

Endoscopic therapy of Zenker's diverticulum using a novel endoscopic scissor – the Clutch Cutter device

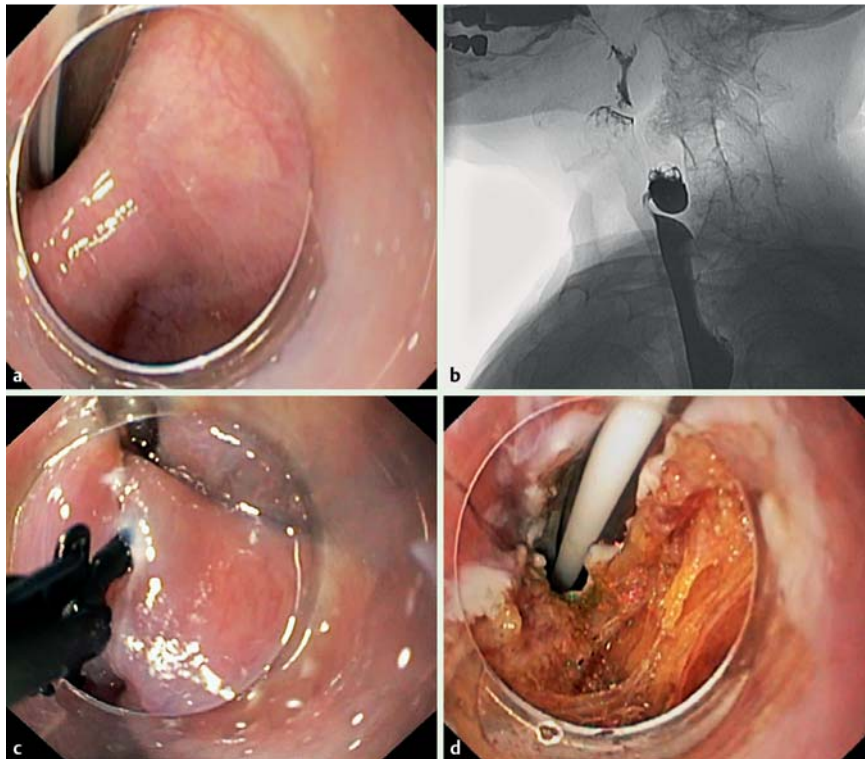


Fig. 1 Zenker's diverticulum. **a** Endoscopic view. **b** Barium swallow examination. **c** The Clutch Cutter was used to dissect the septum of the diverticulum. **d** The scissor-like device allowed the selective grasping and cutting of the muscle fibers.

Zenker's diverticulum is a diverticulum of the mucosa of the pharynx above the cricopharyngeal muscle, which often causes clinical symptoms including dysphagia, regurgitation, cough, and halitosis [1]. Endoscopic therapy is based on cutting the septum between the diverticulum and the esophageal lumen. A variety of endoscopic methods have been used for this procedure, including laser, stapler, harmonic scalpel, argon plasma coagulation, and needle-knives [1–4]. Here, we describe the use of a novel device, which was originally developed for endoscopic submucosal dissection (ESD), for the rapid and safe treatment of Zenker's diverticulum.

The Clutch Cutter (Fujifilm, Tokyo, Japan) was introduced to the European market in late October 2014 and is a forceps-type resection device for ESD. The device has a serrated cutting edge that is 0.4 mm wide

and 3.5 mm long. The device is rotatable, and the outer side of the forceps is insulated to avoid burning the surrounding tissue. The device has a diameter of 2.7 mm and is compatible with most conventional endoscopes. For electrocautery, the Vio 200 D-system (Erbe, Tübingen, Germany) was used, with the following settings: Forced coagulation 30W, Endo Cut Q with effect 1, duration 3, interval 1.

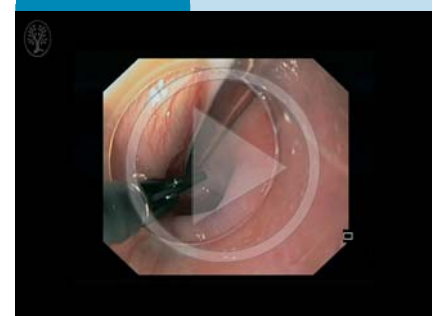
A 79-year-old woman presented with a 2-month history of regurgitation and dysphagia. A single-channel endoscope (GIF 1TQ160; Olympus, Tokyo, Japan) was carefully advanced through the esophagus with the patient under conscious sedation. Directly below the upper esophageal sphincter, the Zenker's diverticulum could be seen clearly, and the defect was also highlighted by the barium swallow examination (● Fig. 1 a, b, ● Video 1).

After inspection of the duodenum and the stomach, the endoscope was withdrawn and a conventional feeding tube was placed through the nose of the patient. A clear 4 mm distal cap (MH-464; Olympus) was attached to the endoscope, which was then reintroduced, and correct placement of the feeding tube in the gastric antrum was confirmed. Next, the endoscope was placed in front of the septum between the Zenker's diverticulum and the esophageal lumen, and the Clutch Cutter was advanced through the working channel of the endoscope. The forceps of the Clutch Cutter was opened and pushed against the septum in order to grasp the tissue (● Fig. 1 c). Electrocautery was applied, and the procedure was repeated until the entire septum had been cut through (● Fig. 1 d). The Clutch Cutter device allowed the selective grasping and cutting of the muscle fibers. Neither bleeding nor any post-procedural complications occurred. The total procedure time was 6 minutes.

The nasogastric tube was kept in place for 2 days. Oral feeding recommenced after removal of the nasogastric tube, starting with a soft diet for the first 3 days. Follow-up endoscopy 2 days after the procedure revealed a significant improvement. In conclusion, this case illustrates the potential of the new Clutch Cutter instrument for rapid and safe endoscopic treatment of Zenker's diverticulum. A multicenter study in a prospective setting is now highly warranted to evaluate the device.

Endoscopy_UCTN_Code_TTT_1AR_2AG

Video 1



Rapid and safe endoscopic treatment of Zenker's diverticulum using a new cutting device.

Competing interests: Dr. Neumann has received funding support from Fujifilm and has acted as a consultant for the company.

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DOI <http://dx.doi.org/10.1055/s-0034-1392658>
Endoscopy 2015; 47: E430–E431
© Georg Thieme Verlag KG
Stuttgart · New York
ISSN 0013-726X

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