Endoscopic complete closure of duodenal mucosal defects using a clip with a looped thread after endoscopic resection

Closure of mucosal defects after endoscopic resection of superficial nonampullary duodenal tumors is important to reduce the risk of delayed bleeding and perforation [1]. Therefore, we developed a new closure method using a clip with a looped thread (▶ Video 1).

An 84-year-old man had a flat elevated 35-mm lesion in the second portion of the duodenum (▶ Fig. 1a, b, c). A biopsy revealed it was an adenoma; therefore, we performed piecemeal endoscopic mucosal resection using a gastroscope (GIF-H290T; Olympus, Tokyo, Japan) with an endoscopic cap (TOP Endoscopic Hood; TOP, Tokyo, Japan) and bipolar snare (BSDA-217, BSDES-127: diameter 10, 26 mm, resp.; Zeon Corporation, Tokyo, Japan) (▶ Fig. 2). There were no adverse events; however, closure of the mucosal defect after endoscopic resection was difficult using only clips because the mucosal defect was large (▶ Fig. 3a). Therefore, we attempted endoscopic closure as follows. First, a looped nylon suture was tied to a clip (HX-610-090; Olympus) mounted on an applicator (HX-110LR; Olympus). The clip was then retracted into the applicator and inserted into the accessory channel before being placed on the proximal side of the defect (▶ Fig. 3b). Another clip was used to anchor the suture to the distal normal mucosa (▶ Fig. 3c), and additional clips were placed to achieve complete closure (▶ Fig. 3d, e). The nylon suture was cut using scissor forceps (FS-3L-1; Olympus), and complete closure was achieved without delayed adverse events.

Various procedures for mucosal closure exist, such as a simple closure technique using clips, clips with a string [2], endoloop [3], or over-the-scope clip [4]. This is a modified method of traction using a
clip with a looped thread during colorectal endoscopic submucosal dissection [5], and is similar to using clips with a string [2]. In this method the thread does not have to be placed in the accessory channel, so the gastroscope is maneuverable. Furthermore, dual-accessory channel endoscopes and other expensive devices are not required.

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Competing interests

The authors declare that they have no conflict of interest.

The authors

Kengo Kasuga1, Ichiro Oda1, Satoru Nonaka1, Seiichiro Abe1, Haruhisa Suzuki1, Toshio Uraoka2, Yutaka Saito1

1 Endoscopy Division, National Cancer Center Hospital, Tokyo, Japan

2 Department of Gastroenterology and Hepatology, Gunma University Graduate School of Medicine, Maebashi, Japan

Corresponding author

Ichiro Oda, MD
Endoscopy Division, National Cancer Center Hospital, 5-1-1 Tsukiji, Chuo-ku, Tokyo 104-0045, Japan
Fax: +81 3 3542 3815
ioda@ncc.go.jp

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