

Title:

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Modified submucosal double-tunneling endoscopic resection for treatment of a large esophageal submucosal tumor originating from the muscularis propria

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Case report

A 69-year-old female complained of epigastric pain for 6 months. Esophagogastroduodenoscopy showed a transversal submucosal tumor (SMT) in the lower esophagus (Fig 1A). Subsequently, endoscopic ultrasonography revealed that a hypoechoic echo lesion (25mm*12mm) originated from muscularis propria layer (Fig 1B).

A modified submucosal double-tunneling endoscopic resection (SDTER) was performed. First, esophageal mucosal surface of SMT to 7 cm to the proximal margin of the SMT was marked (Dual Knife, 30 W, effect 3). Second, diluted indigo carmine was injected a fluid cushion and a longitudinal incision of about 5 cm was made to create entry point. Third, double longitudinal tunnels were created between the mucosal and muscular layer and terminated at about 2 cm distal to the SMT, which were separated by a "wall" (Fig 1C) (Dual Knife, 30 W, effect 3). Fourth, SMT was dissected in each tunnel, respectively (Fig 1D) (IT knife nano, 30 W, effect 3). Finally, the "wall" between double tunnels was dissected, retrieved the SMT and closed the tunnel entry point (Fig 1E). Histopathology confirmed a leiomyomas (Fig 1F). The patient was recovered uneventfully.

Discussion

The maximal inner diameter of the tunnel is about 4.0 cm, and it is difficult to dissect the transverse diameter of the SMTs greater than the inner diameter during

STER procedure¹. However, the transverse diameter of the SMT is as large as 4.5 cm in this study. Zhang Q *et al.* study was created the second tunnel in the mucosa over the inferior border of the SMT². Fedorov ED *et al.* study was created the second tunnel in the MP and adventitia³. We considered that these modalities might be invasive and risky. The most advantage of our modality was the pillar-like “wall”, which helped to create double large submucosal tunnels and contributed to feasibly and safely dissect the SMT.

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Conflict of Interest

The authors declare no conflict of interest.

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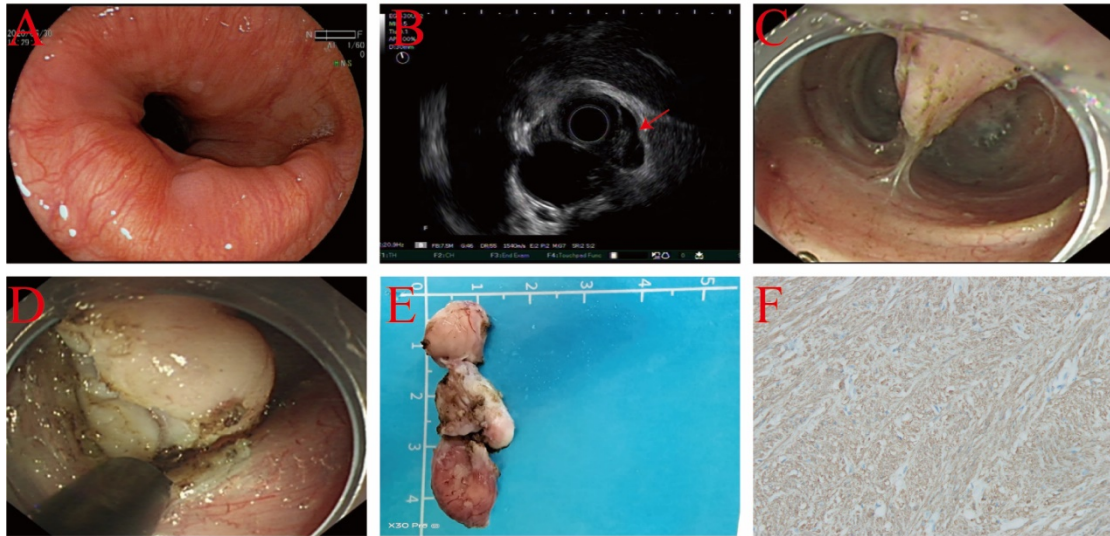


Fig 1: The modified SDTER procedure. A, SMT in the lower esophagus; B, EUS revealed that the hypoechoic echo lesion originated from MP layer; C, Creating double longitudinal tunnels; D, Dissecting the SMT; E, The dissected SMT; F, Immunohistochemistry showed that SMA is positive, whereas CD 117 is negative.

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