and chest pain (57%). All adverse events resolved spontaneously without intervention.

**Conclusion:** In this study, endoscopic full-thickness plication using two serially placed Plicator implants was both safe and effective in reducing esophagitis, GERD symptoms, GERD medication use, and esophageal acid exposure. When compared to previous studies using a Plicator single implant technique, the Plicator multiple-implant technique demonstrates a similar safety profile and superior efficacy.

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Are There Differences in Sensitivity Thresholds to Balloon Distention in the Upper and Lower Esophagus?
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**Purpose:** The proximal and distal esophagus are different with respect to musculature type, structure, innervation, and gradient of calcium channels and nitric oxide concentration. Our aims were: 1) To verify that an improved method of measuring the placement of the balloon catheter does not alter balloon sensitivity parameters, 2) To assess symptoms provoked by barostat balloon distention of the upper and lower esophagus and 3) To compare sensitivity thresholds to balloon distention in the upper vs lower esophagus in normal subjects.

**Methods:** Subjects were randomized to 2 esophageal barostat sessions, performed within a 7-d period. After manometry (using traditional or new measuring technique), subjects underwent Barostat balloon distentions at 5 ml increments at 5 cm above the LES, and 3 cm below the UES. 1st sensation, 1st discomfort, and max pain (request to terminate) were determined, with symptoms also collected. Means were generated and a paired 2-tailed T-test was performed ($P < 0.05$).

**Results:** Data were analyzed from 21 subjects (13 f, 8 m; mean age 27.6 yrs). There were no differences in balloon sensitivity thresholds between sessions (traditional vs new measuring technique) ($P > 0.05$). 1st sensation and 1st discomfort were significantly lower in the proximal vs distal esophagus ($P < 0.05$). Max pain was not different between esophageal regions (traditional method: 33.6 ml distal vs 25.7 proximal, $P = 0.18$; new method: 33.6 ml distal vs 28.6 ml proximal; $P = 0.44$). Distal esophageal balloon distention produced chest discomfort in 20/21 subjects, chest tightness in 11/21, and fullness in 9/21 subjects. In the upper esophagus, chest discomfort was most common (18/21), with chest tightness (14/21) and chest pain (11/21) also produced. Cough was produced in 5/21 subjects in the upper and lower esophagus; burning was produced in 8/21 subjects in the lower and 9/21 subjects in the upper esophagus.

**Conclusion:** Sensitivity thresholds are repeatable and were lower in the proximal vs distal esophagus. Balloon distention produced numerous symptoms, although unfamiliar, in this normal group, the most prominent of which was chest discomfort. Cough and burning were also produced by esophageal balloon distention in the upper and lower esophagus in this normal group, suggesting neurologic reflex pathways are independent of pathologic reflex.

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High Cortisol Levels Are Correlated to Low Esophageal Pain Threshold to Balloon Distention in Patients with NERD and Functional Heartburn
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**Purpose:** The relationship between serum cortisol and visceral pain varies dramatically in published studies. In patients with functional GI disorders (FGID), symptoms are often absent during the night when cortisol is low. However, patients with FGID and low awakening cortisol reported the greatest pain (Ehlert 2005). Rectal balloon distention in patients with IBS vs chronic constipation (CC) vs controls (C) indicated IBS patients had the lowest sensory thresholds than CC and C (Walker et al., 2006). Our aims were: 1) To describe the relationship between serum Cortisol and maximum tolerable pain to balloon distention of the esophagus in patients with functional heartburn (FxHB), 2) To compare cortisol, ACTH, and balloon sensitivity parameters in functional heartburn vs NERD.

**Methods:** 26 patients underwent esophageal balloon distention with MTD (volume and corresponding mean and maximum pressure). 14 patients fit criteria for FxHB and were assessed on 4 occasions (N = 56). 12 patients fit criteria for NERD and were assessed once (N = 12). Blood samples for serum cortisol and ACTH were collected within 90 min prior to balloon distention. Regression analysis was performed between maximum tolerable pain (ml of balloon volume and corresponding mean and maximum mmHg pressure at MTD) and serum Cortisol levels (ug/dl), and between Cortisol and ACTH levels (pg/ml). Parameters were compared via t-test ($P = 0.05$ level of significance).

**Results:** There were no differences between FxHB and NERD in mean Cortisol (11.6 vs 9.8 mg/dl), mean ACTH (17.5 vs 16.4 pg/ml), or mean sensitivity parameters (22.7 vs 19.2 ml balloon volume; 29.3 vs 28 mmHg mean pressure; 48.9 vs 41.5 mmHg max pressure; all $P > 0.05$). Therefore all patients were grouped together (N = 68 observations). MTD volume approached significance related to cortisol levels ($P = 0.07$); however, mean pressure at MTD was significantly and inversely related to serum cortisol level ($r = 0.50$; $P = 0.0012$). Maximum balloon pressure at MTD was also significantly and inversely related to cortisol level ($r = 0.31$; $P = 0.01$). As expected, Cortisol and ACTH were significantly related ($r = 0.60$. $P = 1.8 \times 10^{-6}$).

**Conclusion:** Overall, higher cortisol levels were significantly related to lower pain threshold to esophageal balloon distention. The significant positive relationship between ACTH and Cortisol indicate that patients had an intact HPA axis. These data imply that adrenal function may play a role in functional GI disease.

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The Prevalence of Barrett’s Esophagus in Patient with or without GERD Symptoms
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**Purpose:** The incidence of adenocarcinoma of the esophagus is rising rapidly in US, presumably because of the prevalence of intestinal metaplasia of the esophagus (Barrett’s esophagus). Millions of Americans have chronic GERD symptoms, and it is still controversial whether to screen these patients with endoscopy in order to identify Barrett’s esophagus.

**Methods:** We searched the PENTAX EndoPRO database for the Endoscopy Unit at the University of Texas Medical Branch. We divided the patients into 2 groups: 1) Patients screened because of chronic GERD symptoms. 2) Patients undergoing upper endoscopy for other reasons. Patients with known Barrett’s esophagus were also noted. Patients were determined to have Barrett’s esophagus if salmon colored mucosa typical of specialized columnar epithelium was described above the gastroesophageal junction. The length of the Barrett’s esophagus in this study was reported from 2 cm to 12 cm.

**Results:** There were a total of 5019 EGD’s in 4500 patients in our data base from August 2005 to May 2007. 410 patients underwent upperendoscopy because of GERD symptoms that were not responding to PPI therapy. 153 patients were male and 257 patients were female. 27 patients were found have Barrett’s esophagus (6.5%). Among the 27 patients with Barrett’s esophagus, 17 patients were male and 10 patients were female. No significant age difference in this group was found between patients with and without Barrett’s esophagus (51.9 ± 11 vs. 53.9 ± 13).