Peroral endoscopic myotomy, septotomy, and restoration of esophageal lumen with over-the-scope clips: closing the circle of esophageal diverticula management

Peroral endoscopic myotomy (POEM) is an option for esophageal diverticula treatment based on septum myotomy. However, a significant number of patients continue to be symptomatic owing to the pouch persistence [1–4].

A 66-year-old man with significant weight loss, dysphagia, and chest pain was referred to our unit. Preoperative workup included: a) endoscopy of large diverticulum above the esophagogastric junction (EGJ); b) barium swallow with dilatation of distal esophagus with two diverticula, contrast hold-up, and tertiary contractions (video image); c) high-resolution impedance manometry indicating type 3 achalasia with a premature contractile segment starting 11 cm above the EGJ; and d) CT scan showing absence of extrinsic lesions.

A POEM was performed. Initial evaluation showed one 2-cm diameter diverticulum without a septum at 29 cm and the 12 o’clock position. Two large diverticula with defined septa were found at 32 cm and 3 o’clock, and 3 cm distally at 9 o’clock (Fig. 1). A wide 16-cm long submucosal tunnel exposing 50% of the esophageal circumference was initiated at 26 cm and extended to 2 cm below the EGJ (Fig. 2). An uninterrupted posterior myotomy was started 12 cm above the EGJ to ensure complete dissection of the spastic segment (Fig. 3). Then, the myotomy was directed right to dissect the 3 o’clock diverticulum septum; afterwards, it was directed left to the 9 o’clock diverticulum septum and finally to the cardia and fundus, following the direction of the sling fibers. Both diverticulum pouches were everted towards the esophageal lumen and grasped with over-the-scope (OTS) clips (Fig. 4).

The mucosotomy was closed with through-the-scope (TTS) clips. An early barium swallow demonstrated a restored esophageal anatomy with normal contrast flow (Fig. 5). The patient was discharged without complications and remains asymptomatic on a regular diet.

We conclude that a multimodal one-session endoscopic procedure treating both the underlying motility disorder and the diverticula, with restoration of the lumen mechanically (OTS clips), will lead to better rates of therapeutic success.

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Video 1 Initial barium transit in a patient with type III achalasia and multiple diverticula.

Fig. 1 Distal diverticulum.

Fig. 2 Distal diverticulum muscular septum.

Fig. 3 Septotomy and myotomy.
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