Peroral endoscopic septotomy for Zenker's diverticulum with additional cut of mucosal flap: step by step

Harold Benites-Goñi, MD,[1,2] Paulo Bardalez-Cruz, MD,[3] Bryan Medina-Morales, MD,[3] Jairo Asencios-Cusihuallpa, MD,[3] Luis Marin-Calderón, MD[3]

The goal of treatment for Zenker's diverticulum is complete incision of the cricopharyngeal muscle to eliminate the septum. Currently, the most widely used method for managing Zenker's diverticulum is septotomy with a flexible endoscope. However, this method has a recurrence of symptoms up to 30%, probably due to an incomplete myotomy of the septum.[1]

Peroral endoscopic myotomy has been modified to manage Zenker's diverticulum,[2] showing excellent efficacy and safety profile.[3] Peroral endoscopic myotomy for the treatment of Zenker's diverticulum allows complete myotomy under direct endoscopic view. One of the drawbacks of this technique is related to the mucosal flap that remains after cutting the muscular septum. The remaining mucosal flap could contribute to the recurrence of symptoms, primarily in diverticula larger than 2 cm.[4] In these cases, we suggest cutting both sides of the mucosal flap after the myotomy to avoid the recurrence of symptoms (Figs. 1 and 2).

We report a case of an 89-year-old male patient who was referred with a diagnosis of Zenker's diverticulum (Video 1, available online at www.videogie.org). Preoperative endoscopy revealed a Zenker's diverticulum, and an esophagogram showed a diverticulum arising from the midline of the posterior wall that was 3.5 cm long (Fig. 3).

The procedure was performed with the patient under general anesthesia. Prophylactic antibiotic with ceftriaxone was given before and after the operation for 2 days. Submucosal injection was performed at the apex of the septum with diluted methylene blue (only 1 injection point is enough to avoid deforming the septum and making access more difficult). Next, mucosal incision and submucosal dissection were performed on both sides of the septum (CORE knife [INCORE, Daegu, South Korea]; swift coagulation mode; effect 2 and 40 W). Subsequently, complete myotomy was achieved under direct endoscopic view (CORE knife; Endocut Q current; effect 3, interval 1, and duration 1). After completing the myotomy, 2 endoclips were placed on each side of the mucosal incision to stabilize the mucosal flap and to approximate the edges (Figs. 4 and 5). Finally, transection of the mucosal flap was performed (IT knife [Olympus, Tokyo, Japan]; Endocut Q current;

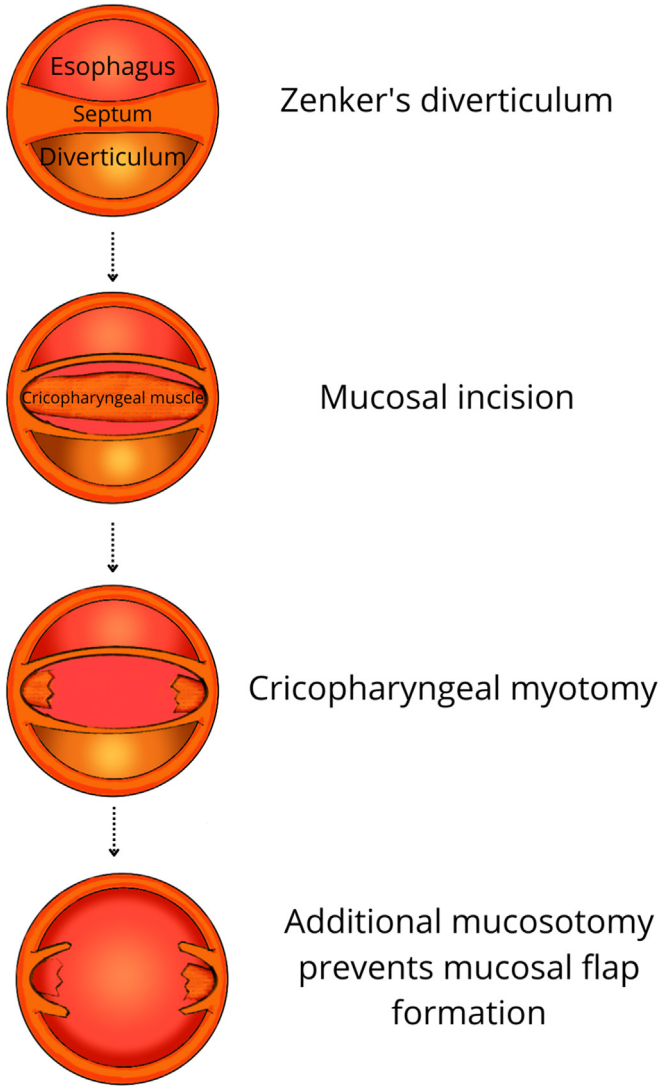

Figure 1. Diagram showing the technique of peroral endoscopic septotomy for Zenker's diverticulum with additional cut of mucosal flap.

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Departamento de Aparato Digestivo, Hospital Nacional Edgardo Rebagliati Martins, Lima, Perú (1), Vicerrectorado de Investigación, Universidad San Ignacio de Loyola, Lima, Perú (2), Departamento de Aparato Digestivo, Hospital Nacional Edgardo Rebagliati Martins, Lima, Perú (3).

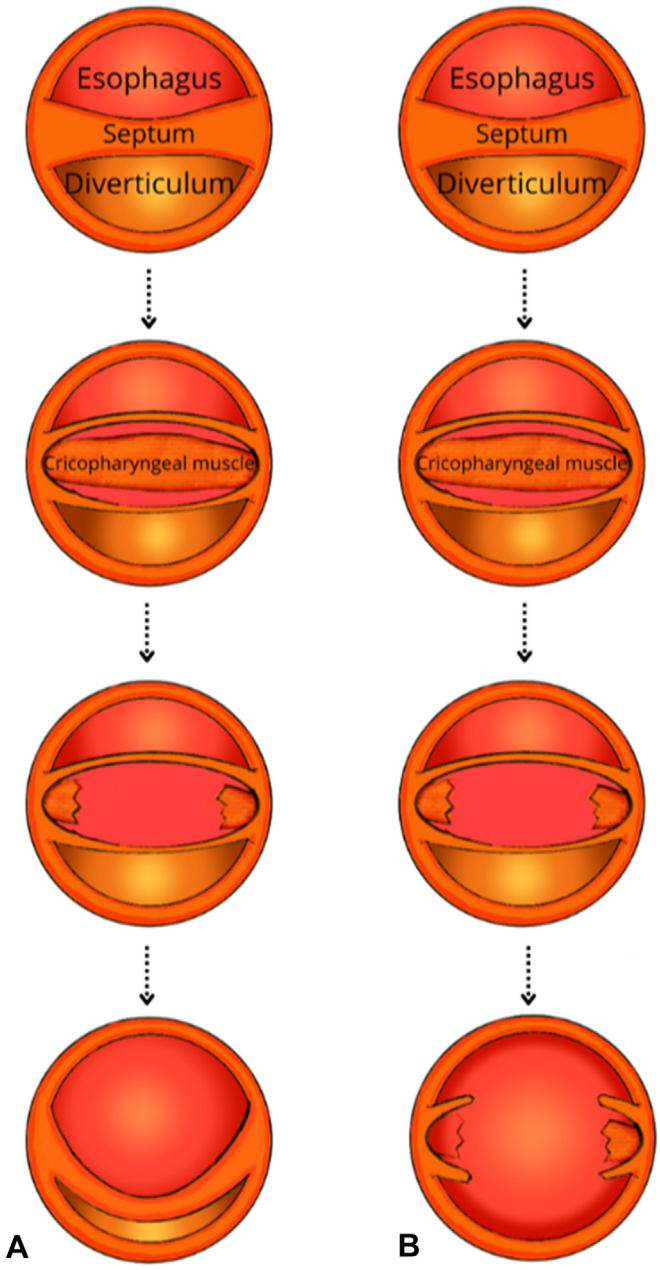

Figure 2. Comparison of the 2 techniques showing that the main difference between them is the addition of mucosotomy of the remaining mucosal flap after endoscopic myotomy. **A,** Standard Zenker's peroral endoscopic myotomy. **B,** Zenker's peroral endoscopic myotomy with mucosotomy.

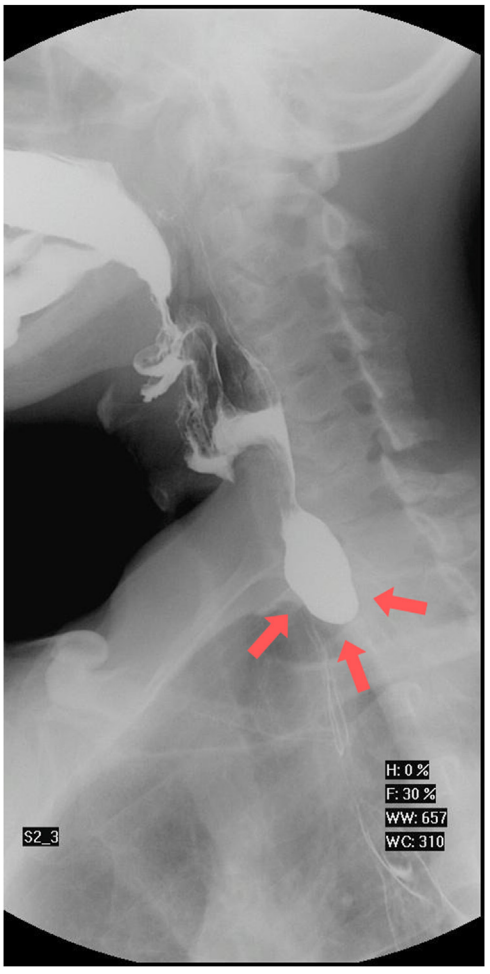

Figure 3. Esophagogram showing the presence of a Zenker's diverticulum.

effect 3, interval 1, and duration 1) (Fig. 6), and subsequent closure was done with endoclips. There were no adverse events, such as bleeding or perforation.

An esophagogram was performed the next day and showed a good passage of the contrast to the esophagus and the absence of leaks (Fig. 7). The patient was admitted overnight. On discharge, the patient was prescribed ciprofloxacin and metronidazole for 5 additional days. After 6 months of follow-up, the patient remains asymptomatic.

In conclusion, the addition of mucosotomy after complete transection of the cricopharyngeal muscle allows

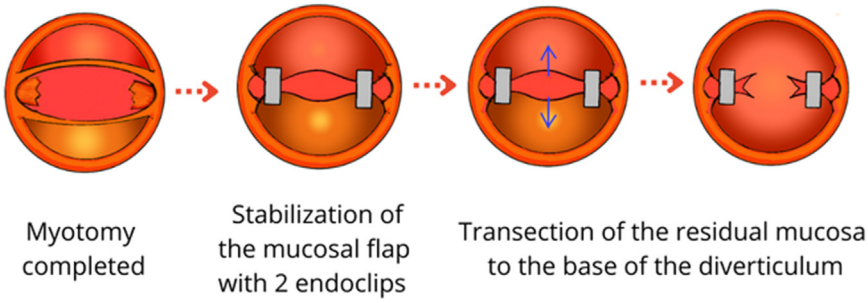

Figure 4. Diagram showing the placement of clips to stabilize the mucosal flap before mucosotomy.

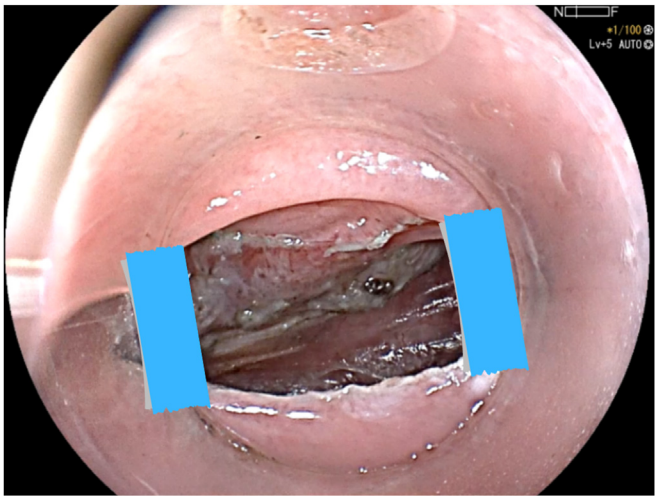

Figure 5. Placement of the 2 initial endoclips to bring the edges of the mucosal incision closer together.

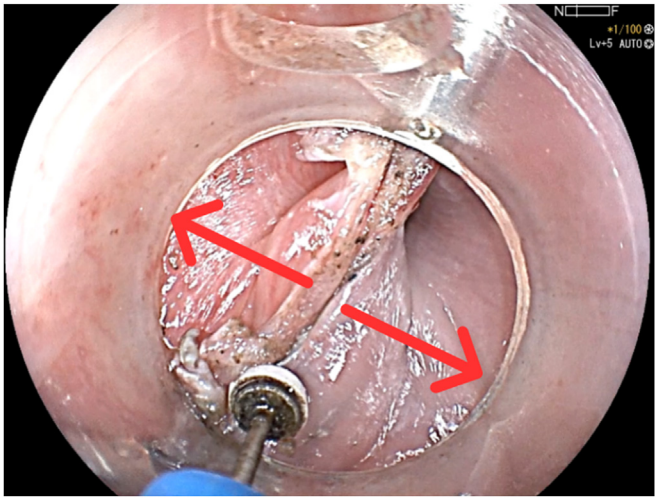

Figure 6. Orientation of the mucosal flap cut.

us to avoid the risk of the permanence of a residual mucosal flap that can contribute to the persistence of symptoms, primarily in cases of Zenker's diverticulum larger than 2 cm.

DISCLOSURE

The authors disclosed no financial relationships relevant to this publication.

Figure 7. Esophagogram showing adequate passage of contrast in esophagus.

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