Purpose: A novel full-thickness plication device (Plicator, NDO Surgical, Inc., Mansfield, MA) has been designed to inhibit gastroesophageal reflux by placing a transmural plication near the gastroesophageal (GE) junction under direct endoscopic visualization. The resulting serosa-to-serosa tissue union appears to accentuate and restore the valvular mechanism of the gastroesophageal junction. The purpose of this study was to assess the safety and efficacy of a novel endoscopic full-thickness plication device for the treatment of patients with symptomatic GERD.

Methods: Patients with chronic heartburn and pathologic reflux requiring maintenance anti-secretory therapy were recruited. Patients with large hiatal hernias (> 2 cm), grades III and IV esophagitis, and Barrett’s esophagus were excluded. The following were assessed at baseline (on and off-meds) and 1-year post-plication: GERD-HRQL, GRSRS, SF-36 questionnaires, and medication use. Additionally, 24-hr pH-metry and manometry were measured at baseline, three-months (pH/manometry) and six-months (pH only) post-plication. All patients received a single, endoscopic full-thickness plication in the gastric cardia within 2cm of the GE junction.

Results: Sixty-four patients (mean age 46.3, range 23–71) underwent endoscopic full-thickness plication (mean procedure time = 17.2 min). No re-treatments were performed. One year post-plication (n = 56), median off-meds GERD-HRQL scores improved 65% (19.0 vs. 6.0) and were superior when compared to patients’ baseline on-meds HRQL scores (13.0 vs. 6.0). In 24-hour pH-metry studies conducted at six-months post-procedure (n = 35), median % time pH < 4 decreased 31% with 30% of patients experiencing a normalization of pH at 6-months. No significant change in esophageal manometry was noted. Upon entry, 59/64 patients required daily proton-pump inhibitor therapy. At one-year post-procedure, 37/53 patients (70%) remained off daily PPI therapy. The most common adverse event was sore throat (41%), spontaneously resolving within several days post-procedure. A complete adverse event profile will be discussed.

Conclusions: In this study, a single full-thickness plication placed at the GE junction reduced symptoms, medication use and esophageal acid exposure associated with GERD.

VERRUCCOUS CARCINOMA OF THE ESOPHAGUS: A WOLF IN SHEEP’S CLOTHING

Purpose: Fifteen cases of verrucous carcinoma of the esophagus have been reported in the English literature. It is a slow growing epidermoid neoplasm that is commonly found in the oral cavity, larynx, and genitalia. It is indolent and associated with a high mortality. Discrepancy between its clinical and histologic character often leads to delayed diagnosis. We present a typical case to emphasize that a high index of suspicion is the key to proper diagnosis and treatment.

A forty-three year old man presented to the ER with two months of solid food dysphagia, heartburn, and a twenty pound weight loss. He drank a six-pack of beer daily and had a 40 pack/year tobacco habit. No significant physical findings were noted. HIV serology was negative. A barium esophagram demonstrated a markedly abnormal mucosa in the distal third, consistent with an inflammatory process.

When he finally presented to the GI clinic, three months later, the dysphagia had progressed such that any solid food per os was forcibly regurgitated. At endoscopy, the distal third of the esophagus appeared circumferentially encrusted with a shaggy, whitish plaque extending to the GEJ. The pathology report showed only mild acute and chronic inflammation. The patient was lost to follow-up.

Seven months following his initial presentation, his dysphagia had marginally improved. He underwent endoscopy with brush biopsy. There was no endoscopic improvement and the histology was notable only for poorly-preserved and highly atypical squamous cells. The discrepancy between the histologic findings and the clinical signs was debated and ultimately led to a third EGD. The pathology from the third investigation was more distinctive showing hyperkeratotic verrucous squamous mucosa suggestive of squamous papilloma (spike form) with pseudoepitheliomatous hyperplasia. The abruptly more redolent histologic description suggested sampling error. The error related to the fourth endoscopy, in the 11th month, was similarly benign. Nonetheless, the patient was referred to surgery and received a complete esophagectomy which showed well-differentiated, invasive carcinoma.

Routine endoscopic biopsy is frequently inadequate to make the diagnosis of verrucous carcinoma of the esophagus due to its benign appearance and well differentiated histology. A high index of suspicion and close clinical follow-up are vital for making an early diagnosis. EUS is likely to contribute substantially to making the diagnosis earlier and perhaps will have impact on survival.

ESOPHAGEAL FUNCTION TESTING USING BOTH LIQUID AND VISCOS SUBSTANCES: PROVIDES GREATER POTENTIAL TO DETECT ABNORMALITIES
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Purpose: Traditional esophageal function testing includes esophageal manometry using liquid (water) swallows. Adding viscous (semisolid) swallows as part of esophageal manometry may provide additional information similar to the “modified” barium swallow.

Methods: We have prospectively performed esophageal function testing using 10 liquid and 10 viscous swallows (5ml each) in 341 consecutive patients referred to our laboratory. Studies were reported manometrically normal for either liquid or viscous test substances if there were no more than 20% ineffective and 10% simultaneous swallows, the lower esophageal sphincter (LES) had normal residual pressure during relaxations and distal esophageal amplitude did not exceed 180 mmHg.

Results: 217 patients had an abnormal test result for liquid swallows. Similarly, 242 had abnormal viscous swallows. However, disparate results were found in 53 studies. From the 124 normal studies for liquid swallows 85 (69%) satisfied normality criteria for viscous swallows. From the remaining studies 21 were classified as showing ineffective esophageal motility (IEM), 10 as poorly relaxing LES, 7 distal esophageal spasm and one nutcracker esophagus for viscous swallows. On the other hand 14 abnormal studies for liquid swallows (6 IEM, 4 nutcracker esophagus, 1 DES, 3 poorly relaxing LES) fulfilled normality criteria for viscous swallows.

<table>
<thead>
<tr>
<th>Normal liquid</th>
<th>abnormal liquid</th>
<th>total</th>
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<tbody>
<tr>
<td>normal viscous</td>
<td>85</td>
<td>14</td>
</tr>
<tr>
<td>abnormal viscous</td>
<td>39</td>
<td>203</td>
</tr>
<tr>
<td>Total</td>
<td>124</td>
<td>217</td>
</tr>
</tbody>
</table>

Conclusions: Adding viscous swallows to traditional water swallows may increase the sensitivity of manometry to detect abnormal esophageal motility. Outcome studies are required to assess the value of the additional information provided by viscous swallows.

SALIVARY PROTECTIVE POTENTIAL IS SIGNIFICANTLY ENHANCED BY STIMULATION INDUCED BOTH BY MASTICATION AND ESOPHAGO-SALIVARY REFLUX: ITS CLINICAL SIGNIFICANCE
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