Efficacy and cost-effectiveness of a novel dual grasping forceps-assisted over-the-scope clip inverted closure after gastric endoscopic full-thickness resection

Achieving reliable full-thickness defect closure after gastric endoscopic full-thickness resection (EFTR) for gastrointestinal stromal tumors is challenging [1, 2]. Although mucosal closure appears clinically acceptable [2–4], it is crucial to develop a robust and technically easy closure method that enables serosa-serosa inverted closure, as with surgical sutures.

Here, we describe a novel dual slim grasping forceps-assisted over-the-scope (OTS) clip closure under dual-channel endoscopy in gastric EFTR. With this technique, the difficult maneuvers and high cost associated with Twin Grasper forceps (Ovesco Endoscopy GmbH, Tübingen, Germany) can be overcome.

A 65-year-old man presented with a gastrointestinal stromal tumor in the upper stomach. After standard EFTR, a full-thickness defect measuring 15 mm in diameter remained (Fig. 1a). After obtaining written informed consent, the defect was closed according to the following description (Fig. 2, Video 1).

The equipment comprised two grasping forceps (TechGasper; Micro-Tech, Nanjing, China) instead of the Twin Grasper forceps (cost US$694). TechGasper forceps have two advantages: the slim shaft (1.8 mm outer diam-

Fig. 1 Endoscopic images. a After standard full-thickness resection, a defect measuring 15 mm in diameter remained. b Two grasping forceps were inserted into the gastroscope’s dual channels mounted with an over-the-scope (OTS) clip, and the seromuscular layers on both sides of the defect were grasped. c The two grasping forceps were pulled into the OTS clip cap under sufficient suction, and the OTS clip was deployed.

Fig. 2 Schema showing over-the-scope clip closure using dual grasping forceps (TechGasper; Micro-Tech, Nanjing, China). Source: Davinchi Medical Illustration Office.
The TechGrasper forceps were inserted into the gastroscope’s dual channels (GIF-2TQ260M; Olympus, Tokyo, Japan) mounted with an OTS clip (gc type, 10 mm; Ovesco Endoscopy). One forceps was used to grasp the seromuscular layer on one side of the defect, and the other was opened to grasp the contralateral seromuscular layer (▶ Fig.1b). Both grasping forceps were pulled into the OTS clip cap under sufficient suction, and an OTS clip was deployed (▶ Fig.1c). The seromuscular layer was inverted in tight apposition. The closure time was 30 minutes. Laparoscopic observation revealed no air leakage and the inverted full-thickness closure was confirmed (▶ Fig.3).

Competing interests

The authors declare that they have no conflict of interest.

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