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

Zenker’s diverticulum is a diverticulum of the mucosa of the pharynx above the cri- copharyngeal muscle, which often causes clinical symptoms including dysphagia, re- gurgitation, 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 submuco- sal 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 0.4mm wide and 3.5mm long. The device is rotatable, and the outer side of the forceps is insulat- ed to avoid burning the surrounding tissue. The device has a diameter of 2.7mm 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 dys- phagia. 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 exami- nation (Fig. 1a, 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After inspection of the duodenum and the stomach, the endoscope was withdrawn and a conventional feeding tube was placed through the nose of the patient.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 4mm distal cap (MH-464; Olympus) was attached to the endoscope, which was then reintroduced, and correct place- ment of the feeding tube in the gastric an- trum was confirmed. Next, the endoscope was placed in front of the septum be- tween 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. 1c). Electrocautery was applied, and the procedure was repeated until the entire septum had been cut through (● Fig. 1d). The Clutch Cutter device allowed the selective grasping and cutting of the muscle fibers. Neither bleeding nor any post-procedural compli- cations 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. Fol- low-up endoscopy 2 days after the proce- dure revealed a significant improvement. In conclusion, this case illustrates the po- tential of the new Clutch Cutter instrument for rapid and safe endoscopic treat- ment of Zenker’s diverticulum. A multi- center study in a prospective setting is now highly warranted to evaluate the device.

Endoscopy_UCTN_Code_TTT_1AR_2AG

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

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Endoscopy 2015; 47: E430–E431
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Stuttgart · New York
ISSN 0013-726X

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