



Tunneling-free peroral endoscopic septotomy for Zenker diverticulum

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The Zenker diverticulum (ZD) emerges from Killian's triangle and mostly presents with oropharyngeal dysphagia. Several endoscopic techniques have been described to transect the cricopharyngeus, with variable success and adverse event rates.¹ Zenker peroral endoscopic myotomy (Z-POEM) has been established as an effective intervention, with technical and clinical success rates above 97% and 92%, respectively.^{2,3} However, some limitations can be attributed to this approach, mainly the need for 3 submucosal tunnels, which is technically demanding and has the risk of injuring the mucosa over the tunnels. More recently, another method has been described: the peroral endoscopic septot-

omy (POES).^{1,4} Differently from Z-POEM, POES obviates 1 submucosal tunnel (that proximal to the septum); however, it still requires the other 2, on the diverticular and esophageal sides. According to a recent meta-analysis of retrospective studies, the 2 techniques are similar regarding safety and efficacy.

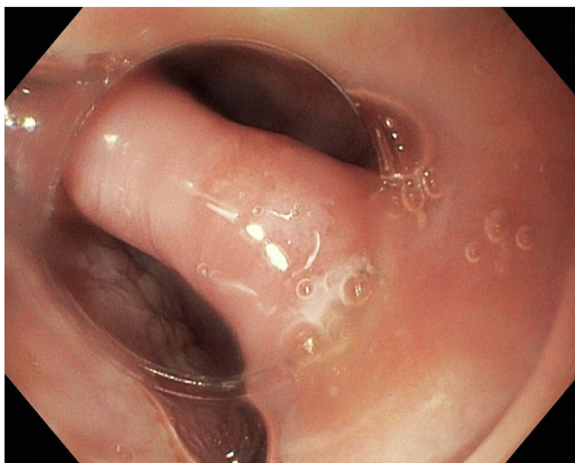


Figure 1. Zenker diverticulum septum.

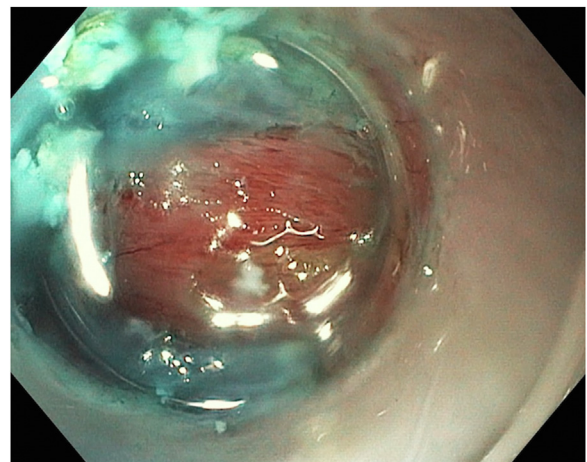


Figure 2. Dissection of the submucosa above the septum.

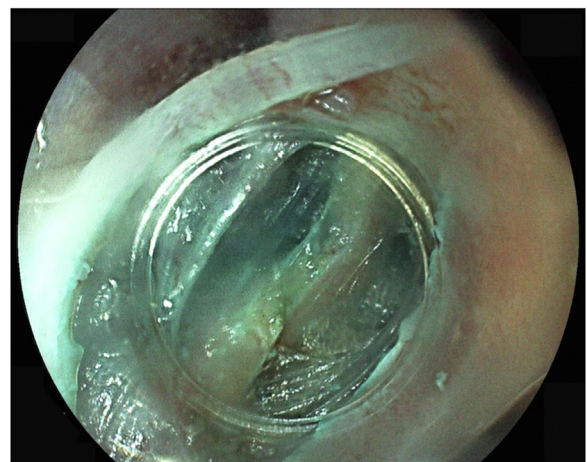


Figure 3. Dissection of cricopharyngeal fibers under direct view, preserving the submucosa on both septum sides.

Abbreviations: DRC, dysphagia regurgitation complications; POES, peroral endoscopic septotomy; R-POES, readily POES; ZD, Zenker diverticulum; Z-POEM, Zenker peroral endoscopic myotomy.

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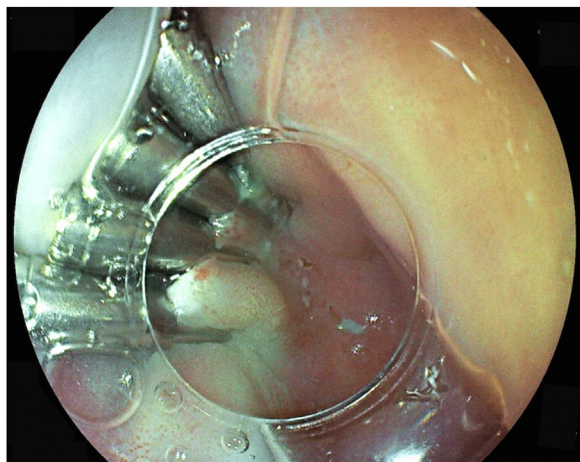


Figure 4. Closure of mucosal incision.

Here we report the use of a tunneling-free Z-POEM, performed on 4 patients from our center. Before the procedure, all patients (mean age, 69 ± 7) had dysphagia (grade 2 in the “dysphagia, regurgitation, complications” [DRC] scale³) and regurgitation (score 2 in 2 patients, score 3 in the others [DRC]). The modified Z-POEM was performed using a gastroscope (EG-760R; Fujifilm Medical Co, Tokyo, Japan), a Flush Knife BTS 1.5 mm (Fujifilm), and 11-mm through-the-scope clips (Novaclip R2, Vytel, Bagnolet, France). The procedure consisted of the following steps: injection, incision, myotomy, and closure (Video 1, available online at www.videogie.org). First, a mucosal incision over the septum and along its axis (Fig. 1) was created with an

endoscopic submucosal dissection knife, after injection with saline plus methylene blue. Next, the submucosa directly above the muscular septum was dissected to access the cricopharyngeus (Fig. 2), while the submucosa on both septum sides was only injected. The full-thickness septotomy was then safely accomplished using the Flush Knife BTS (ENDO CUTQ, effect 1, duration 3, interval 1, using the unit ERBE VIO300S [ERBE Elektromedizim, Tübingen, Germany]), under direct endoscopic view, preserving the submucosa on the sides of the septum until all cricopharyngeal fibers were dissected (Fig. 3). Lastly, the mucosal incision was closed using standard clips (Fig. 4). Intraoperative bleeding was negligible and the mean duration was 9 ± 5 minutes. Antibiotic prophylaxis (third-generation cephalosporin, single-dose) was given. The patients were admitted overnight, remained asymptomatic, and were discharged home after starting liquid intake. They gradually returned to a non-restrictive diet in the following 7 days, and all had complete symptoms’ resolution (score 0 for dysphagia and regurgitation [DRC]). The esophagograms confirmed the impact of the intervention (Fig. 5; retained contrast prior to myotomy [left panel], normal progression afterward [right panel]). The tunneling-free approach seems simpler and faster than Z-POEM and POES, because the intraoperative time is quite shorter than that described for those techniques (mean duration, 36 ± 14 minutes⁴). Considering this, we named the novel approach “readily POES” (R-POES). Figure 6 is a schematic representation of 3 techniques (Z-POEM, POES, and R-POES). Even though our series is small, it can be hypothesized that R-POES is safer, as submucosal tunneling is challenging and may introduce additional harm, particularly related to mucosa damage. Future

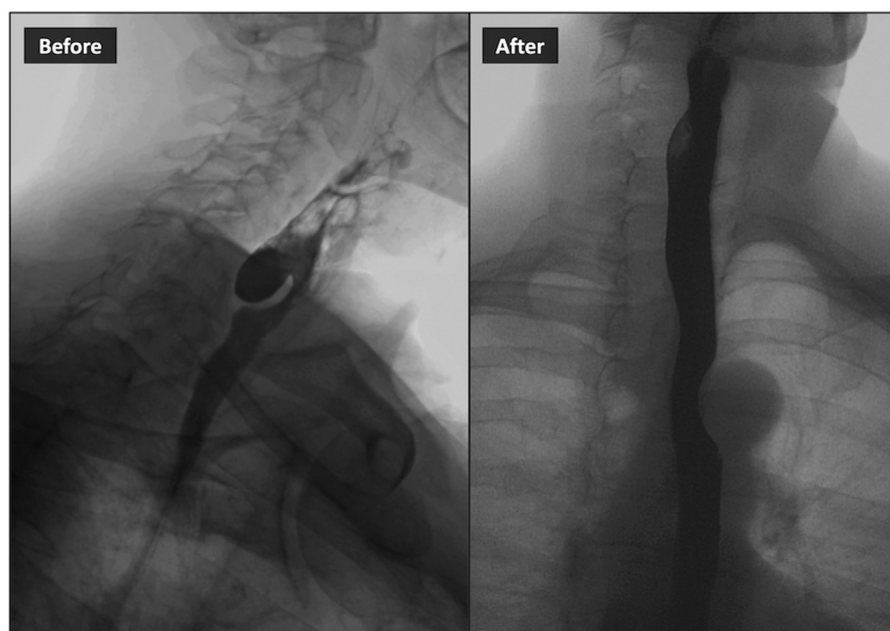


Figure 5. Barium esophagograms before and after the tunneling-free endoscopic myotomy.

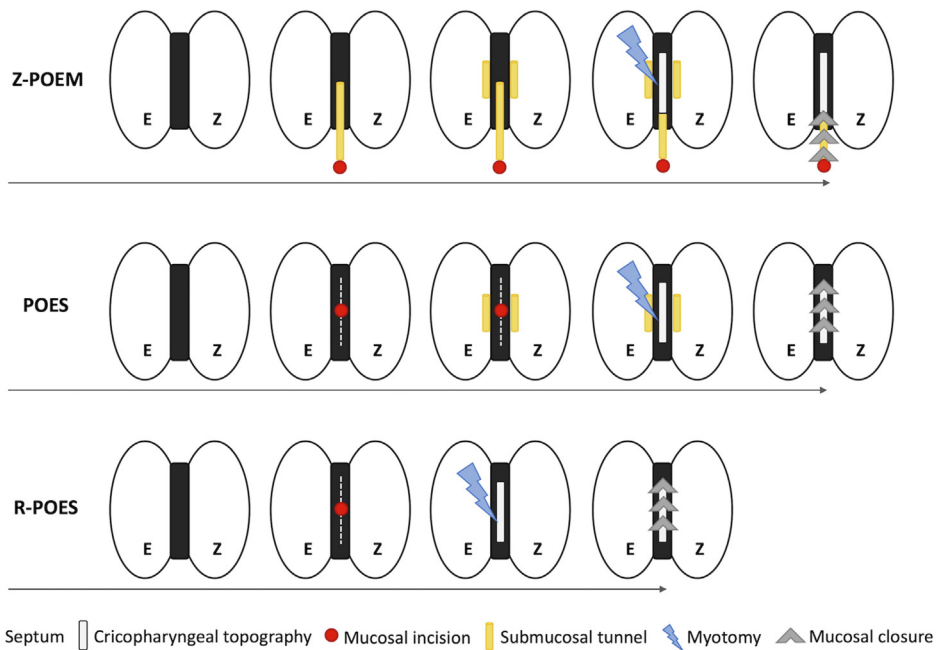


Figure 6. Schematic representation of classical peroral endoscopic myotomy for Zenker diverticulum (Z-POEM), peroral endoscopic septotomy (POES), and “readily” peroral endoscopic septotomy (R-POES). E, Esophagus; Z, Zenker diverticulum.

experience and studies, ideally randomized controlled trials, may clarify the safety and short- and long-term efficacy of non-tunneling R-POES. Also, it remains to be tested whether the combination of the tunneling-free myotomy and mucosotomy is useful to avoid flap-related dysphagia that may persist in patients with larger ZD,⁶ as R-POES does not reduce the size of mucosal pharyngeal pouch, and to aid in cases of technical difficulties because of limited working space.

DISCLOSURE

The authors did not disclose any financial relationships.

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