flexible endoscope has been reported with promising results.⁴⁻⁷ Stapling methods seem to have a slight benefit compared with flexible techniques in terms of the risk of perforation or subcutaneous emphysema. However, flexible techniques do not require oral intubation, are more adaptable to cervical extension limitations, are known to provide fewer dental injuries, and are more likely suitable for repeat procedures in the event of failure. Ideal indications for flexible endoscopic therapy include patients with contraindications for open or rigid transoral approaches, those with ZD <3 cm, or those with a failure of previous repair. The main limitation of flexible endoscopic approach is the size of diverticula (>3 cm), resulting in high rates of recurrent dysphagia (10%-30%).^{6,7}

Despite intrinsic limits due to the study's retrospective and noncontrolled nature, the results of Levy and colleagues invite us to consider individualized treatment for ZD. Further studies should focus on comparisons between endoluminal techniques and an open approach. Currently, patient selection regarding the choice of endoluminal therapy compared to open surgery remains unclear owing to a lack of evidence-based recommendations. Future studies also could include the size of the diverticulum in a multivariate analysis of factors contributing to failure as

this is clearly the main reason for conversion and poor outcome. Finally, gathering information regarding the learning curve for oral stapling in thoracic surgery units may be valuable to strengthen the incorporation of this technique in the core competencies.

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Commentary: Zenker's diverticulum: One size does not fit all

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In this Issue of the *Journal*, Levy and colleagues¹ reviewed their series of the transoral stapling approach performed by thoracic surgeons to treat Zenker's diverticulum (ZD). The

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CENTRAL MESSAGE

Incisionless techniques in treating Zenker's diverticulum by thoracic surgeons are a safe and feasible approach that strongly contribute to the advancement in management of this disease.

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thoracic surgeons at the University of Pittsburgh Medical

Center are known for their excellence in the management of diseases of the esophagus. Their considerable experience coupled with the number of patients included and the precise description of the procedure are highly positive aspects of the paper. Managing esophageal diseases falls in the scope of practice of multiple different specialties, including otolaryngology, general surgery, gastroenterology, and thoracic surgery. Regardless of the specialty, one should be well trained in this area, with high volumes and tracked outcomes for quality control.

The authors included most of the important aspects that should be considered when treating a ZD endoscopically. The lower limit of the diverticulum size (3 cm) was mentioned, but the authors didn't comment on the upper limit. There is a theoretical risk of creating a cloaca of the upper esophagus if the diverticulum size is large. The risk of leak is increased with multiple stapler fires for larger diverticula.² An upper limit of the diverticulum size has been suggested in papers that ranged from 5 to 7 cm.^{3,4} It would have been interesting to know if larger-sized diverticula (≥ 5 cm) treated with same approach showed any difference in the outcomes.

One of the important outcomes that has been discussed in papers comparing endoscopic versus open approaches is the length of hospital stay. It has been shown in previous studies⁵ that the endoscopic approach significantly decreases the length of hospitalization. In our experience, patients are discharged on the same day of the procedure. In this study, the length of hospitalization ranged from 0 to 18 days with a median of 2 days, which is close to the time of hospitalization after the open approach. We wonder if the reason of this length of hospital stay was related to the procedure or related to the population, since the mean age was 78 years.

The authors used staplers to divide the septum, which proved to be safe in their experience. Although there are some other methods that have been described, such as

LigaSure,⁴ CO₂ laser, and electrocautery⁶ with rigid endoscopy, the endoscopic needle knife with flexible endoscopy is currently in vogue as a nonsurgical intervention that has been shown to be safe and effective.⁷ However, we believe the stapling of the septum to be the most established and well-described with rigid endoscopy and has stood the test of time.

We congratulate the authors for pushing us as surgeons to continually improve and striving for transformative learning practices. We believe this approach is an important asset in the treatment of ZD in carefully evaluated and selected patients. Perhaps most importantly, thoracic surgeons are well-positioned to care of this disease process because we are experienced with endoluminal and open therapies. Those of us in this space have realized that one size of treatment does not fit all patients.

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