cases were reported as indefinite for dysplasia, 32/620 were low grade dysplasia and 10/620 cases were classified as high grade dysplasia. 233/620 (37.6%) patients had on average one follow-up and 100/620 (16.1%) had two or more follow ups during the study period.

Conclusion Compliance with BSG follow-up recommendations and other practise parameters is poor. We recommend a formal surveillance programme with dedicated endoscopy lists to improve compliance and permit a meaningful assessment of the clinical and cost effectiveness of such strategy.

Disclosure of Interest None Declared

PTU-154 SIRT2 MODULATES THE INFLAMMATORY RESPONSE IN OESOPHAGEAL ADENOCARCINOMA

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Introduction Gastro-oesophageal reflux disease is the main risk factor for Barrett's oesophagus (BE), the precursor lesion to oesophageal adenocarcinoma. In BE, GORD leads to chronic inflammation and to NF- κ B pathway activation.

SIRT2 is a histone deacetylase involved in deacetylation of key players in the cell, including p65, one subunit of the NF- κ B transcription complex. SIRT2 is part of our previously published gene signatures in which loss of SIRT2 confers a poor prognosis and overexpression a good prognosis in keeping with its known role as a tumour suppressor.

We hypothesised that exerts its protective effect through recruitment of inflammatory cells to the tumour site via the NF- κ B pathway. The aim of this study was to assess the inflammatory infiltrate in positive tumours to assess the relationship between the NF- κ B pathway.

Methods 76 surgical resection specimen of oesophageal adenocarcinoma were immunostained for SIRT2. An in-depth analysis of the nature of inflammatory cells localised to high SIRT2 areas was done in 5 cases using immune cell markers (CD3, CD4, CD8, CD20, CD56 and CD68). NF- κ B and SIRT2 luciferase reporter assays were used with SIRT2 overexpression and TNF α stimulation to study the interplay between the NF- κ B pathway and SIRT2. A panel of SIRT2 promoter mutants with mutations of one or two or both NF- κ B putative binding sites, identified through an *in silico* analysis, were also used.

Results 32% of the cases were strongly positive for SIRT2 (+3 and +2 on a scale from 0 to +3 where 0 is negative). A higher number of inflammatory cells were identified in SIRT2-positive cases compared to SIRT2 negative cases. In particular, SIRT2 positive cases showed strong staining for CD68 indicating an enrichment in the number of macrophages. SIRT2 overexpression significantly down-regulated NF- κ B activity ($p = 0.0011$). Immunoblotting suggests that this downregulation is probably conferred by the deacetylation of Lysine 310 at the p65 subunit of NF- κ B. Luciferase assays with the full-length SIRT2-promoter reporter revealed that the SIRT2 promoter was induced by TNF α stimulation (activates NF- κ B pathway). This stimulation resulted in decreased luciferase activity when the NF- κ B binding sites mutants were used, suggesting a direct action of NF- κ B on SIRT2.

Conclusion In oesophageal adenocarcinoma, SIRT2 expression is linked with an increased inflammatory infiltrate, especially macrophages. Luciferase reporter assays suggest that SIRT2 and NF- κ B regulate each other. Taken together, downregulation of NF- κ B by SIRT2 could be an explanation for the protective effect of SIRT2 overexpression in oesophageal adenocarcinoma. Further work is required to confirm these findings.

Disclosure of Interest None Declared

PTU-155 LESSONS LEARNT FROM THE FIRST 50 CONSECUTIVE PRIMARY LAPAROSCOPIC NISSEN FUNDOPLICATIONS IN A SINGLE SURGEON'S PRACTICE

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Introduction Laparoscopic Nissen fundoplication (LNF) is widely used in the surgical management of gastroesophageal reflux disease (GORD). However, it is a complex operation that requires advanced laparoscopic skills. Very few studies report objective testing postoperatively; those that do show high rates of failure within the first 1–3 years following surgery. Complications and failures of LNF are directly related to surgeon's experience and the learning curve has been identified as a confounding factor.

The Aim of this is analyse a single surgeon's first 50 consecutive primary LNFs experience. The data will be used to attempt to define the learning curve (LC) for LNF using success as surrogate marker of competency, and of how this may influence future training.

Methods All the patients who underwent antireflux surgery were entered into a prospectively maintained database. The procedures were performed using a five-trocar technique and with 10-/5- mm ports and instruments. Surgical outcome was recorded using the Visick symptom evaluation tool and complications graded according to the Dindo-Clavien classification. Captured parameters included patients' demographics, BMI, ASA grade, pre-operative investigations, operating time, indications for surgery, laparoscopic to open conversion rates, re-operation rates, morbidity, and mortality, follow up, and further investigations and interventions. Systematic case per case retrospective note analysis was performed.

Results The first fifty consecutive cases underwent primary sutured cruroplasty and Nissen's fundoplication by or under the direct supervision of the operating surgeon. One patient was abandoned due to inability to access the hiatus and one converted to open for bleeding from the omentum upon insertion of the primary port (both were during the first 25 cases). Three patients suffered with complete post-operative dysphagia, 2 resolved during the first 48 hours and one was converted to Toupet's (they were all during the first 25 cases). On follow up, one patient was re-operated and undone two years following the procedure for continuous epigastric pain with good outcome and one who had belching as a predominant symptom did not derive any symptomatic benefit from the procedure.

Conclusion Laparoscopic antireflux surgery "a reparative procedure" is not a natural extension of laparoscopic cholecystectomy "an extirpative procedure". Different dissecting skills and mastery of intracorporeal suturing and knot tying are necessary for laparoscopic antireflux surgery. The long and steep learning curve can be modified but not eliminated by systematic training and direct supervision during the first 25 cases. Occasional surgical treatment of GORD must be discouraged in order to achieve best possible surgical outcomes.

Disclosure of Interest None Declared

PTU-156 THE COMBINATION OF AUTOFLUORESCENCE IMAGING AND PROBE-BASED CONFOCAL LASER ENDOMICROSCOPY HAS AN EXCELLENT DIAGNOSTIC ACCURACY FOR DYSPLASIA IN BARRETT'S ESOPHAGUS

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Introduction Endoscopic surveillance in Barrett's oesophagus (BO) has major limitations including sampling error due to inconspicuous dysplasia, need for multiple biopsies and subjectivity of pathological assessment of dysplasia. Probe-based confocal laser

endomicroscopy (pCLE) allows real time histological assessment of the esophageal epithelium. However, in the absence of visible lesions, random pCLE is, like biopsies, subject to sampling error. We therefore used autofluorescence imaging (AFI) as a red-flag technique followed by a comparison of different advanced imaging technologies in these areas. The aims of the study were to evaluate the diagnostic accuracy for dysplasia of pCLE and to compare pCLE with narrow band imaging (NBI) for the prediction of the dysplasia.

Methods 27 patients with BO have been recruited at a single tertiary referral centre (non-dysplastic BO n = 9, indefinite for dysplasia n = 2, BO with low grade dysplasia n = 8, BO with high grade dysplasia (HGD) n = 3, BO with intramucosal cancer (IMC) n = 5). Mean BO length was 8cm. AFI positive (AFI+) areas were identified and assessed by NBI-zoom and pCLE, according to previously published criteria. Targeted biopsies were taken from AFI+ areas as well as from random quadrantic locations. Correlation between imaging patterns and histological outcome was analysed in a per lesion analysis (AFI+ areas individually) and per patient analysis (overall histology). Differences between pCLE and NBI were analysed with Fisher's exact test.

Results In the per lesion analysis, sensitivity and specificity of pCLE were 100% and 67%, respectively, for a diagnosis of HGD/IMC and 69% and 78% for a diagnosis of any grade of dysplasia. pCLE had a significantly higher sensitivity for dysplasia ($P = 0.007$) than NBI, but a lower specificity ($p = 0.04$), due to a slightly higher false positive rate. In the per patient analysis the combination of AFI and pCLE had a sensitivity and a specificity of 100% and 47%, respectively for a diagnosis of HGD/IMC, and 100% sensitivity and specificity for a diagnosis of any dysplasia (Table 1). AFI+pCLE did not change the overall patient outcome compared to the Seattle protocol, but allowed identification and correct characterization of 4 additional areas containing HGD/IMC.

Conclusion pCLE can efficiently identify any grade of dysplasia. These preliminary data suggest that the combination of AFI and pCLE allows accurate in vivo diagnosis of dysplasia within BO. A larger study is warranted to determine whether this approach afford the potential to eliminate the necessity for multiple random biopsies during endoscopic surveillance.

Disclosure of Interest None Declared

PTU-157 HER2 POSITIVITY IN UPPER GASTROINTESTINAL TUMOURS IN A LARGE MULTI-CENTRE UK COHORT IDENTIFIES SIMILAR POSITIVITY RATES BUT DIFFERENT TRENDS THAN PREVIOUSLY REPORTED AND SUGGESTS NEW POTENTIAL AVENUES FOR HER2 THERAPIES

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Introduction Evaluation of HER2 status is standard practise for people with inoperable locally advanced or recurrent and/or metastatic adenocarcinoma of the stomach or gastroesophageal

junction (GOJ). HER2 positivity is defined as a histology score of 3+, or 2+ with HER2 gene amplification. This study analysed gastroesophageal HER2 testing in UCL-AD over the past 2.5 years.

Methods All referrals for HER2 testing (n = 844) were reviewed. Data was captured for age (n = 367), sex (n = 320), tumour origin (n = 104), referring lab (n = 768), sample adequacy, HER2 grading (0-3+) and tumour type. Sections were immunostained with the Roche Tissue Diagnostics Pathway HER2 assay. For cases scoring 2+, F/DDISH testing was performed and the turn-around-time (TAT) from receipt to result analysed.

Results Cases were received from 61 labs, mean age 63yo (26-93yo, SD = 13) and the majority were men (71.5%). Specimens originated from oesophageal (OE) (33.7%), GOJ (13.5%), stomach (48%) and UGI metastases (4.8%). The majority (98.7%, n = 833) were HER2-graded. The tumour types were intestinal (INT) (49.6%, n = 257), diffuse (D) (29%, n = 150), mixed D/INT (14.3%, n = 74), carcinoma-in-situ (HGD/IMC) (6.4%, n = 33), squamous (Sq) and adenocarcinoma (ASq) (0.4%, n = 2 each). HER2 scores were 0 (44%, n = 366), 1+ (14.5%, n = 121), 2+ (18.8%, n = 156) and 3+ (22.7%, n = 189). Gene amplification of 2+ cases identified 124 (79.5%) negative, 23 (14.7%) positive and 9 (1.1%) unrecordable results. HER2 positivity (3+/2+&F/DDISH+) was noted in 10% (15/150) of D, 30.4% (78/257) of INT, 13.5% (10/74) of mixed D/INT, 54.5% (18/33) of HGD/IMC and in 50% (1/2) of Sq tumours. A TAT of < 5days was achieved in 97% of cases not requiring in situ, and < 10days in 97.5% requiring F/DDISH.

Abstract PTU-157 Figure

Conclusion Overall HER2-positivity rate was 25.8% in a cohort twice the size of the UK cohort reported in the benchmark ToGA trial. When compared with ToGA, subgroup analysis showed comparable but higher rates in D cancers (10% vs 6.1%), lower in both INT/mixed cancers (30.4/13.5% vs 32.2/20.4%), showed opposite proportions of GOJ/stomach cancers (28.6/31.3% vs 33.1/20.9%), and grouping proximal (OE+GOJ) cancers together, a higher ratio compared to stomach cancers was seen (0.51 vs 0.33). Positivity in

Abstract PTU-156 Table Sensitivity and specificity of NBI and pCLE on AFI positive areas for the overall diagnosis of HGD/EC and any dysplasia in patients with BE

	HGD/EC		p value pCLE vs NBI	Any dysplasia		p value pCLE vs NBI
	AFI+ NBI	AFI+ pCLE		AFI+ NBI	AFI+ pCLE	
sensitivity	83%	100%	ns	64.00%	100%	0.007
specificity	62.50%	47%	ns	75%	100%	ns