Novel approach to endoscopic submucosal dissection of a large gastroesophageal junction mass by use of the mucosal bridge technique

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Endoscopic submucosal dissection (ESD) has become an established treatment modality for dysplastic and early cancer lesions throughout the GI tract.[1,2] Adequate visualization of the dissection plane is key for an effective and safe procedure. Although this is most commonly achieved by traction provided by a distal attachment cap at the end of the endoscope, this approach may not generate the tissue tension required for the resection of certain lesions. Therefore, alternate traction methods have been described and evaluated.[3,4] However, most of these involve the use of additional devices, including clips, strings, or grasping forceps, and can be difficult to use for gastroesophageal junction (GEJ) lesions.[5] These lesions specifically pose a unique challenge because of the narrow lumen at the GEJ, changing angle of the dissection plane, and difficulty in maintaining adequate tension. In this video (Video 1, available online at www.VideoGIE.org), we present a novel approach of advertently leaving a proximal mucosal bridge to assist with traction and facilitate the completion of ESD of a GEJ mass.

A 71-year-old man underwent EGD at an outside hospital for dysphagia and was found to have a 25-mm noncircumferential mass located at the GEJ extending to the lesser curvature and posterior wall of the gastric cardia (Figs. 1A and B). Examination of biopsy specimens revealed well-differentiated adenocarcinoma. He was referred to our facility for further evaluation, where EUS showed only superficial submucosal invasion (T1sm). After multidisciplinary discussions and based on patient preferences, a decision was made to pursue en bloc resection by ESD.

Thermocautery marks were placed 5 mm around the lesion edge with the retracted tip of the Dual Knife (Olympus, Center Valley, Pa, USA). A mixture of 6% hydroxyethyl start in 0.9% sodium chloride (Voluven; Fresenius Kabi, Bad Homburg, Germany) and methylene blue was then injected around the lesion to provide an adequate submucosal lift (Needle Master; Olympus). A mucosal incision was then made with the Dual Knife at the distal aspect of the lesion with the endoscope in the retroflexed position. A nearly complete marginal circumferential incision was then made around the lesion with the IT Nano knife (Olympus). A 4-mm-wide mucosal area (Fig. 2) at the most proximal aspect of the lesion was intentionally preserved. To enter into the dissection plane, the Dual Knife was used to dissect the submucosa at the most proximal aspect of the lesion without disrupting the proximal mucosal bridge. With the bridge generating tissue tension and acting as an anchor, the lateral edges of the dissection plane were easily visualized, and an optimal dissection angle was created for the insulated tip knife. Submucosal dissection was then easily carried out

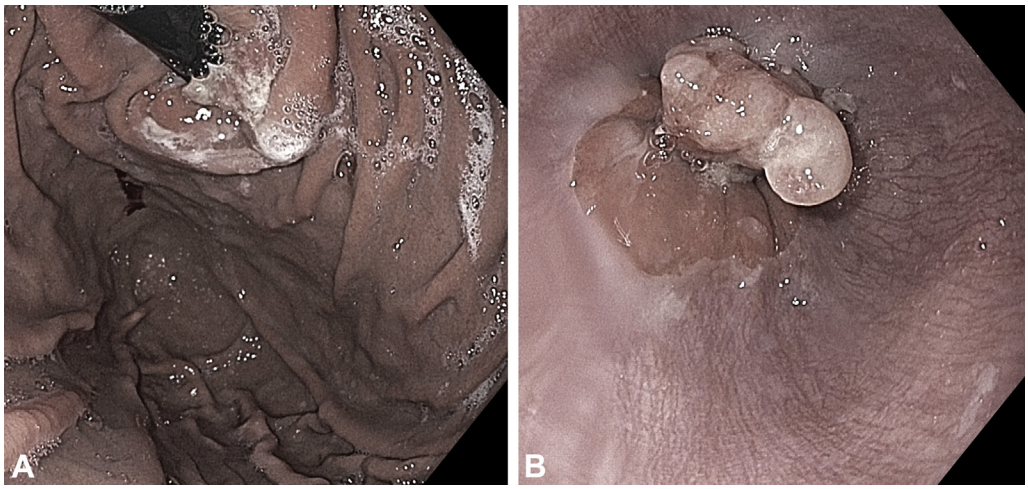

Figure 1. A 25-mm gastroesophageal junction lesion seen in (**A**) forward and (**B**) retroflexed views.

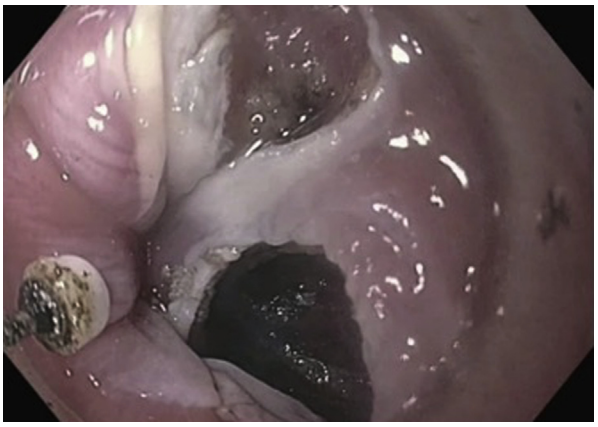

Figure 2. A 4-mm wide mucosal bridge created at the proximal aspect of the lesion.

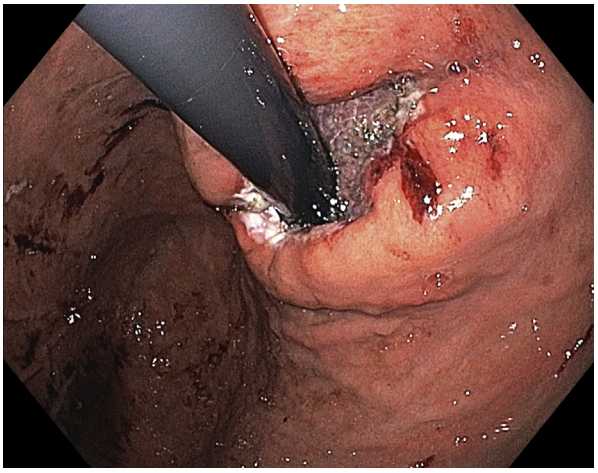

Figure 3. Retroflexed endoscopic image after complete endoscopic submucosal dissection of the lesion.

with the insulated tip knife in the cephalocaudal direction. After the submucosa was fully dissected, the proximal mucosal bridge was finally cut, and the lesion was detached for complete en bloc resection. The resected area measured 35 mm × 30 mm, and the procedure duration was 78 minutes (Figs. 3 and 4). The patient was discharged home, and no adverse events were seen at the 30-day follow-up visit. Final pathologic examination revealed invasive, moderately differentiated adenocarcinoma with superficial invasion in the submucosa with negative deep and lateral margins and no lymphovascular invasion.

This case illustrates how the creation of a thick mucosal bridge at the most proximal aspect of a lesion can help maintain optimal tissue tension during entry into the submucosal plane without the use of additional tools. The bridge technique allows for adequate visualization of the dissection plane and facilitates effective and safe ESD for difficult GEJ lesions.

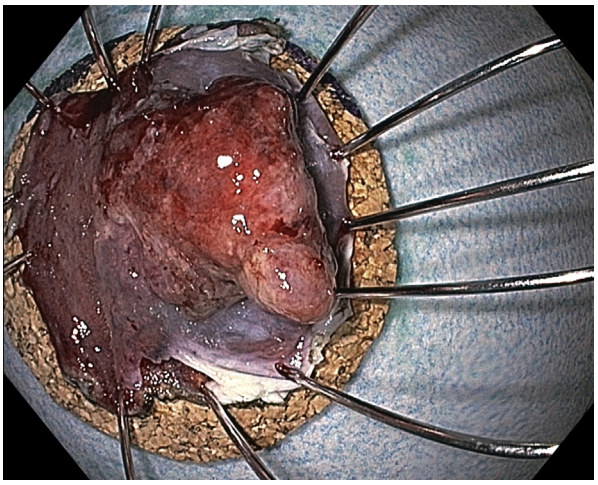

Figure 4. Final en bloc resection specimen measuring 35 mm × 30 mm. Histopathologic examination revealed invasive moderately differentiated adenocarcinoma with superficial invasion into the submucosa with negative deep and lateral margins and no lymphovascular invasion.

DISCLOSURE

Dr Yang is a consultant for Boston Scientific. Dr Draganov is a consultant for Boston Scientific and Olympus. The other author disclosed no financial relationships relevant to this publication.

Abbreviations: ESD, endoscopic submucosal dissection; GEJ, gastroesophageal junction.

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