

with the remainder predominantly due to unexplained anaemia (18%). Only 50% (25/50) of inpatient bowel preparation was rated by the endoscopist as “excellent” or “good,” compared with 86% overall for the same period ($p < 0.001$ by χ^2 analysis). Among endoscopists with individual overall caecal intubation rates of $>90\%$, the inpatient caecal intubation rate was only 74% (37/50). Out of the 13 failed inpatient intubations, 7 (54%) were due to poor bowel preparation. The remainder were due to patient discomfort (3), difficult angulation (2), and malignancy (1). In addition, the overall inpatient success rate was only 66% (33/50). In four cases (8%), although caecal intubation was achieved, poor bowel preparation meant a small lesion could not be excluded.

Conclusion This audit has demonstrated that the failure rate for inpatient colonoscopy is greater than outpatient procedures. The majority of these failures are due to poor bowel preparation. The reasons for this are complex, but may include reduced mobility and poorer adherence to bowel preparation and oral hydration. Deferring colonoscopy until after discharge from hospital is therefore advised whenever possible.

Competing interests None declared.

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PTU-232

EVALUATING THE ROLE OF CAPSULE ENDOSCOPY IN EQUIVOCAL COELIAC DISEASE?

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Introduction Demonstration of villous atrophy (VA) on small bowel biopsy and positive serology (endomysial antibody (EMA) and/or tissue transglutaminase (tTG)) is the current gold standard for diagnosing coeliac disease. Difficulty in establishing the diagnosis may arise for several reasons. A minority may have antibody negative disease. Some individuals may have positive antibodies with histological changes that fall short of VA (Marsh Grade 1 and 2 [MG1-2]) or are unable to tolerate gastroscopy. In addition, not all VA seen is caused by coeliac disease. The aim of this study was to assess the value of capsule endoscopy (CE) in equivocal coeliac disease.

Methods Data from all patients with equivocal coeliac disease who underwent CE between 2004 and 2011 in a tertiary gastroenterology department were analysed. Patients were subdivided into five main groups: Group 1—antibody negative VA; Group 2—MG1-2; Group 3—positive coeliac serology with normal duodenal biopsy; Group 4—miscellaneous including strong family history and non-gastro-intestinal presentation of probable coeliac disease; Group 5—failed or refused gastroscopy. Demographic data, indication for CE, serology and histology were recorded prospectively. Videos were analysed by two experienced gastroenterologists blinded to the clinical data. Markers of coeliac disease such as scalloping, mosaic pattern and loss of folds were assessed. A diagnosis of coeliac disease was further supported by not only CE appearances but also combinations of HLA typing (DQ-2 or DQ-8), gluten challenge/response to a gluten free diet and in some cases repeat duodenal biopsy.

Results 102 patients, 72 female, median age 49 years, (range 18–89 y) underwent CE. 17/102 (16%) had features of coeliac disease on CE, with a further three cases of Crohn’s disease identified (Abstract PTU-232 table 1). In patients with coeliac antibody

negative VA, CE secures a diagnosis of coeliac or Crohn’s in 9/32 (28%) significantly more than in other groups where previous gastroscopy was undertaken ($p=0.04$). In 57% (4/7) of patients with positive coeliac serology who either failed or refused gastroscopy, CE helped establish the diagnosis.

Abstract PTU-232 Table 1

	Normal CE (n)	Features of coeliac	Other CE diagnosis
Antibody –ve VA (n=32)	23	7	2 Crohn’s
MG1-2 (n=29)	26	2	1 Crohn’s
+ve antibody, normal biopsy (n=10)	9	1	0
Miscellaneous (n=24)	21	3	0
Failed/refused gastroscopy (n=7)	3	4	0

Conclusion CE may have a role in the assessment of patients with coeliac antibody negative VA and in antibody positive patients where previous gastroscopy has been refused or failed. Its routine use is not supported in other causes of “equivocal” coeliac disease.

Competing interests None declared.

PTU-233

IN VIVO POLYP SIZE AND HISTOLOGY ASSESSMENT AT COLONOSCOPY: ARE WE READY TO RESECT AND DISCARD? A MULTI-CENTRE ANALYSIS OF 1212 POLYPECTOMIES

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Introduction The current paradigm of colonoscopic management of polyps is to resect and send for pathologic assessment. Such practice incurs substantial costs for a group of lesions with limited clinical importance. Several studies have proposed a resect and discard approach for smaller polyps. For this to be effective our in vivo assessment of polyp size needs to be accurate. Additionally a high positive predictive value (PPV) of adenomas among polyps resected is essential to ensure patients are correctly risk stratified for surveillance.

Methods All polypectomies performed from 1 January 2010 to 31 December 2010 were identified retrospectively from databases in a dual site teaching hospital and local district general endoscopy units. Polyps removed and retrieved with corresponding histology were identified. Polyp site, endoscopic size and endoscopist speciality were recorded. Carcinomas, adenomas and serrated lesions were determined to be neoplastic. The total number of neoplasms removed divided by the total number of polyps removed was calculated (PPV). Fishers exact test was used to compare the subspecialties of endoscopist (nursing/surgical/medical). In vivo size was analysed for terminal digit preference by the colonoscopist compared to histology measurements using a χ^2 goodness of fit test. Calculations of the distribution of error between in vivo estimation and histology measurement and the number of times the size discrepancy crossed the 10 mm value used in planning surveillance colonoscopy were performed.

Results 1212 polyps were included, 864 had in vivo size estimation and subsequent en-bloc histology measurements ≤ 20 mm. The PPV for neoplastic polyps was 69% (831/1212) with 381 non-neoplastic polyps removed. Nurse endoscopists had the highest PPV, 74% ($n=347/486$) compared to surgeons (PPV 72%: 143/199) and medics (PPV 64%: 339/527, $p < 0.02$). Considering proximal hyperplastic polyps as neoplastic the overall PPV=73% (879/1212), nurses PPV

75% (364/486); surgeons 74% (147/199); medical 70% (368/527); $p < 0.1$. Size assessment correlated poorly with histology with a significant increase in the use of 5 mm and 10 mm measurements in vivo ($\chi^2 = 71.3$ DF=9 $p < 0.0001$). 290 polyps were estimated smaller in vivo and 302 larger (294 precise) when compared to histology [distribution of error curve: SD=3.22 mm; mean=0.16 mm; median=0]. A discrepancy across the 10 mm size occurred in 96 polyps (11%).

Conclusion Currently a poor PPV for neoplastic polyps and imprecision in vivo size estimation would mean a resect and discard approach would be inaccurate, but current practice removes a large amount of benign pathology and has both patient morbidity and significant cost implications.

Competing interests None declared.

PTU-234 ENDOSCOPIC ULTRASOUND GUIDED FINE NEEDLE ASPIRATION FOR THE DIAGNOSIS OF PANCREATIC CYSTIC NEOPLASMS: A META-ANALYSIS

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Introduction Pancreatic cystic neoplasms consist of mucinous cystic neoplasms (MCNs) and serous cystic neoplasms (SCNs). MCNs have significantly greater malignant potential, and if resected early the prognosis is excellent, although mortality is 2%–3%. Endoscopic ultrasound is a minimally invasive and well tolerated procedure. EUS with fine-needle aspiration (EUS-FNA) provides samples for cytology and fluid analysis, a major advantage over other techniques. However the diagnostic accuracy of EUS-FNA is highly variable in published studies.

Aim To determine the diagnostic accuracy of EUS-FNA to differentiate mucinous vs non-mucinous cystic lesions with morphology, and cyst fluid analysis for cytology and carcinoembryonic antigen (CEA) via a meta-analysis of published studies.

Methods Relevant studies were identified using MEDLINE and included if they used a reference standard of definitive surgical pathology or clinical follow-up (≥ 6 months). Study quality was assessed using the STARD (STANDards for the Reporting of Diagnostic Accuracy) initiative criteria. Data were analysed using Meta-DiSc® v.1.4, which generated pooled estimates for sensitivity, specificity and summary ROC curve. Subgroups, determined a priori, were used to assess heterogeneity: prospective vs retrospective, location, number of centres and patients, 19G or 22G needle and STARD score.

Results 24 studies published between 2001 and 2011 were included, a total of 1703 patients. The median number of patients in each study was 53 (range 18–197) and the median study length was 54 (12–144) months. The pooled sensitivities (95% CI) and specificities (95% CI) and area under the sROC curve (SE), respectively, were: EUS morphology 55 (49–61)%, 65 (57–72)% and 0.74 (0.095); Cytology 54 (50–59)%, 93 (90–95)% and 0.95 (0.040); and CEA 63 (59–67)%, 88 (83–91)% and 0.79 (0.034). Subgroup analysis indicated that retrospective design, low STARD score and study location outside Europe were significant sources of heterogeneity.

Conclusion Fine-needle aspiration has moderate sensitivity but high specificity resulting in good overall diagnostic accuracy for MCNs. Morphology alone is inadequate for distinguishing cystic lesions but may contribute to the assessment of more advanced lesions. The moderate sensitivity of FNA (54%) means a significant proportion of MCNs will not be detected. However, the high specificity (93%) means that a positive result is strongly indicative of a MCN. Thus, EUS-FNA is a useful diagnostic tool for correct identification of MCNs and may be the gold standard for pre-operative assessment.

Competing interests None declared.

PTU-235 SUCCESS OF SINGLE STENT ENDOSCOPIC ULTRASOUND (EUS) GUIDED PANCREATIC CYSTOGASTROSTOMY

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Introduction Current accepted practice for EUS-guided stent insertion for drainage of pancreatic pseudocysts (PP) involves placement of two or more double-pigtail stents.¹ There has been little work into whether a single stent would provide an equal outcome without increasing complications. Rates of successful drainage without surgical or percutaneous intervention are 88–64% with complication rates at 32–14%.² We present a case series comparing outcomes of single stent insertion against these.

Methods Retrospective analysis of cases, identified by searching the electronic endoscopic database, in a DGH providing tertiary HPB and EUS service between August 2005 and December 2011 was performed. All procedures were performed by the same experienced endoscopist. All patients had a radiographically proven PP and received a single 7 cm 7Fr double-pigtail stent with prophylactic antibiotics.

Results 24 patients underwent cystogastrostomy. 1 patient died from unrelated causes in the days post-procedure, therefore is not included in the analysis. 20 of 23 patients (86.9%) were successfully drained without any surgical or percutaneous intervention. One patient had a pre-existing infected PP, only recognised on fluid analysis after the procedure, required laparotomy for excision and surgical cystogastrostomy. With hindsight more than one stent may have resulted in a better outcome. There were two procedure related complications (8.6%). One suffered pneumoperitoneum 2 days post-procedure. Emergency surgery revealed the pancreatic lesion to actually be a mucinous cystadenoma, despite radiographically and endoscopically (including pre-stent insertion aspirate) behaving as a PP. This misdiagnosis and complication was unavoidable due to this unusual behaviour. The other patient developed sepsis 26 days post-procedure, and had a CT guided drain. Culture of aspirated cyst fluid revealed candida, possibly a post-insertion complication or an incidental finding; patient responded to fluconazole. Two further patients were re-admitted with pyrexia 3 and 5 days respectively post-procedure. They improved with antibiotics, required no intervention, and imaging revealed PP improvement.

Conclusion This data suggests that efficacy and complication rates for single-stented EUS-guided cystogastrostomy in simple PP are comparable with data from studies using two or more stents. This would result in shorter procedure time and reduced risks from insertion thereby improving patient safety, and reduced costs. Single stenting is not recommended for infected or complex PP.

Competing interests None declared.

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PTU-236 ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY (ERCP) METAL BILIARY STENT INSERTIONS: OUTCOME AND COMPLICATIONS

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Introduction Endoscopic retrograde cholangiopancreatography (ERCP) is an established technique for palliative stenting and