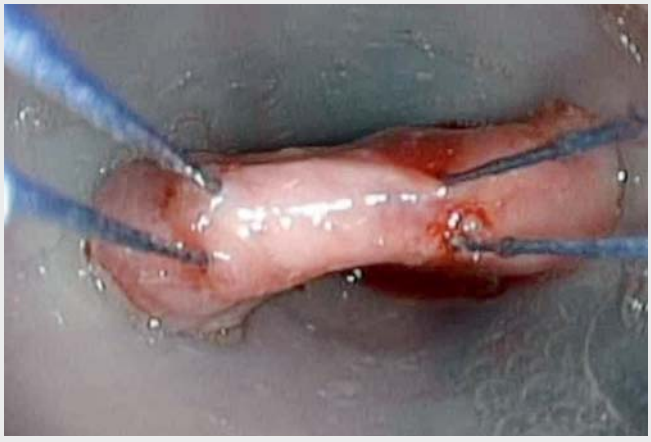
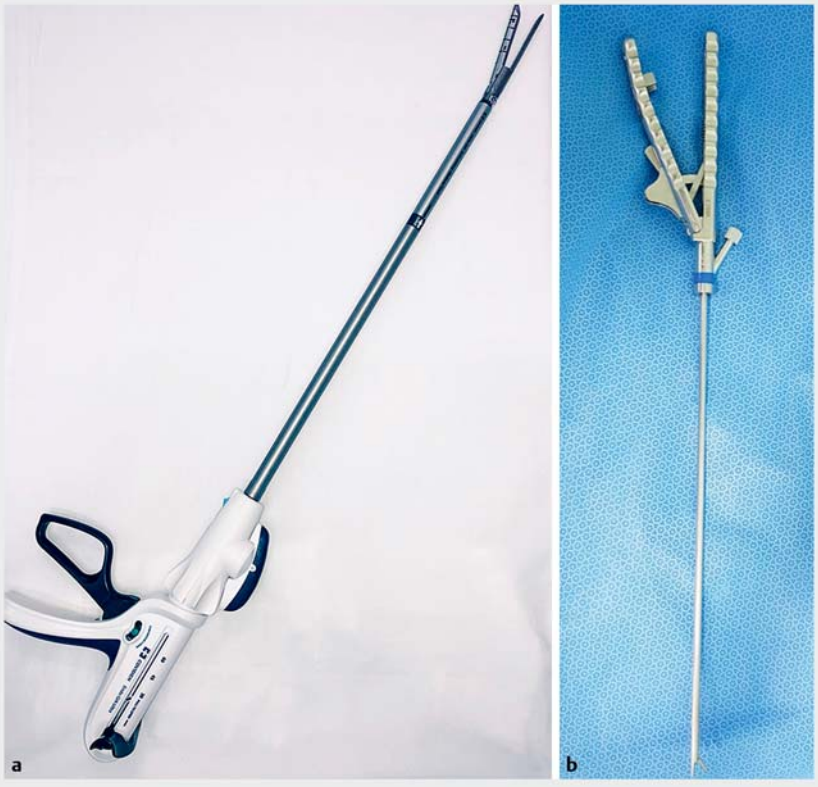
Stitch-assisted Zenker's diverticulotomy technique using a flexible diverticuloscope

A 55-year-old man presented with a 10-year history of progressive dysphagia, mainly for solids. He had previously undergone two unsuccessful attempts at an endoscopic diverticulotomy at another institution. Because of his persistent dysphagia, contrast radiography of the esophagus and upper gastrointestinal endoscopy were performed, and a 5-cm Zenker's diverticulum was identified. A new flexible endoscopic procedure was proposed for the patient, which consisted of transoral stapling of the diverticular septum using an Echelon Flex stapler (Ethicon, Cincinnati, Ohio, USA) (▶ **Fig. 1 a**) while traction on the septum was maintained with two stitches.

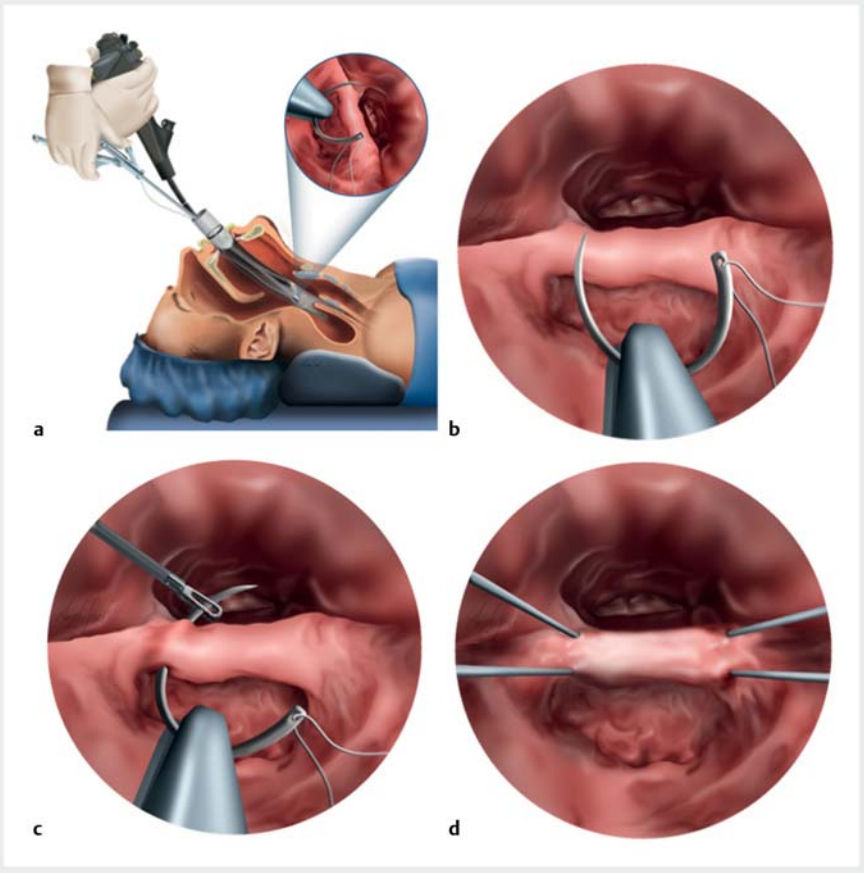
Although several cutting devices are available to dissect a diverticular septum, it remains unclear which procedure is safer and more efficient [1]. Stapling has the advantage of transecting the diverticulum and simultaneously sealing the wound edges [2]. However, it may lead to incomplete sectioning of the septum and diverticular recurrence, as had happened in our patient. In order to avoid incomplete sectioning of the septum, we placed two traction stitches at the edge of the septum, using a mini-laparoscopic needle holder (E705R; Ethicon) (▶ **Figs. 1 b**). The needle holder was introduced alongside the diverticuloscope (ZDO 22-30; Cook Medical, USA), with an ultrathin endoscope (caliber 5.9 mm, with a working channel of 2.0 mm) and overtube (ZD overtube: Cook Endoscopy, Winston-Salem, North Carolina, USA) being used [3] (▶ **Fig. 2**). Following placement of the stitches, we positioned a stapler into the pharynx, with one blade in the esophagus and the other in the diverticulum (▶ **Fig. 3**). Sectioning of the septum was then performed (▶ **Video 1**). Good long-term results have been described for the transoral stapling technique using stitch traction of the septum by some authors [4]; however, in these reports, traction stitches were placed with a rigid scope [5]. To the best of our



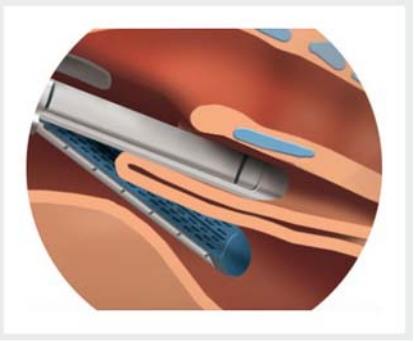
Video 1 Endoscopic Zenker's diverticulotomy is performed using a flexible diverticuloscope, which enables two traction stitches to be placed at the edge of the septum, before the stapler is used to section the septum. Source for illustration: Angela Giseli de Souza.



▶ **Fig. 1** Photographs showing: **a** the stapler used; **b** the minilaparoscopic needle holder.



▶ **Fig. 2** Illustration showing: **a** the minilaparoscopic needle holder introduced through an overtube under endoscopic vision; **b, c** placement of one stitch in the septum; **d** the final appearance of the two traction stitches placed in the diverticulum septum. Source: Angela Giseli de Souza.



▶ **Fig. 3** Illustration showing how the stapler is placed in the pharynx, with one blade in the esophagus and the other in the Zenker's diverticulum. Source: Angela Giseli de Souza.

knowledge, this is the first report of the placement of a traction stitch on the septum through a flexible diverticuloscope. Further studies are necessary to demonstrate the efficacy of traction stitch placement with a flexible diverticuloscope in reducing diverticular recurrence.

Endoscopy_UCTN_Code_TTT_1AO_2AG

Competing interests

None

The authors

Guilherme Francisco Gomes[1], Rafael William Noda[1], Andre Marussi Morsoletto[1], Leandro Kashiwagui[1], Raul Anselmi Junior[2], Christiano Claus[2,3]

1 Endoscopy Unit, Hospital Nossa Senhora das Graças, Curitiba, Brazil
2 Department of Surgery, Hospital Nossa Senhora das Graças, Curitiba, Brazil
3 Department of Surgery, Positivo University, Curitiba, Brazil

Corresponding author

Guilherme F. Gomes, MD
Rua Luis Tramontin, 1345, Curitiba, Parana, 81230-161, Brazil
guilfgomes@gmail.com

References

[1] Sakai P. Endoscopic myotomy of Zenker's diverticulum: lessons from 3 decades of experience. Gastrointest Endosc 2016; 83: 774–775
[2] Collard JM, Otte JB, Kestens PJ et al. Endoscopic stapling technique of esophagodiverticulostomy for Zenker's diverticulum. Ann Thorac Surg 1993; 56: 573–576
[3] Wilmsen J, Baumbach R, Stüker D et al. New flexible endoscopic controlled stapler technique for the treatment of Zenker's diverticulum: A case series. World J Gastroenterol 2017; 23: 3084–3091
[4] Bonavina L, Aiolfi A, Scolari F et al. Long-term outcome and quality of life after transoral stapling for Zenker diverticulum. World J Gastroenterol 2015; 28: 1167–1172
[5] Nicholas BD, Devitt S, Rosen D et al. Endostitch-assisted endoscopic Zenker's diverticulostomy: a tried approach for difficult cases. Dis Esophagus 2010; 23: 296–299

Bibliography

DOI https://doi.org/10.1055/a-1027-6316
Published online: 7.11.2019
Endoscopy 2020; 52: E138–E139

Stuttgart · New York
ISSN 0013-726X