Zenker’s diverticulum peroral endoscopic myotomy using a scissors-type knife

Zenker’s diverticulum is a rare anatomic defect characterized by herniation of the hypopharyngeal mucosa between the inferior aspect of the inferior constrictor muscle and the cricopharyngeus muscle. Most patients are elderly and present with symptoms of dysphagia, regurgitation, chronic cough, aspiration, and weight loss [1]. The treatment of symptomatic Zenker’s diverticulum has evolved from open surgical approaches to minimally invasive endoscopic procedures [2].

Peroral endoscopic myotomy for Zenker’s diverticulum (Z-POEM) is an endoscopic technique where the principles of submucosal endoscopy are followed. The procedure is composed of a mucosal incision, submucosal tunneling, septotomy, and mucosal closure [3]. This procedure has the potential to reduce the risk of perforation and mediastinitis [4]. Herein, we report an older patient with a symptomatic Zenker’s diverticulum who was treated with Z-POEM using a scissors-type endoscopic submucosal dissection (ESD) knife, the SB Knife. The potential benefits of the SB Knife include that: submucosal tissue and vessels can be coagulated and cut simultaneously; full-thickness myotomy can be performed accurately and efficiently; and rates of perforation may be lower with the grasping of muscle during myotomy [5].

An 84-year-old woman with a past medical history of breast cancer was referred with increasing dysphagia and weight loss. A barium study confirmed a 1.5-cm Zenker’s diverticulum and the decision was made to proceed with Z-POEM. The procedure was performed with the patient under general anesthesia. The diverticulum was at 9 o’clock at the level of the upper esophageal sphincter in the resting position (▶Fig. 1a). Submucosal injection was performed at the posterior aspect of the septum using a mixed solution of normal saline and methylene blue. A mucosal incision was performed using a standard SB Knife. Secure closure of the mucosal incision using endoclips.
cision was made, followed by submucosal
dissection with a triangle-tip knife (spray
coaigation mode; effect 2 and 40 W).
The muscular layer of the septum was ex-
posed. Submucosal dissection was per-
formed on the luminal side and the diver-
ticular side until the tunnel was distal to
the base of the Zenker’s diverticulum,
the dissection being carried out for a total
length of 3 cm (▶Fig. 1b). A myotomy
was performed using a standard SB knife,
with a working length of 1.8 mm and
maximal opening diameter of 2.6 mm,
with cautery setting of Endocut Q cur-
rent; effect 3, interval 1, and duration 1.
A complete myotomy was performed
after complete exposure of the sep-
tum (▶Fig. 1c). The mucosal incision
was closed with endoclips (▶Fig. 1d;
▶Video 1).
There were no immediate complications.
The patient was admitted overnight, and
an esophagogram performed the next
day showed no leakage. There is a risk of
foreign body sensation with clip place-
ment, but we have a preference for the
placement of clips with short stalks to
avoid this issue. At follow-up, the patient
remained asymptomatic 90 days after
undergoing Z-POEM.

Competing interests
None

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