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Prevalence of Eosinophilic Esophagitis Among World Trade Center (WTC) Rescue Workers

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Background: Eosinophilic Esophagitis (EE) is increasingly recognized among adults who present with either persistent heartburn or dysphagia, and has been associated in animal models with inhaled allergens. Many patients participating in the World Trade Center (WTC) rescue effort have increased exposure to aeroallergens. In our experience, in this group of patients, the prevalence of EE is higher than those patients with similar symptoms who do not have a similar exposure history. The aim of this study is to describe our center's experience, and to highlight relationships between EE and exposure in affected workers. Methods: Retrospective chart review of 45 patients, referred for GI evaluation for refractory heartburn between January 2007 and October 2008 from the New Jersey WTC monitoring program, was performed. Results: Most of the patients were male with an average age of 49 (95% CI 47.16-51.82) and a BMI of 27.77 (95% CI 28.61-30.94). 20 patients were on inhaled steroids and 3 were on oral prednisone. Of the 45 patients, 27 underwent EGD, 25 had endoscopic abnormalities of which 17 had significant esophageal findings on biopsy summarized as below (table 1). Only 4 patients had GERD before 9/11, 3 of whom were previously on PPIs. Of the 41 cases of new-onset GERD, 11 had complaints of dysphagia; 2 of these patients subsequently had documented EE. 3 cases of biopsy-proven EE were identified among the 45 referred rescue workers, yielding a prevalence of 6.67%. In our cohort all three patients developed GERD symptoms after participating in the relief efforts. Conclusions: The prevalence of EE in our study population appears to be 13-fold higher than the prevalence seen in a recent study of 74,162 general GI referrals, with a majority having heartburn symptoms. In our study a majority of patients (62.96%) undergoing EGD had significant esophageal findings. Exposure to aeroallergens such as in the WTC incident may be associated with increased prevalence of EE and endoscopic/pathologic abnormalities. In patients with appropriate symptoms and exposure history, this data suggests that EGD with biopsies should be considered. More detailed research, with multi-center collaboration across the 6 WTC monitoring program sites including geographic comparison, is warranted to confirm the results of this pilot study.

Table 1EGD / Biopsy Findings

Eosinophilic Esophagitis	3/27 (11.11%)
Candideal esophagitis	2/27 (7.40%)
Esophagitis	9/27 (33.33%)
Barrett's Esophagus	3/27 (11.11%)
Normal	2/27 (7.40%)

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Cryotherapy As a Palliative Measure in Patients with Esophageal Adenocarcinoma

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Background: Although there are a wide variety of techniques for palliation of esophageal neoplasia, none are ideal in terms of eliminating dysphagia without producing free reflux or pain. Endoscopic cryotherapy ablation using low pressure liquid nitrogen spray is a new technique for the treatment of malignant conditions of the esophagus. Aim: To assess our single tertiary referral center's clinical experience using this modality in the management of esophageal malignancy. Methods: All patients who had cryotherapy ablation for esophageal carcinoma treated at the Mayo Clinic using a prospectively maintained database were identified. They all had a diagnosis of either esophageal adenocarcinoma or gastric junctional cancer. Patients were treated whenever they became symptomatic or at least at twelve week intervals. Treatment was rendered by first placing a suction catheter for removal of air. The target lesions were then cryo-sprayed four times for fifteen seconds of freezing time each. Larger lesions were treated in more than one application to encompass the entire lesion. Esophageal strictures were dilated on an as needed basis. Patients were encouraged to call back with any complications. Results: Twenty-one cryotherapy treatments were performed between June 2007 and November 2008 in eight patients (six males). Median age was 73 years (range 59-92 years). Median length of esophagus treated was 5cm (range 3-12 cm). Median number of treatments was 2 (range 1-4). Diagnoses were Barrett's esophagus with neoplasia (5), invasive adenocarcinoma (2), (T3N0M0, T3N1M0) and stage 2 gastric adenocarcinoma (1). No patient had prior surgery. All the patients had undergone prior endoscopic therapies with endomucosal resection and some with photodynamic therapy. Two patients with invasive adenocarcinoma had undergone prior radiation and chemotherapy. Median duration of palliation was 12 weeks for reported patients including for both patients with adenocarcinoma. One patient with Barrett's did not require repeat treatment for 7 months. No serious adverse events or side effects were reported. Patients only required standard conscious sedation for therapy and no complications occurred during treatment. Conclusion: Endoscopic cryotherapy ablation using low pressure liquid nitrogen spray appears to be safe and well tolerated in this small series. The degree of palliation is apparently more prolonged than other intraluminal methods.

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Efficacy of Pre-Treatment Biopsies in Predicting Final Histopathology of Endoscopically Resected Early Malignancies in the Upper Gastrointestinal Tract

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Background: Endoscopic resection (ER) is an efficient and valuable treatment option for early mucosal well differentiated neoplastic lesions in the upper gastrointestinal tract (Pech 2008). Treatment algorithms are very often based on pathological findings from endoscopically obtained biopsies, however the diagnostic reproducibility of these are not as good as for ER specimens (Mino-Kenudson 2007). The current study aimed to correlate prospectively pre-ER pathological findings to the final pathological diagnosis obtained from the ER specimen. Methods: ERs from the upper GI tract were prospectively registered in a database between 2006 and November 2008. ERs were performed using the cap technique or a multiband mucosectomy device in the stomach and the esophagus, or by the lift and snare technique in the duodenum. The worst pathology known from biopsies from neoplastic lesions before ER was compared to the histology of the ER specimen. All biopsies and ER specimens were reviewed by at least two pathologists with specialized expertise in gastrointestinal pathology. Results: We studied the histology of 100 consecutive ERs in the upper GI tract. ERs were performed in squamous esophagus (4), in Barrett's esophagus (63), in the cardia (6), in the stomach (19) and in the duodenum (8). The final diagnosis included: 4 squamous cancer of the esophagus, 1 columnar lined esophagus, 6 intestinal metaplasia (Barrett), 13 low grade and 13 high grade Barrett's dysplasia, 30 Barrett's adenocarcinomas, 4 adenocarcinomas in the cardia, 4 gastric adenocarcinomas, 12 gastric tubular adenomas with high(6) or low grade dysplasia(5) and 8 tubular adenomas in the duodenum (1 high grade). The overall accuracy of pre-ER biopsies in predicting final histology was 61%. 21% of the lesions were upgraded to a worse pathology. 16 of these 21 lesions were upgraded from low or high grade dysplasia to mucosal cancer or even submucosal cancer. The majority of these lesions (63%) were clearly visible as slightly elevated or depressed lesions: 7 type IIa, 1 type IIc, 2 type IIa-c and 1 type Is lesions. Remarkably, all pre-ER biopsies in Barrett's that were classified as high grade dysplasia with suspicion of carcinoma could be formally classified to either dysplasia (3) or carcinoma (2) after staging ER. Finally, 18% of the lesions were downstaged to a more benign final pathology. Conclusion: Endoscopically prelevated biopsies only moderately predict the final diagnosis after endoscopic resection. Reassuring histology in the presence of small visible early lesions should therefore be considered as an indication for staging ER to obtain a final histological diagnosis.

W1400

Marked Variability in the Endoscopic Diagnosis of Barrett's Esophagus Using Japanese and Western Criteria

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Introduction: It is important to recognize and diagnose Barrett's esophagus (BE) with or without dysplasia, such that appropriate surveillance and interventions can be carried out. Recognition of the esophageal gastric junction (EGJ) is the basis for the diagnosis of BE. In Japan, the distal end of the lower esophageal palisade vessels (PV) is used to define the EGJ. However, in Western countries, the EGJ is defined as the proximal margin of the gastric folds (GF). We aimed to compare the endoscopic diagnosis of BE using the PV and the GF as a land mark of EGJ. Material and Method: We prospectively enrolled patients at a single US center who were referred for routine diagnostic esophagogastroduodenoendoscopy. Prior to the study initiation, a Japanese endoscopist formally demonstrated the endoscopic features of end of the palisade vessels and their detection technique. Six American endoscopists performed the endoscopic assessment, and recorded the location details of the PV, GF and BE. We assessed the recognition rates of the EGJ and the detection rates of BE, first by using the PV and later using the GF as a land mark of EGJ. Result: Over a six week period, we examined 82 patients. The mean patient age (SD) was 64.5 (14) years. The patients were primarily men (91%; n=73); with the majority (76%; n=62) being Caucasian and the minority (4%; n=3) Hispanic. Identification rate of EGJ was 87.8% (72/82) using PV and 97.5% (80/82) using GF. 28.0% (23/82) in cases were endocopically diagnosed as BE by PV (PV-BE cases) and 17.0% (14/82) by GF (GF-BE cases). The concordance rate for the detection of BE endoscopically was 68.3% (56/82). Reflux esophagitis was detected in 30.5% (25/82). We could not identify the EGJ due to esophagitis in 7 cases by using PV and in 2 cases using GF. BE (less than 1 cm) was identified in 73.9% (17/23 PV-BE cases) and 57.1% (8/14 GF-BE cases), respectively. Discussion: We showed different ratios in the endoscopic detection of BE based on the lack of a standard identification of