

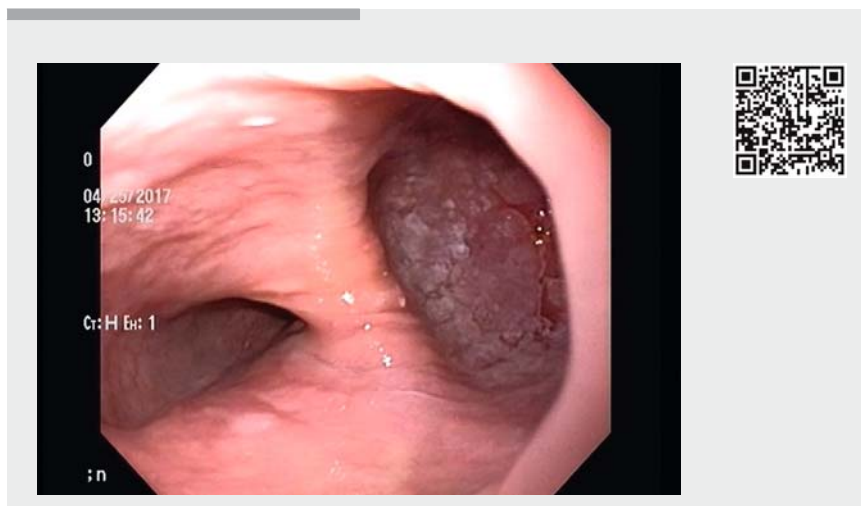
Submucosal tunneling endoscopic myotomy of esophageal epiphrenic diverticulum

Esophageal epiphrenic diverticulum (EED) is an uncommon disease of the distal 10 cm of the thoracic esophagus. This motility disorder is associated with achalasia in over 60% of cases [1]. Large diverticula or those with significant symptoms are cured through diverticulectomy, myotomy, and fundoplication by open or minimally invasive surgical techniques [2]. Recently, Cai et al. reported four patients with EED who were treated by submucosal tunneling endoscopic septum division (STESD) [3]. This video case describes the treatment of EED using this novel technique (► **Video 1**).

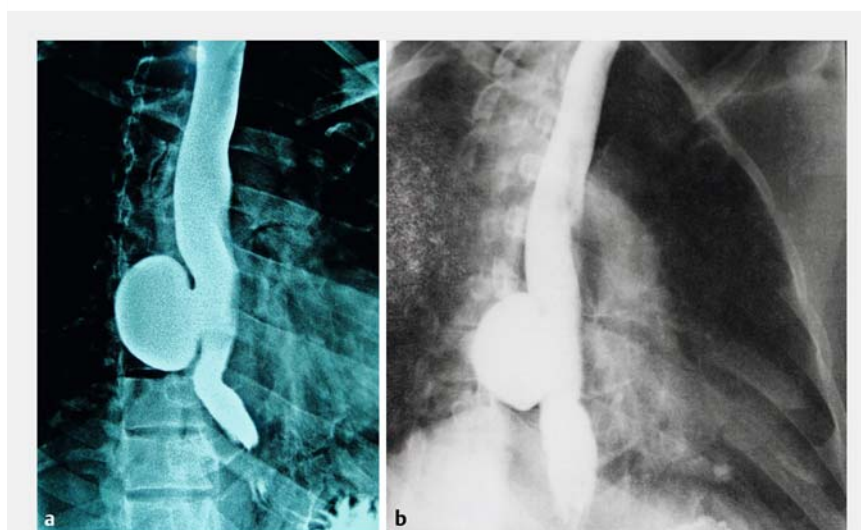
A 52-year-old man who was referred for dysphagia and regurgitation underwent upper endoscopy and esophagogram, both of which revealed a large diverticulum 10 cm above the cardia (► **Fig. 1 a**, ► **Fig. 2 a**). Esophageal manometry showed a hypertonic esophagus.

A gastroscope with cap was used, and after the submucosal injection of methylene blue solution, a 1 cm transverse mucosal incision was made 3 cm proximal to the upper border of the diverticulum using a FlushKnife (Fujifilm, Tokyo, Japan). A submucosal tunnel was made by gentle thermoelectric dissection from the initial opening of the esophagus to the point at which it reached the stomach. The muscular septum was dissected along both sides to create an endoscopic window. Thereafter, the diverticular septum was divided along its entire length, and an extensive and complete myotomy was performed from the septum to the stomach. Finally, a rubber band ligature closed the mucosal incision. Intravenous ceftriaxone (2 g once daily) was continued for 3 days.

The patient experienced thoracic pain and subcutaneous emphysema in the upper chest and neck that resolved after a few days. A chest radiograph revealed a mild left pleural effusion 15 days after the procedure. Symptoms had totally resolved 15 days later.



► **Video 1** The procedure of submucosal tunneling endoscopic septum division and esophageal myotomy from the diverticulum border to the point at which it reached the stomach.



► **Fig. 1** Esophagogram showing the esophageal epiphrenic diverticulum. **a** Before submucosal tunneling endoscopic septum division (STESD). **b** 90 days after STESD.

Despite the complete septum section, imaging revealed an intact diverticulum and severe esophagitis 90 days after STESD (► **Fig. 1 b**, ► **Fig. 2 b, c**). Further studies that include more patients and

have longer follow-up are required to comprehend the role of STESD in the management of EED.

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► **Fig. 2** Esophagoscopy. **a** Before submucosal tunneling endoscopic septum division (STESD). **b** 90 days after STESD. **c** Severe esophagitis 90 days after STESD.

Competing interests

None

The authors

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