

quadrantic biopsies. DNA content abnormalities (aneuploidy/tetraploidy); loss of heterozygosity (LOH) at 9p and 17p loci; RUNX3, HPP1 and p16 methylation; immunohistochemistry (IHC) for p53 and Cyclin A were tested on targeted biopsies. Each biomarker was correlated with the dysplasia and AFI status.

Results 111 patients with 210 biopsy areas were included in the analysis (AFI+, n=120; AFI-, n=90). Univariate per-biopsy analysis showed that all biomarkers correlated with dysplasia ($p < 0.05$), with exception of 9p LOH. Multivariate analysis showed that aneuploidy, p53 IHC and Cyclin A (3 biomarker panel) were independently associated with dysplasia with an AUC=0.93 (95% CI 0.88 to 0.98) for any dysplasia and AUC=0.95 (95% CI 0.89 to 1) for HGD/early cancer (EC). AFI positivity significantly correlated with aneuploidy, p16 methylation, cyclin A and p53 staining ($p < 0.05$). After excluding dysplastic areas, aneuploidy ($p = 0.03$) and p53 ($p = 0.04$) staining retained statistical correlation with AFI positivity. Analysis of the 3 biomarker panel in patients with dysplasia showed significant biomarker enrichment in AFI+ compared to AFI- areas ($p = 0.001$). Finally, 3 biomarker panel was used to predict prevalent dysplasia. Using a cut-off of ≥ 2 biomarkers, the panel when applied to AFI+ areas alone, showed sensitivity and specificity of 88% and 90% respectively for diagnosis of HGD/EC, and 64% and 96% respectively for diagnosis of any dysplasia, compared to overall histology.

Conclusion AFI increases detection rate for molecular biomarkers. A panel of 3 molecular biomarkers on a small number of AFI targeted biopsies can efficiently predict the dysplasia status and potentially inform therapeutic management of patients with BE.

Competing interests None declared.

PTU-193 GASTRO-OESOPHAGEAL REFLUX (GORD) AND COELIAC DISEASE: A BIDIRECTIONAL STUDY

doi:10.1136/gutjnl-2012-302514c.193

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Introduction There are limited data assessing the relationship between coeliac disease and GORD. We aimed to establish the prevalence and nature of GORD symptoms in patients with coeliac disease, and the prevalence of undetected coeliac disease in those presenting to endoscopy with GORD symptoms.

Methods Group A were histologically proven patients with coeliac disease (n=225) who were asked to complete a validated reflux questionnaire and then compared to age/sex-matched controls (n=348). Group B were consecutive GORD patients undergoing endoscopy who had duodenal biopsies and coeliac serology taken. (n=851) Furthermore, patients with newly diagnosed coeliac disease underwent manometry and pH studies prior to commencing gluten free diet (n=33).

Results In Group A the prevalence of GORD was greater in coeliac disease (66%) than in healthy controls (50%) $p = 0.0001$. Coeliac patients also report reflux of greater severity: coeliac disease OR=6.8, 95% CI=3.6 to 12.7, $p \leq 0.001$. In Group B at endoscopy the prevalence of undetected coeliac disease was 1.66% (14/851). In Group C 31/33 were able to tolerate manometry and complete testing (2 had partial investigation before the catheter was removed) At manometry 30/33 (91%) had a normal lower oesophageal sphincter (LOS). 2/33 had a hypotensive LOS. 21/33 (64%) had normal oesophageal motility. However, 10/33 had a hypocontractile oesophagus, 1 was hypertensive and 1 showed functional oesophago-gastric junction obstruction. During manometry 6/31 (19%)

demonstrated significant reflux, 6/31 (19%) had some reflux and the final 19/31 (61%) had no reflux episodes. In these coeliac patients neither the presence of symptoms nor abnormal oesophageal study findings was related to histological grade of coeliac disease, (villous atrophy) or serology findings.

Conclusion Up to two thirds of patients with coeliac disease report reflux symptoms and one third have demonstrable abnormalities of oesophageal motility and reflux. However, in an unselected population at endoscopy, reflux symptoms are not predictive of coeliac disease.

Competing interests None declared.

PTU-194 DOES METABOLIC SYNDROME IMPACT TUMOUR PATHOLOGY IN OESOPHAGEAL ADENOCARCINOMA?

doi:10.1136/gutjnl-2012-302514c.194

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Introduction Obesity is an established risk factor for both the increased incidence of oesophageal adenocarcinoma cancer (OAC), and adverse outcomes by increasing risk of recurrence and reducing survival in obese patients post oesophagectomy. The exact mechanism of this relationship is unclear but the pattern of fat distribution pattern is likely important. Abdominal obesity more closely reflects an increased visceral fat area and is associated with alterations in metabolic risk profile. The clustering of central obesity, hypertension, and raised plasma glucose, triglycerides and HDL cholesterol is also known as the metabolic syndrome (MetS). The processes underlying the metabolic syndrome especially insulin resistance and increased leptin, can provide a favourable growth environment for malignant cells and may have a role in cancer progression.

Methods The aim of this prospective observational study of OAC patients was to examine the incidence of MetS and its relationship to tumour pathology in an Irish population. Patients underwent a metabolic and nutritional assessment prior to initiation of treatment. Visceral fat area was measured using CT scans. MetS was defined according to the International Diabetes Federation definition.¹

Results 83 OAC patients (71 male: 12 female) were recruited with a median age of 64.6 years ± 1.0 (range 48–86). All patients underwent an oesophagectomy, with 42% (n=35) receiving neoadjuvant chemoradiotherapy. 58% of patients were either overweight or obese with a further 60% centrally obese. Males had significantly greater visceral fat area ($p = 0.031$) despite no difference in total abdominal fat compared to females ($p = 0.757$). The incidence of obesity may be underestimated as 41% of patients reported unintentional weight loss with 18% losing $>5\%$ of their usual body weight. MetS was diagnosed in 39% patients, which exceeds the population norms reported at 21%.² The presence of MetS was not associated with tumour length, depth of invasion, lymph node positive disease, clinical or overall pathological stage in males or females. Individual features of MetS were also not significantly related to the pathological staging of oesophageal cancer.

Conclusion We report an increased prevalence of MetS and central obesity in a cohort of Irish patients with OAC. Dysphagia and weight loss are common in the presentation of oesophageal cancer and may mask the effect of obesity and metabolic syndrome on the clinical pathological features of OAC in this cohort. Further research is needed to fully understand the underlying biological mechanisms linking obesity to oesophageal cancer.

Competing interests None declared.

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PTU-195

SIX YEARS OF LAPAROSCOPIC NISSEN'S FUNDOPPLICATION, WAS IT WORTH IT? AN AUDIT OF 100 PATIENTS

doi:10.1136/gutjnl-2012-302514c.195

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Introduction Nissen's fundoplication for gastro-oesophageal reflux disease provides good long term control of acid reflux but is often not without unwanted side-effects. We investigated long term outcome of Nissen's fundoplication at our centre.

Methods Study group included 100 patients who underwent Nissen's fundoplication from 2005 to 2011 at our unit. Pre-operative demographics, symptom profile, investigations and operative data were reviewed. Symptoms after surgery (heartburn, dysphagia, bloating and excessive flatus), antacid usage and patient satisfaction were assessed using a follow-up questionnaire.

Results Average patient age was 47.5 years (19–79 years) with male to female ratio of 57:43. Majority of patients were obese or overweight (79%). Average follow-up was 39 months (3–80 months). Main symptoms included acid reflux (99%), volume reflux (56%) and nocturnal and postural reflux (45%). Gastroscopy revealed hiatus hernia 92%, reflux oesophagitis 71% and Barrett's oesophagus 11%. pH studies and manometry were undertaken in 90% and 93% of patients respectively. Mean acid exposure time was 16.2% (median 13%, range 1.4%–86%), mean symptom index was 79.25% (median 91%, range 1–100%) and mean Demeester score was 50.51 (median 30, range 4.7–291). Lower oesophageal sphincter pressure was normal in 54%, low in 37% and high in 9% of patients with complete relaxation in 91%. No patient had significant oesophageal dysmotility. No routine follow-up pH studies were undertaken. A primary crural repair with 360° short and floppy fundal wrap was constructed on all the patients. Hiatus was prosthetically reinforced on 17 patients (collagen patch 12, mesh 5). Conversion to open surgery was 2% (splenic bleed, difficult anatomy). Four patients required further surgery during follow-up period (severe dysphagia 2, excessive flatus 1, herniation through the wrap 1). Questionnaire responses from 96/100 patients were analysed (postal 56, telephonic 22, clinic review 18). Most patients (81%) were happy to have undergone surgery and would recommend this procedure to a friend (79%). A total of 58 patients (60%) were not on any anti-acid drugs, however 17 patients (18%) were on regular PPIs. Frequencies of post-operative symptoms are detailed below. Overall outcome was described by patients as excellent 43%, good 38%, fair 11% and poor 8%.

Conclusion Majority of patients undergoing Laparoscopic Nissen's fundoplication had good long term control of acid reflux and were happy with their decision to undergo surgery. Wind related side

Abstract PTU-195 Table 1

Symptom/ frequency	Never	Once per month	Once per week	Once per day	Several per day
Heartburn	64	12	4	4	12
Dysphagia	63	8	7	11	7
Flatus	28	0	9	16	43
Gas bloat	42	8	11	20	15

effects are a significant cause for dissatisfaction and must be emphasised during decision making for surgery.

Competing interests None declared.

PTU-196

LONG-TERM RESULTS OF LAPAROSCOPIC HELLER'S CARDIOMYOTOMY FOR ACHALASIA CARDIA

doi:10.1136/gutjnl-2012-302514c.196

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Introduction To review the long-term efficacy of Laparoscopic Heller's Cardiomyotomy in patients with Achalasia Cardia at a large UK District General Hospital.

Methods A structured postal survey was undertaken on 40 consecutive patients with clinical, radiologic, endoscopic and manometric diagnosis of Achalasia Cardia who underwent Laparoscopic Cardiomyotomy by a single surgeon at our unit between 1996 and 2011. The procedure was supplemented by Anterior Fundoplication on all the patients.

Results The average age of the 40 patients in the study group was 49 years (range 18–80 years) with an equal sex distribution. Mean follow-up since surgery was 34 months (3–88 months). Dysphagia scores improved in all the patients (100%). Thirteen patients (33%) had complete remission from dysphagia whereas 24 (60%) experienced occasional dysphagia only. Despite the improvement in dysphagia, three patients (7%) continued to have regular dysphagic symptoms. Although only seven patients (17%) had regular reflux symptoms, fifteen patients (37%) were on regular acid-suppressing drugs. Results were further stratified into excellent (38%), good (37%), fair (25%) and poor (0%), based on a previously described classification.¹ All patients (100%) reported overall improvement in their health-related quality of life as evaluated by relief of gastro-intestinal symptoms (dysphagia and reflux) and patient satisfaction. Patient satisfaction was considerably high largely due to the absence of dysphagia and undeterred by the presence of reflux symptoms.

Conclusion Laparoscopic Cardiomyotomy with Anterior Fundoplication achieves excellent long-term relief from dysphagia for most of the patients with Achalasia. Despite the fundoplication, acid reflux is a frequent post-operative complication. However anti-acid medications minimise its clinical significance.

Competing interests None declared.

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PTU-197

DIAGNOSIS OF GASTRO-ESOPHAGEAL REFLUX DISEASE (GERD) AND PREDICTION OF TREATMENT RESPONSE TO PROTON PUMP INHIBITORS (PPI) BY PROLONGED WIRELESS PH MONITORING: A PROSPECTIVE ASSESSMENT

doi:10.1136/gutjnl-2012-302514c.197

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Introduction Increasing duration of pH studies improves consistency of GERD diagnosis but clinical utility of the method is not established. Aim: (1) to identify measurements from prolonged pH studies that discriminate healthy volunteers (HVs) and GERD patients (2) to compare prediction of PPI response from prolonged and standard measurement.