Modified submucosal tunneling endoscopic resection for the management of a large leiomyoma in the gastric fundus CME

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INTRODUCTION

Submucosal tunneling endoscopic resection (STER) is a direct clinical application derived from the technique of peroral endoscopic myotomy.[1] With STER, a submucosal tunnel is created to provide a working space for the dissection of GI subepithelial lesions (SELs) followed by retrieval of the lesion through the tunnel. Nonetheless, STER has its limitations. Extraction of SELs greater than 3 cm through the submucosal tunnel can be challenging.[1,2] Furthermore, STER can be technically difficult in certain anatomical locations and often requires conversion to exposed endoscopic full-thickness resection for complete excision.[3] In this video, we present a case of a large SEL in the gastric fundus successfully removed endoscopically via a modified STER technique using proximal and distal mucosal incisions to facilitate submucosal dissection and lesion extraction.

CASE

A 61-year-old woman underwent evaluation for dysphagia and reflux. Esophageal manometry, esophagram, and pH study were all unremarkable. On endoscopy, a large SEL was identified at the junction of the cardia and fundus. The patient subsequently underwent EUS for further evaluation of the SEL (Fig. 1). FNA was consistent with a leiomyoma. The patient was concerned that her symptoms were related to the leiomyoma. After multidisciplinary discussion at the institution's tumor board, the decision was to proceed with endoscopic resection.

On endoscopy (GIF-HQ190; Olympus America, Center Valley, Pa, USA), a SEL was identified in the junction between the cardia and fundus immediately below the gastroesophageal junction (Video 1, available online at www.videogie.org). A transverse mucosal incision was made in the distal esophagus, allowing access to the submucosal space to initiate dissection in antegrade fashion (Fig. 2A). Navigating the endoscope and endoscopic submucosal dissection knife (Hybrid I-type; ERBE, Marietta, Ga, USA) beyond the anterior aspect of the lesion was challenging due to the constraint space within the tunnel and natural angulation toward the fundus. As such, the decision was to make a second mucosal incision on the distal aspect of the lesion (Fig. 2B), dissecting in the retroflexed position facilitated scope stabilization within the tunnel and completion of the submucosal dissection in retrograde fashion (Fig. 2C). Once resection was completed, the lesion was easily extracted through this second mucosal incision, obviating the need to remove it through the tunnel into the esophagus. The mucosal incisions were closed with through-the-scope clips (DuraClip; Microtech, Ann Arbor, Mich, USA) (Fig. 2D). The final resected specimen measured 60 × 30 mm in size, and histopathology was confirmatory for a leiomyoma (Fig. 2E). The patient was discharged on postoperative day 2. She was seen in clinic 4 months after the procedure and did not report any delayed adverse events.

The advantage of performing endoscopic submucosal dissection/STER in a retroflexed position for challenging SELs near the gastroesophageal junction has been recently demonstrated.[4] Overall, the modified STER technique introduced in this case offered several advantages: (1) It facilitated dissection around the lesion by using both an antegrade and retrograde approach; (2) the distal mucosal incision allowed extraction of the large SEL, which would not have been feasible via the incision in the esophagus; (3) as opposed to an exposed full-thickness resection, conservation of the mucosal flap by creating 2 separate mucosal incisions allowed for easy closure in an otherwise challenging position.

CONCLUSION

The modified STER technique with proximal and distal mucosal incisions to the SEL enabled resection and extraction of an otherwise large and challenging lesion in the gastric fundus. This technique may be an alternative to conventional STER or exposed full-thickness resection for selected lesions.

Abbreviations: SEL, subepithelial lesion; STER, submucosal tunneling endoscopic resection.

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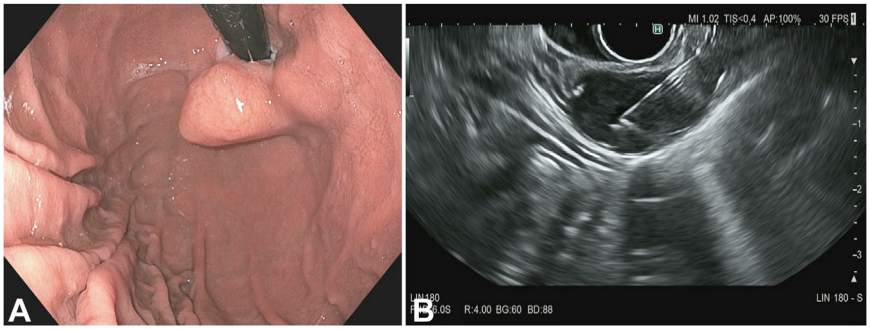

Figure 1. A, Endoscopic view of the subepithelial lesion (SEL) at the gastroesophageal junction in retroflexion. **B,** EUS view of the SEL with FNA.

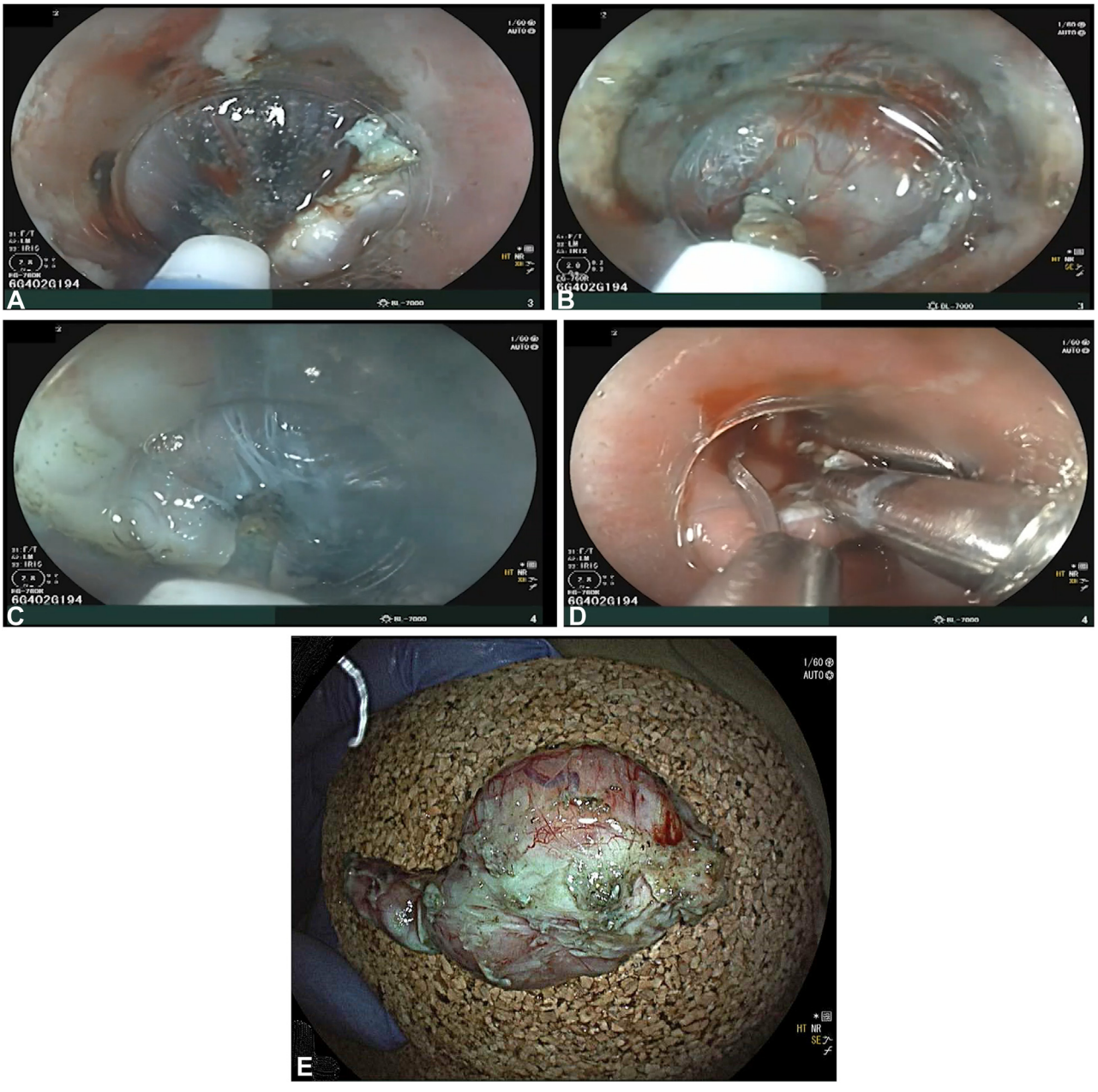

Figure 2. A, Transverse mucosal incision in the esophagus proximal to the subepithelial lesion (SEL) for establishing a submucosal tunnel. **B,** A mucosal incision is made immediately distal to the SEL to allow access in the retroflexed position. **C,** Dissection in retrograde fashion through the second mucosal incision facilitated scope stabilization and completion of the resection. **D,** Mucosal incisions were adequately closed with through-the-scope clips. **E,** Final resected specimen, measuring 60 × 30 mm.

DISCLOSURE

Dr Yang is a consultant for Boston Scientific, Fujifilm, Olympus, Medtronic, Microtech, 3D-Matrix, and Neptune Medical. Dr Yang has received research grant support from 3D-Matrix and Microtech. Dr Draganov is a consultant for Boston Scientific, Fujifilm, Olympus, Medtronic, Microtech, and Cook Medical. Dr Hasan is a consultant for Boston Scientific, Olympus, Microtech, and Neptune Medical. Dr Arain is a consultant for Boston Scientific, Cook Medical, and Medtronic. All other authors disclosed no financial relationships relevant to this publication.

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