Diverticular endoscopic band ligation of Zenker's diverticulum

A 35-year-old woman who reported a 1-year history of halitosis, regurgitation, and progressive dysphagia was referred to our department. Barium swallow showed a diverticulum in the upper esophagus (► **Fig. 1**). Gastroscopy (Olympus, Tokyo, Japan) revealed food remnants in a diverticulum that was 15 cm from the incisors (► **Fig. 2a**). After discussing all potential therapeutic

► **Fig. 1** Preoperative barium swallow showing a diverticulum in the upper esophagus.

options with the patient, she was offered endoscopic treatment.

Inspired by the widespread use of endoscopic band ligation in colonic diverticular hemorrhage [1,2], we performed a diverticular endoscopic band ligation (EBL) technique (► **Video 1**) in order to avoid possible leakage associated with diverticulotomy. We firstly made a longitudinal incision in the septum of diverticulum using a DualKnife (Olympus). Secondly, a gastroscope with an attached variceal banding device (Sumitomo Bakelite, Tokyo, Japan) was inserted into diverticular pouch. The diverticular pouch was suctioned into the suction cup, and the elastic band was released. Finally, the entire diverticular pouch was eliminated after releasing two elastic bands (► **Fig. 2 b**). The procedure was performed successfully and there were no subsequent complications.

After undergoing diverticular EBL, the patient's clinical symptoms gradually subsided, and she was discharged 3 days after the procedure. A follow-up gastroscopy 6 months later showed clinical improvement of the septum between the

diverticulum and the esophageal lumen (► **Fig. 2c**); a barium swallow showed only a small amount of barium remaining in the diverticulum (► **Fig. 3**).

Zenker's diverticulum is a rare anatomic defect, and large ones often cause secondary dysmotility [3]. Although minimally invasive endoscopic approaches, including peroral endoscopic myotomy (POEM) [4] and submucosal tunneling endoscopic septum division (STESD) [5], have been developed, the upper esophageal anatomy presents challenges with these techniques. The key to endoscopic treatment for diverticula is to remove the septum of the diverticulum. In the present case, we effectively treated a Zenker's diverticula with diverticular EBL, expanding the possible applications of EBL.

Endoscopy_UCTN_Code_TTT_1AO_2AD

Competing interests

The authors declare that they have no conflict of interest.

► **Fig. 2** Endoscopic views showing: **a** the preoperative appearance with food impaction in the upper esophageal diverticulum; **b** complete elimination of the diverticular pouch with endoscopic band ligation; **c** at follow-up 6 months later, clinical improvement of the diverticular septum and no food remaining in the residual diverticulum.

► **Fig. 3** Repeat barium swallow after 6 months showing only a small amount of barium in the diverticulum.

► **Video 1** Successful treatment of an upper esophageal diverticulum using the diverticular endoscopic band ligation technique.

The authors

Wei-Qing Chen

Department of Gastroenterology, Chongqing University Cancer Hospital, Chongqing, China

Corresponding author

Xu Tian, MD

Department of Gastroenterology,
Chongqing University Cancer Hospital,
No. 181 Hanyu Road, Shapingba District,
Chongqing 400030, China
Fax: +86-023-65079212
yxtx880919@hotmail.com

References

- [1] Farrell JJ, Graeme-Cook F, Kelsey PB. Treatment of bleeding colonic diverticula by endoscopic band ligation: an in-vivo and ex-vivo pilot study. *Endoscopy* 2003; 35: 823–829
- [2] Sakamoto T, Abe S, Nakajima T et al. Complete removal of a colonic neoplasm extending into a diverticulum with hybrid endoscopic submucosal dissection-mucosal resection and endoscopic band ligation. *Endoscopy* 2015; 47: E295–E296
- [3] Wu C, Zhang Q, Liu W et al. Successful treatment of giant esophageal diverticulum by per-oral endoscopic myotomy. *Endoscopy* 2018; 50: E107–E108
- [4] Ren LH, Feng YD, Shi RH. Treatment of multiple esophageal diverticula by peroral endoscopic myotomy. *Endoscopy* 2019; 51: E122–E124
- [5] Li QL, Chen WF, Zhang XC et al. Submucosal tunneling endoscopic septum division: a novel technique for treating Zenker's diverticulum. *Gastroenterology* 2016; 151: 1071–1074

Bibliography

Endoscopy 2021; 53: E148–E149

DOI 10.1055/a-1219-7521

ISSN 0013-726X

published online 5.8.2020

© 2020. Thieme. All rights reserved.

Georg Thieme Verlag KG, Rüdigerstraße 14,
70469 Stuttgart, Germany

ENDOSCOPY E-VIDEOS

<https://eref.thieme.de/e-videos>

Endoscopy E-Videos is a free access online section, reporting on interesting cases and new techniques in gastroenterological endoscopy. All papers include a high quality video and all contributions are freely accessible online.

This section has its own submission website at
<https://mc.manuscriptcentral.com/e-videos>

* Contributed equally to this work