Peroral endoscopic myotomy regains anatomical structure and improves emptying for achalasia with multiple esophageal diverticula

Peroral endoscopic myotomy (POEM) is a safe and effective approach for the treatment of achalasia [1]; however, the presence of esophageal diverticula significantly increases the technical difficulty. We hereby present the successful treatment using POEM for a patient with achalasia and concomitant multiple esophageal diverticula. A 74-year-old man was admitted with a history of recurrent regurgitation for 8 years and worsening dysphagia for 1 year. A radiographic contrast study showed four large esophageal diverticula and narrowing of distal esophagus that was typical of achalasia (▶ Fig. 1). High resolution manometry suggested failure of relaxation of the lower esophageal sphincter and the absence of progressive peristalsis. Upper gastrointestinal endoscopy confirmed multiple esophageal diverticula (▶ Fig. 2a) with a dilated esophagus and tight gastro-esophageal junction (GEJ).

POEM was accomplished in four steps (▶ Video 1): mucosal entry, submucosal tunneling, myotomy and division of the septum (▶ Fig. 2b), and mucosal closure. The procedure was accomplished in an operative time of 85 minutes. Post-procedure, the patient developed abdominal pain and fever, which was treated with antibiotics. The patient was discharged on postoperative day 9, by which time his symptoms were greatly relieved, and his Eckardt score had decreased from 8 to 2 at 2-month follow-up. Radiographic contrast studies on postoperative day 8 (▶ Fig. 3) and at 2-month follow-up suggested relaxation of the GEJ and partial normalization of the anatomical structure of the esophagus with improved emptying.

Following myotomy of muscular fibers at the GEJ and the septa of the diverticula, the anatomical structure of the esophagus was normalized to a large extent, thereby improving peristalsis and emptying.
ing of the esophagus. Therefore, we suggest POEM as an effective and safe alternative treatment for patients with achalasia and esophageal diverticula.

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**Competing interests**

None

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**Fig. 3** Radiographic contrast study performed on postoperative day 8 showing some improvement in the diverticula (red arrows) and of the narrowing at the cardia (yellow arrow).