carried out by two endoscopists (AD, DN). A limited number of endoscopic resections in the early phases were carried out by surgical endoscopists. RFA was done using the HALO 360 or 360 express balloons for circumferential ablation or the HALO 90 or TTS devices for focal ablation. 12 month outcomes for complete response for intestinal metaplasia (CE-IM) were analysed.

Results A total of 49 patients with Barrett's oesophagus related dysplasia were treated, median age 68 years (range 43–85), M:F=3.5:1. 56% patients were current smokers and 15% ex-smokers. 4% patients had a family history of OAC. 52% patients were not obese. 71% pts had a Barrett's segment <8 cm long. 24 pts (52%) had high grade dysplasia, 17 of which were in a Barrett's segment of <8 cm length. Of 22 patients with LGD, only 7 pts had a Barrett's segment of >8 cm. 3/12 pts with LGD were treated by EMR followed by RFA, while 9 pts received RFA alone (the remaining LGD pts were either downgraded or kept on surveillance). In the HGD group, after MDT discussion, 4 pts opted for oesophagectomy, 7 had EMR and RFA and 7 had RFA alone. Post EMR histology confirmed dysplasia in 83%, and intramucosal adenocarcinoma in 5%. CE-IM was achieved in 15 pts (78%) at the end of 1 year, with 2 pts (9%) showing LGD and 1 (4%) showing HGD and 1 indefinite for dysplasia.

Conclusions In this real world analysis of Endotherapy for Barrett's oesophagus in an area of high prevalence of OAC, we have shown that EMR rates are 50% for HGD and 25% for LGD and CE-IM rates of 78% achieved at 12 months. This is comparable to national outcomes, although the EMR rates for LGD are considerably lower.

PTH-123 CHRONIC COUGH AND GORD: THE TIP OF THE ICEBERG?

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Introduction Chronic cough affects 9%–33% of European and US populations.¹ Gastro-oesophageal reflux disease (GORD) has emerged as an important cause,² with high resolution manometry (HRM) and 24 hour pH monitoring a vital diagnostic tool.

Methods We retrospectively audited referrals from respiratory physicians for chronic cough from February 2015–November 2016. 105 patients were referred, with 85 undergoing HRM/pH studies which were performed using Sandhill Scientific equipment.

Results HRM/pH studies showed a mean upper oesophageal sphincter pressure of 34.7 mmHg, with 47% having a hypotensive UOS. Mean lower oesophageal sphincter pressure was 19.1 mmHG, with 33% having a hypotensive LOS. Mean percentage upright oesophageal acid exposure was 5.3%, with 24% having excessive exposure (>6.3%). Mean supine oesophageal acid exposure was 4.4%, with 32% having excessive exposure (>1.2%). The mean DeMeester score was 17.6, with 28% having a positive score (>14.7). See table 1 for full physiology results.

14.3% patients were referred for anti-reflux surgery (ARS) after HRM. 60% had hypotensive UOS, 67% hypotensive LOS, 47% upright acid exposure >6.3%, 60% supine acid exposure >1.2%, 67% DeMeester score >14.7% and 60% positive symptom association.

There were no statistically significant differences between those undergoing ARS and those not for sex, age, BMI or

UOS pressures. However LOS pressure,% upright/supine acid exposure and DeMeester score were significantly different ($p=0.03, <0.01, <0.01$ respectively).

Conclusions GORD is a potentially important cause of chronic cough, affecting 24%–32% of patients by supine/upright acid exposure or DeMeester score. 47% have a hypotensive UOS, suggesting the cough may represent pharyngeal dysfunction and/or non-acid reflux. ~15% underwent ARS, a higher conversion rate than the colorectal 2-week-wait pathway (5%–10%), despite mixed evidence of the effectiveness of ARS for extra-oesophageal manifestations of GORD.^{3 4}

Abstract PTH-123 Table 1

HRM/pH study parameter (normal range/cut off)	Mean (SD)	% positive
UOS pressure (30–118)	34.7 mmHg (28.4)	47% hypotensive UOS
LOS pressure (10–45)	19.1 mmHg (15.9)	33% hypotensive LOS
% upright acid exposure (<6.3%)	5.3% (5.7)	24%
% supine acid exposure (<1.2%)	4.4% (7.6)	32%
DeMeester score (<14.7)	17.6 (20.4)	28%
Symptom association	-	41.2%

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PTH-124 ENDOSCOPIC RESECTION OF EARLY OESOPHAGEAL ADENOCARCINOMA WITH SUBMUCOSAL INVASION: OUTCOMES FROM A SINGLE CENTRE

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Introduction Endoscopic mucosal resection (EMR) for early oesophageal adenocarcinoma (EOA) is an established and accepted therapy with the outcome for cancers invading the submucosal layer (T1b) dependent upon histological risk factors of the malignancy. The aim of this study was to assess the outcomes in patients with T1b EOA in our institution.

Methods We retrospectively assessed all patients who underwent an upper GI EMR from January 2009 to December 2017 using the audit tool of UNISOFT Medical Systems – GI reporting tool (version14). We collected data regarding the histological characteristics from our ICE laboratory reporting system. Patients who were identified as having a T1b EOA were reviewed for their subsequent management and outcome using electronic hospital records and the Somerset Cancer Registry.

Results A total of 333 patients underwent 391 upper GI EMR procedures. Of these, 170 were oesophageal EMR of which 18 had EOA with submucosal invasion. All 18 were male with a mean age of 68.6 years. The EMR was en-block in 4 cases and piecemeal in the remainder. The median number of resections per procedure was 3 (IQR 1–4). The median follow up was 37 (IQR 23–56)

months. No patient had complications of bleeding or perforation. Twelve of the lesions were sub-classified as SM1, 4 as SM2 and 2 as SM3. Further endoscopic and histological characteristics can be seen in table 1. Eleven patients underwent surgical resection following their initial EMR (table 2). Five are still alive, 2 died from metastatic oesophageal cancer (after 7 and 39 months respectively) and 4 died from causes unrelated to oesophageal cancer (34, 44, 58 and 67 months later). Three of the patients who underwent surgery had no residual cancer or lymph nodes found in the surgically resected specimen; one was found to have high grade dysplasia. In the remaining 7 patients not undergoing surgery, 2 were palliated and died 4 and 7 months later. The other 5 patients had either radiotherapy alone (3), chemo-radiotherapy (1) or oesophageal radiofrequency ablation (1) and are all alive to date after a median follow up of 32 (IQR 13–48) months.

Abstract PTH-124 Table 1 Patient characteristics

Oesophageal EMRs reviewed	170
T1b adenocarcinomas	18
Mean Age	68.6
Male sex	18(100%)
Median follow up (months)	37
Enblock resections	4
2 Piece EMR	4
3 Piece EMR	4
4 Piece EMR	4
5 Piece EMR	0
6 Piece EMR	1
7 Piece EMR	1
Clear Deep Margin on EMR sample	5
SM1	12
SM2	4
SM3	2
Well differentiated	3
Moderately differentiated	9
Poorly differentiated	6
Lymphovascular involvement on EMR sample	6
Surgical resections	11
Lymphovascular involvement on Surgical sample	2
Positive Lymphnodes on Surgical Sample	2

Abstract PTH-124 Table 2 Histological characteristics of EMR & subsequent surgical resection

	Number	Surgical resection (%)
SM1	12	8 (66.6%)
Well differentiated	3	1 (30%)
Moderately differentiated	5	3 (60%)
Poorly differentiated	4	4 (100%)
Clear Deep margin on EMR	4	4 (all had LVI +ve)
Lymphatic or vascular involvement	4	4 (100%)
SM2	4	1(25%)
Well differentiated	0	n/a
Moderately differentiated	3	1(33%)
Poorly differentiated	1	0
Clear Deep margin on EMR	1	0
Lymphatic or vascular involvement	2	1(50%)
SM3	2	2(100%)
Well differentiated	0	n/a
Moderately differentiated	1	1(100%)
Poorly differentiated	1	1(100%)
Clear Deep margin on EMR	0	n/a
Lymphatic or vascular involvement	0	n/a

Conclusion The management of patients who are found to have EOA with submucosal involvement needs to be

individualised. The majority of our patients underwent further treatment. Surgical resection revealed no residual tumour in some but metastatic disease occurred in others. Treatment decisions should be taken through a multi-disciplinary approach depending upon the histological characteristics and the comorbidities of the patient.

PTH-125 VARIATION IN THE INVESTIGATION AND DIAGNOSIS OF EOSINOPHILIC OESOPHAGITIS IN DAILY CLINICAL PRACTICE

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Introduction Eosinophilic oesophagitis (EO) is a recognised cause of dysphagia, with an estimated annual incidence of 6–13 cases/100,000 persons. Endoscopic features may be subtle or absent and as such societal guidelines advocate the acquisition of six non-targeted oesophageal biopsies, where a cause has not been identified. We aim to determine whether these recommendations are adhered to in clinical practice.

Methods We performed a database review of all diagnostic OGDs performed to investigate dysphagia or food bolus obstruction, during the 12 month period between 1 st July 2016–30th June 2017 within three large teaching hospitals (Cambridge University Hospital, Sheffield Teaching Hospitals and Nottingham University Hospital). Endoscopy reports were reviewed to determine endoscopic findings. Histology reports were examined to establish the number of biopsy samples received and whether a diagnosis of EO was made.

Results During this time period a total of 25,495 OGDs were performed, of which 4056 (16%) were carried out as part of the investigation of dysphagia. Failed and repeat procedures were excluded leaving a total study population of 3712. An endoscopic diagnosis potentially causing dysphagia was observed in 1286 patients (oesophagitis/ulceration 583 (15.7%), benign stricture 311 (8.4%), malignancy 188 (5.1%) or other causes 156 (4.2%). In the remaining 2468 patients (66.5%) an endoscopic cause of dysphagia was not identified. Biopsies to exclude EO were taken during 923 (37.4%) of these non-diagnostic procedures. A reason for not taking biopsies was documented in 19 cases. The recommended 6 biopsies were received by histopathology in 87 patients. A diagnosis of EO was considered in 42 patients based on endoscopic features, of which 68% went on to be confirmed with histology. During the 12 month period a total of 83 histologically confirmed cases of EO were diagnosed. Endoscopy had a sensitivity and specificity for the diagnosis of EO of 33.7% and 96.8% respectively. Physician endoscopists were more likely take biopsies, acquiring these in 46.4% of procedures where this would be appropriate, compared to surgical endoscopists who took these in 13.3%. Physicians consequently diagnosed 77 (93%) of confirmed cases.

Conclusions This study demonstrates variable adherence to recommendations for the investigation of EO. The hospitals included serve a combined population of approximately 3.2 million, giving rise to a below expected incidence of 2.6 cases per 1 00 000 per year

PTH-126

NEOPLASIA PROGRESSION IN BARRETT'S OESOPHAGUS WITH BASELINE LOW-GRADE DYSPLASIA UNDERGOING RADIOFREQUENCY ABLATION

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Introduction Barrett's oesophagus (BO) with low-grade dysplasia (LGD) can progress to high-grade dysplasia (HGD) and oesophageal adenocarcinoma (OAC). For this reason confirmed LGD has been recently approved by NICE as an indication for radiofrequency ablation (RFA). We aimed to evaluate the progression rate among LGD patients undergoing RFA and thus corroborate the importance of the ablative treatment in this scenario.

Methods Review of the RFA database in a tertiary referral centre over the period 2008–2018 was done. Demographics, BO characteristics and RFA treatment features were collected and included for analysis. Patients with an indication for RFA other than BO with LGD were excluded. Only endoscopies done during the RFA or exit-biopsies period were taken into consideration.

Results 41 patients were included for analysis: 31 males (75.6%), mean age 66(SD=10), median BO length 6.6 (SD=3.2). In 34 patients (82.9%) LGD was detected through random biopsies and was confirmed by 2 expert pathologists within an interval of 6 months. 7 patients (17.1%) presenting a visible lesion were diagnosed following endoscopic mucosal resection (EMR).

11 patients (26.8%) completed the RFA treatment with a median number of 2.5(SD=1) sessions achieving complete eradication of dysplasia and intestinal metaplasia. 1 patient (2.3%) abandoned the treatment after developing severe comorbidities. 12 patients (29.2%) who finished the RFA were awaiting exit-biopsies and 17 (41.4%) still continuing ablative treatment.

LGD progression was detected in 4 patients (9.75%) with 3 confirmed cases of HGD and one OAC. The median time for progression was 16.7(SD=4.5) months since the confirmed diagnosis. The most common location was the gastro-oesophageal junction, GOJ (75%). 3 of these cases, including the OAC, presented with a visible lesion and were treated endoscopically (2 EMR; 1 endoscopic submucosal dissection, ESD). 2 additional RFA sessions were applied to the GOJ progression presented as non-visible lesion.

Conclusions The progression rate among BO patients with confirmed LGD undergoing RFA in our series was 9.75%. This data emphasises the high risk of progression presented by this subgroup and supports its indication for ablative treatment.

Abstract PTH-126 Table 1 Baseline characteristics of the patients with progression

Case	Age	Sex	BO length (cm)	Visible lesion pre-RFA	Number of RFA sessions
1	71	F	4	Yes	2
2	47	M	11	Yes	2
3	80	M	2	No	2
4	79	M	2	No	2

Abstract PTH-126 Table 2 Appearance and treatment of each progression case

Case	Treatment stage when detected	Time-interval to progression	Location	Visible lesion	Histology	Treatment
1	Exit biopsies	18mo	GOJ	Yes	HGD	EMR
2	RFA	19mo	Tubular oesophagus	Yes	IIGD	EMR
3	Exit biopsies	20mo	GOJ	No	HGD	RFA
4	Exit biopsies	10mo	GOJ	Yes	OAC	ESD

PTH-127

STUDIES OF SALIVARY PEPSIN IN PATIENTS WITH REFLUX DISEASE

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Introduction Salivary pepsin has been proposed as a non-invasive diagnostic marker of reflux disease but results have been conflicting. Our aim was therefore to study the optimal timing of salivary sampling.

Methods Asymptomatic volunteers and patients with reflux symptoms being considered for antireflux surgery were studied by structured questionnaire, oesophageal pH (modified to alarm with proximal reflux events), HRM, oesophageal impedance and multiple timed salivary samples after reflux symptoms, when the proximal reflux alarm was activated, on rising and after the evening meal. After an initial pilot, utilising only Peptest analysis, samples were coded and split for analysis by Peptest and in-house ELISA.

Results Twenty volunteers (6 males, aged 21–56 years) and thirty patients (18 males, aged 20–72 years) were studied. Volunteers had normal acid exposure (1.0, 0–3.5%) and impedance values. Patients had increased acid exposure (7.3, 0.2–39%) and 23 had values in excess of the normal range and were classified as true reflux. A further three had significant non-acid reflux and the final four were excluded from further analysis. In patients with true acid reflux, 20 reported symptoms during the 24 hour period and in 12 the proximal reflux alarm was triggered.

Peptest analysis of 276 samples from the 20 volunteers revealed detectable levels in 102 samples (37%). 75% of volunteers had at least one positive sample (range 1–18). Peptest analysis of 458 samples from patients with true reflux revealed positive results in 41% of samples. 84% of patients had at least one positive result. The indirect ELISA of samples from volunteers revealed detectable levels in 87%. All volunteers had at least one positive sample. ELISA of samples from patients with true reflux revealed positive results 79%. All patients had at least one positive result.

Peptest gave a significant difference in concentration between the control and reflux groups, but with controls giving the higher readings (t-test, $p < 0.01$). In contrast, there was no significant difference in the average ELISA score for pepsin concentration in each group. Peptest quantitations were not significantly different between patients and volunteers on rising but were significantly lower in patients post-prandially ($p < 0.05$). Peptest results showed no difference in salivary pepsin following the reflux alarm and symptomatic individuals having lower values than volunteers.

Conclusions Salivary pepsin does not discriminate between volunteers and patients with reflux disease. Furthermore, we demonstrate inconsistencies between an in house validated ELISA for salivary pepsin and commercially available Peptest.