

Novel technique for flexible endoscopic repair of Zenker's diverticulum

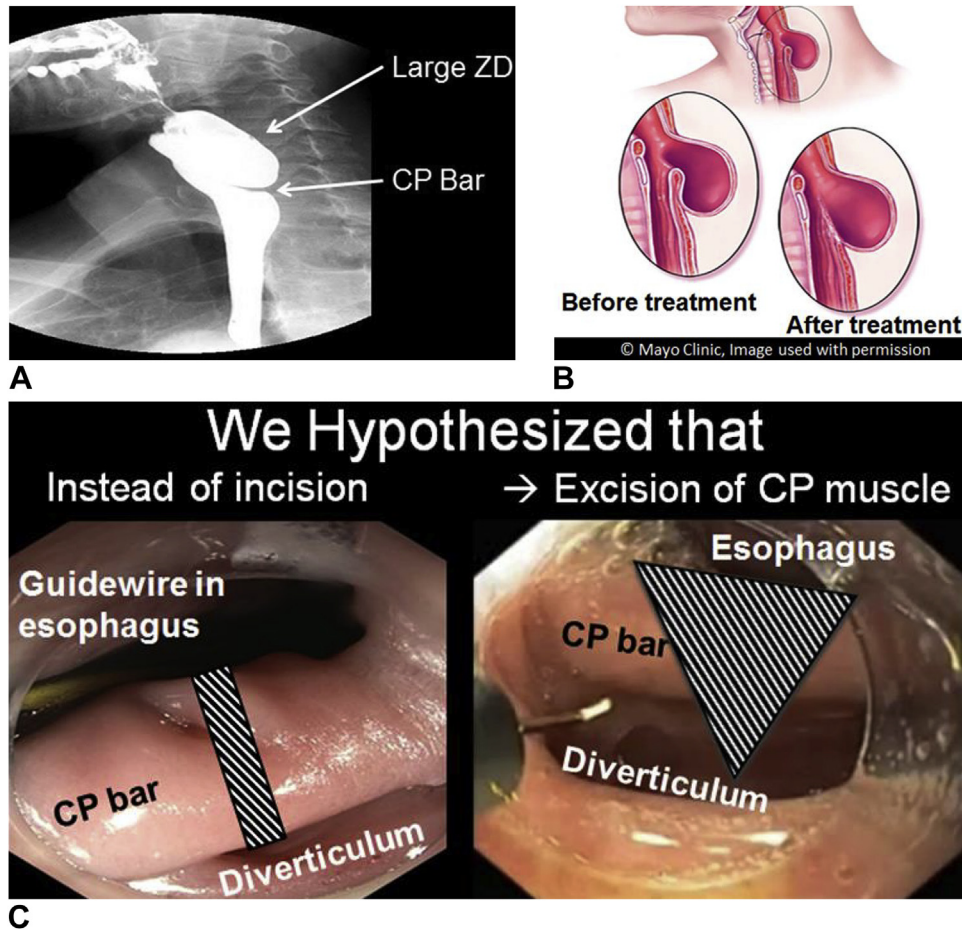


Figure 1. **A**, Gastrografin swallow study of ZD. **B**, Endoscopic repair of ZD. **C**, Hypothesis of our technique for endoscopic ZD repair. **D**, Endoscopic suture stabilizing the CP bar and guidewire securing and orienting to esophageal lumen. **E**, Electrocautery device used to make incisions on CP bar, directed inferomedially, on both sides of the suture; the two incisions need not completely meet in the center because the snare will complete the incision. **F**, Passing the snare over the suture, down to the base of the incisions, to resect part of the CP muscle. **G**, Final outcome, showing unifying the cavity of the diverticulum with the esophageal lumen. ZD, Zenker's diverticulum; CP, cricopharyngeal. Reused with permission from the Mayo Foundation for Medical Education and Research. All rights reserved.

Zenker's diverticulum (ZD), also known as cricopharyngeal (CP) diverticulum, is an outpouching of mucosa through Killian's triangle (Figs. 1A and B). We hypothesized that instead of incising the CP muscle, as performed historically, a wedge-shaped excision of the CP muscle would decrease the recurrence rate or persistence rate of clinical symptoms after repair of ZD (Fig. 1C). We use this technique either as a salvage method in patients for whom previous standard cricopharyngeal myotomy has failed or as an initial therapy for diverticula where the vertical length is greater than 5 cm; the hypothesis is that

this technique would minimize the reformation of the diverticulum by removing a larger segment of tissue. The ZD repair (n = 6) (Video 1, available online at www.VideoGIE.org) was performed during general anesthesia with endotracheal intubation and the use of cap-assisted upper endoscopy. A guidewire was placed in the esophageal lumen to protect the anterior esophageal wall during electrocautery. The CP muscle was fixed with a suture with use of an endoscopic suturing device (Fig. 1D). The suture was secured with a clamp, providing gentle traction outside the endoscope, and exposing the CP muscle bar during

Written transcript of the video audio is available online at www.VideoGIE.org.

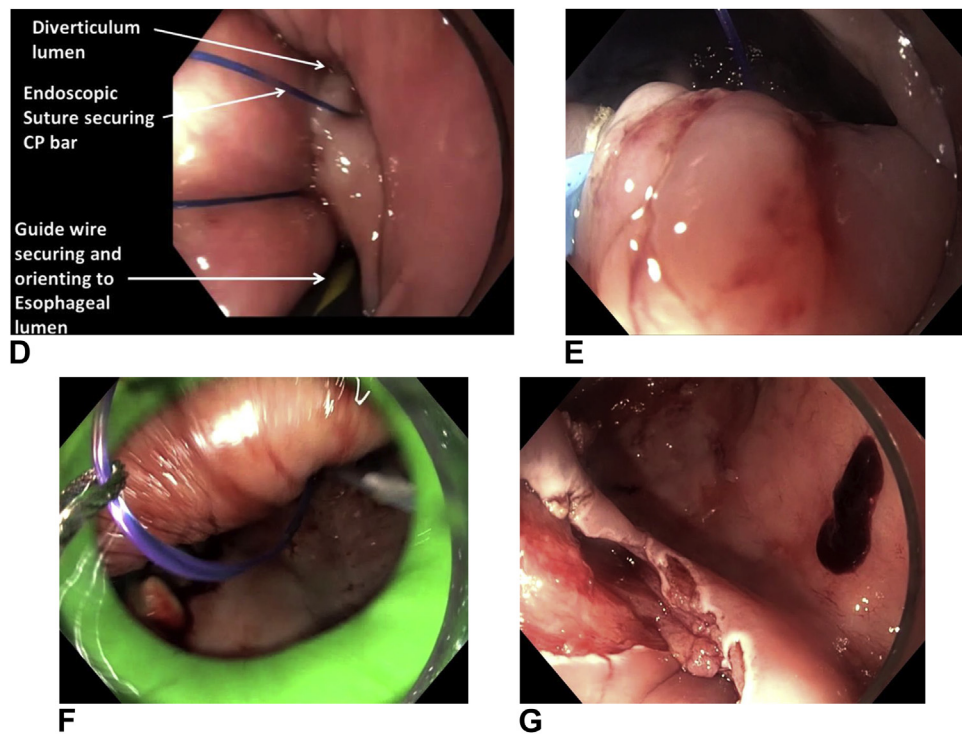


Figure 1. Continued

subsequent electrocautery excision. The dissection was targeted inferomedially on either side of the suture, creating a wedge-shaped incision (Fig. 1E). Next, a snare was passed first through the endoscopic channel and then over the guidewire down to the base of the wedge-shaped incision to perform its snare resection, to unify the lumen of diverticulum and esophagus (Figs. 1F and G). In our practice, all patients are admitted for observation overnight after ZD repair and kept nil per os. Clear liquids are introduced the following day, and if the liquids are tolerated, the patient is discharged home with outpatient follow-up. To date, we have performed 6 volumetric resections of the CP muscle without any immediate or delayed adverse event and with complete resolution of the patients' symptoms. The average total procedural time was 30 to 40 minutes by a single endoscopist. In our limited experience, a volumetric resection of the CP muscle is safe; however, prospective data of this technique in comparison with the conventional method are needed to determine its safety and efficacy.

DISCLOSURE

All authors disclosed no financial relationships relevant to this publication.

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