



Recurrence after Zenker's peroral endoscopic myotomy despite complete septotomy: how far to go with myotomy on the esophageal side

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Zenker's diverticulum (ZD) is the most common diverticular disease found in the pharyngo-esophageal region.¹ Zenker's peroral endoscopic myotomy (Z-POEM) has been used incrementally for ZD with good efficacy and safety.² Although Z-POEM provides the platform of submucosal tunneling that ensures a complete septotomy, recurrence to the tune of 14.7% are still reported after Z-POEM.³ Here we present a case of ZD that had recurrence after Z-POEM because of incomplete myotomy on the esophageal side, which was subsequently tackled with flexible endoscopic division of the residual esophageal muscular bridge.

A 64-year-old man presented with 1-year history of intermittent dysphagia that progressed to become daily in the last 2 months with a Dakkak Bennett score (DBS) of 3. He was referred to our unit in March 2021. The upper GI endoscopy and barium swallow confirmed the presence of a large ZD (size: 5 cm) (Figs. 1 and 2). Interestingly, the diverticulum showed 2 pouches separated by a septum (Fig. 1), and barium swallow confirmed this bicornuate morphology (Fig. 2). We went ahead with Z-POEM for this patient. A submucosal bleb was created with a solution of saline and methylene blue 2 cm proximal to the diverticular septum. On entry into the submucosal space, extension of the tunnel was slightly restricted by the fibrous septum separating the 2 pouches of the diverticulum. After careful dissection of

the fibrous septum, we could extend and complete the tunnel into the distal pouch. The muscular septum was exposed on the diverticular and the esophageal side, and complete myotomy up to the base of the diverticulum was performed (Figs. 3 and 4). Finally, after ensuring hemostasis, mucosal incision was closed with multiple hemoclips. The postprocedure period was uneventful, and a day-2 contrast study showed free flow of contrast without any leak. The patient was discharged on day 3 in a hemodynamically stable condition with a DBS of 0. One month after the procedure, the patient had recurrence of dysphagia and his DBS was 3. On carefully reviewing the previous procedure, we realized there was incomplete extension of the myotomy on the esophageal side beyond the base of the septum, which led to recurrence of the symptoms (Fig. 5). The patient was subsequently taken up for flexible endoscopic division of the residual esophageal muscular bridge (Fig. 6). The latest follow-up after 1 year shows complete symptomatic

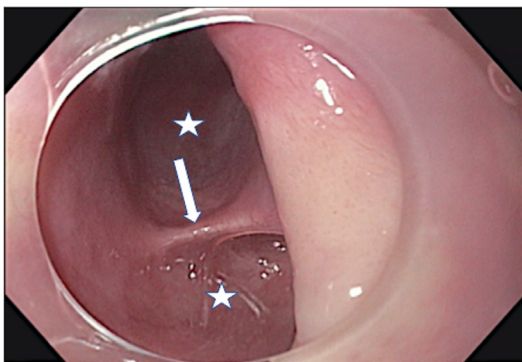


Figure 1. Endoscopic image showing the large Zenker's diverticulum with bicornuate morphology (*white arrow* shows the septum; *stars* show pouches of the bicornuate Zenker's diverticulum).

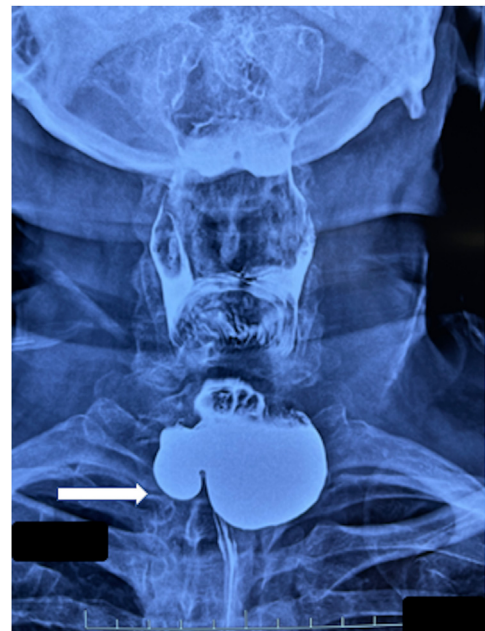


Figure 2. Barium swallow image showing the bicornuate morphology of the Zenker's diverticulum (*white arrow*).

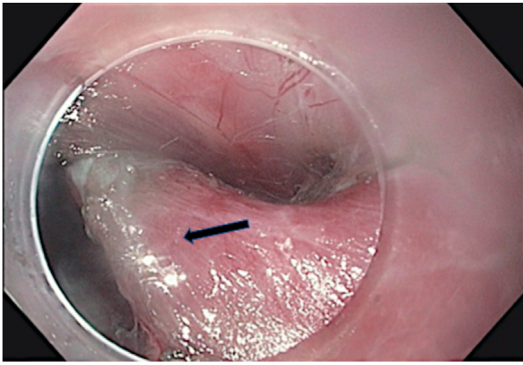


Figure 3. Endoscopic image showing delineation of the muscular septum on the diverticular and the esophageal side (*black arrow*).

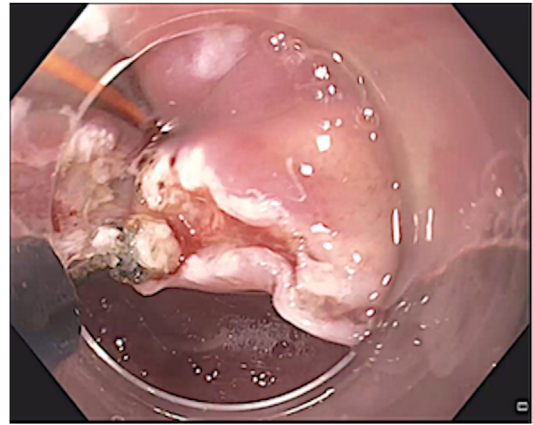


Figure 6. Endoscopic image showing flexible endoscopic division of the residual esophageal muscular bridge.

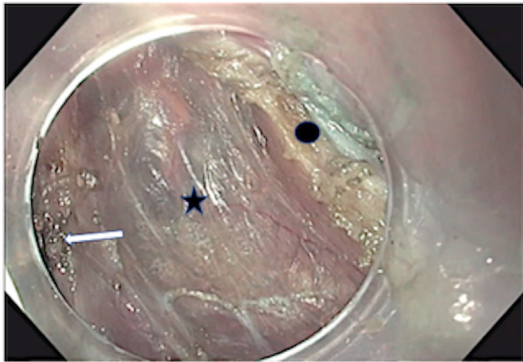


Figure 4. Endoscopic image with complete septotomy up to the base (*white arrow* shows the septotomy up to the base of diverticulum; *black star* shows the fascia separating mediastinum from the submucosal tunnel; *black circle* shows the esophageal side of the septotomy).



Figure 7. Barium image post Z-POEM showing marked reduction in pouch size with free flow of contrast.

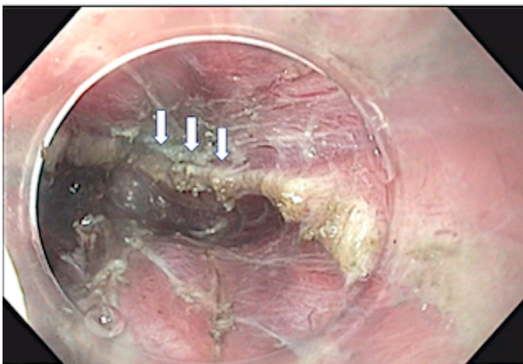


Figure 5. Endoscopic image showing incomplete myotomy on the esophageal side (*white arrows*).



Figure 8. Barium image post flexible endoscopic division of the "esophageal muscular bridge" showing minimal residual pouch with free flow of contrast.

relief with a DBS of 0. (Figs. 7 and 8 respectively show the barium images after Z-POEM and after endoscopic division of the esophageal muscular bridge. Both images show small residual diverticular pouches that are asymptomatic.)

The present case highlights the importance of extending the myotomy into the esophageal side beyond the base of the septum for at least 2 cm while performing

Z-POEM for ZD. This will ensure a complete cricopharyngeal myotomy even in the setting of anatomical variations in the length of the cricopharyngeus and thus prevent recurrence after Z-POEM (Video 1, available online at www.giejournal.org, demonstrates the Z-POEM and flexible endoscopic division of the esophageal muscular bridge after recurrence post-Z-POEM).

DISCLOSURE

All authors disclosed no financial relationships.

Abbreviations: DBS, Dakkak Bennett score; ZD, Zenker's diverticulum; Z-POEM, Zenker's per oral endoscopic myotomy.

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