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

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Dear Editor,

We report the following case:

CASE REPORT

A 69-year-old female complained of epigastric pain of 6 months’ duration. Esophagastroduodenoscopy showed a transversal submucosal tumor (SMT) in the lower esophagus (Fig. 1A). Subsequently, endoscopic ultrasonography showed a
hypoechoic lesion (25 mm x 12 mm) originating from the muscularis propria layer (Fig. 1B).

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

DISCUSSION

The maximal inner diameter of the tunnel is about 4.0 cm, and dissection is difficult when the transverse diameter of the SMT is greater than the inner diameter during the STER procedure (1). The transverse diameter of the SMT is as large as 4.5 cm in this study. In the study by Zhang Q et al., the second tunnel was created in the mucosa over the inferior border of the SMT (2). In the study by Fedorov ED et al., the second tunnel was created in the MP and adventitia (3). We considered that these modalities might be invasive and risky. The major advantage of our modality was the pillar-like “wall”, which helped to create a double large submucosal tunnel, and contributed to the feasibility and safety of the SMT dissection.
REFERENCES


Fig. 1. The modified SDTER procedure. A: SMT in the lower esophagus; B: EUS revealed that the hypoechoic lesion originated from the MP layer; C: creation of double longitudinal tunnels; D: dissection of the SMT; E: the dissected SMT; F: immunohistochemistry showing that SMA was positive, whereas CD117 was negative.