, SD57). Biopsies were subsequently taken to analyse villous morphology and tight junction protein expression (data not yet available).
Results In the first 22 volunteers (12 female, 10 male) studied, a wide range of villous architectural patterns was observed from leaf-like to convolutions. Similarly, a wide range of barrier abnormalities was observed, with some volunteers showing severe fluorescein leakage within one minute of fluorescein injection. Epithelial breaks, particularly multicellular breaks termed microerosions, were strongly correlated with the rate of fluorescein efflux (Spearman's rho 0.92; $P < 0.0001$). The number of plumes was almost as strongly correlated (rho = 0.69; $P = 0.0004$). All volunteers showed some abnormality, with Watson grade = 3 in all cases, corroborating our previous reports that EE is ubiquitous in this population. We also observed that fluorescein leakage and epithelial barrier defects were not correlated with villous architectural change (rho = 0.01; $P = 0.96$), suggesting that villous remodelling and barrier defects are differentially determined.
Conclusion CLE permits imaging of small intestinal epithelial barrier defects and suggests that cellular breaches are major routes of intestinal permeability but independent of villous architecture.
Disclosure of Interest None Declared.

PTU-037 DOUBLE BALLOON ENTEROSCOPY – A SINGLE AUSTRALIAN TERTIARY CENTRE EXPERIENCE

[1]P Sattianayagam*, [2]P Desmond, [2]A Taylor. *[1]Gastroenterology, Kent and Canterbury Hospital, Canterbury, UK; [2]Gastroenterology, St. Vincent's Hospital, Melbourne, Australia*

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Introduction Double balloon enteroscopy (DBE) has revolutionised the diagnosis and therapies available in the management of small bowel diseases. There are currently no large series of its diagnostic and therapeutic capability from Australia.
Methods We evaluated the baseline demographics, diagnostic findings and therapeutic interventions of all patients undergoing DBE between 2004 and 2012 at St. Vincent's Hospital, Melbourne.
Results There were 357 procedures (218 antegrade) performed in 294 patients (152 female and 142 male). Intubation distances were greater via an antegrade route than retrograde and were even lower in those retrograde cases who had undergone prior abdominal surgery. Thirty-five patients had bidirectional DBE with complete enteroscopy in one of these cases. Indications for DBE included obscure gastrointestinal bleeding (76%), abdominal pain (13%) and diarrhoea (3%). Obscure gastrointestinal bleeding was the main indication contributing to the diagnostic yield of 46% in the entire series. This was especially prevalent in those >75 years, who typically had more cardiorespiratory co-morbidities and were also more likely to be on anti-platelet therapy or anticoagulation. An antegrade approach had a higher diagnostic yield in the series than a retrograde one (54% vs. 34%). Angioectasias were the commonest diagnosis (21% cases) and occurred more frequently in those presenting with overt haemorrhage or requiring transfusion. Polyps/mass lesions (several of which were discovered on screening of patients with polyposis syndromes) and ulcers/strictures (which were typically associated with Crohn's disease) were the other major diagnostic groups (12 and 4% cases respectively). Both were more prevalent in younger patients. A retrograde approach was better for diagnosis of ulcers/strictures. The therapeutic yield in the entire series of 23% was noticeably better via an antegrade approach and in the elderly. Haemostasis of angioectasias was the commonest therapy (19% cases in the whole series) followed by polypectomy and stricture dilatation (4 and 2% cases in the series respectively), which potentially obviated the need for surgery.
Conclusion DBE is a major contributor to the management of small bowel disease in an Australian population. Obscure gastrointestinal bleeding is the main indication with better diagnostic and therapeutic yields in the elderly and when there is overt haemorrhage or transfusion requirement. An antegrade approach is more useful in these patients unlike in those with ulcers and strictures, who typically had Crohn's disease and were younger and in whom a retrograde approach was more