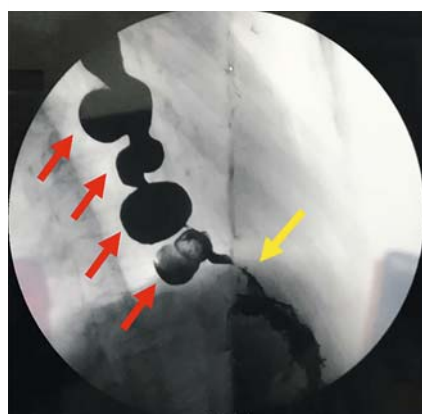
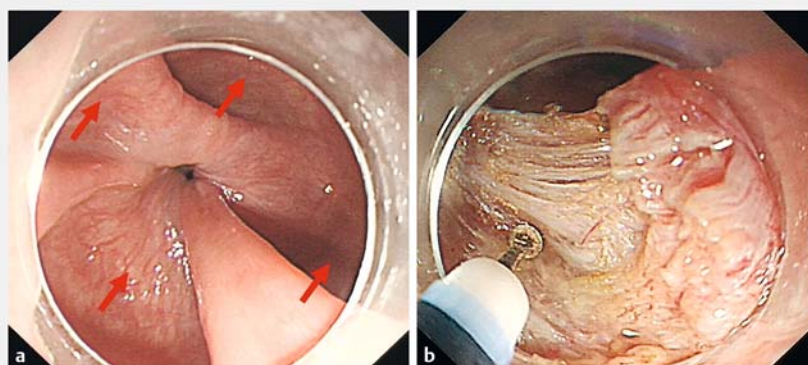


## Peroral endoscopic myotomy regains anatomical structure and improves emptying for achalasia with multiple esophageal diverticula





► **Fig. 1** Radiographic contrast study before peroral endoscopic myotomy showing multiple diverticula (red arrows) and narrowing at the cardia (yellow arrow).



► **Fig. 2** Endoscopic views showing: **a** the septa of the esophageal diverticula (red arrows); **b** septal division and myotomy being performed.

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 gastroesophageal 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-pro-

### Case Presentation

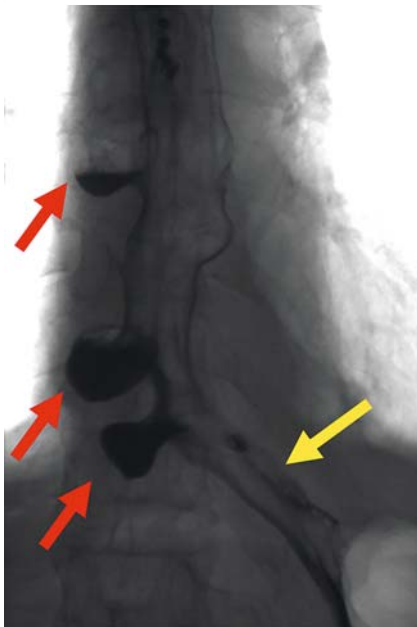



► **Video 1** Peroral endoscopic myotomy performed in a patient with achalasia and multiple esophageal diverticula leads to an improvement in the anatomical structure and improved emptying.

cedure, 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 sug-

gested 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 empty-



► **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).

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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