Clip-line closure with the re-openable clip over line method for a large mucosal defect after gastric endoscopic submucosal dissection

Mucosal defects that occur following large gastric endoscopic submucosal dissection (ESD) are a cause of postoperative bleeding [1–3]. A standard method for large mucosal defect closure without dead space between the normal mucosa and mucosal defect has not yet been established. We invented clip-line closure with the re-openable clip over line method (ROLM) for complete closure of the mucosal defect left after gastric ESD.

In clip-line closure using ROLM, only re-openable clips (SureClip; 8 or 16 mm; MC Medical, Tokyo, Japan) and a line (0.23 mm nylon line) are used. First, the line is tied to one tooth of a re-openable clip, which is then inserted into the accessory channel without the endoscope being withdrawn (▶ Fig. 1; ▶ Video 1). The clip is then positioned so that it grips the margin of the mucosal defect. Next, the end of the line exiting the accessory channel of the endoscope is passed through the hole in one tooth of a second re-openable clip, and this re-openable clip is inserted into the endoscope (the ROLM). The second clip is placed on the opposite side of the defect, with the muscular layer of the mucosal defect being grasped by the tooth of the re-openable clip through which the line has been passed. The teeth of the re-openable clips through which the line passes are therefore continuously fixed by the line, preventing the clips from being buried into the side of the muscle layer. Repeating ROLM gradually closes the mucosal defect from the anal to the oral side. ▶ Video 1 shows an in vitro model and a patient example of mucosal defect closure post-gastric ESD using clip-line closure with ROLM (▶ Fig. 2).

Clip-line closure using ROLM can completely close a large gastric mucosal defect without leaving dead space between the normal mucosa and the mucosal defect.

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Competing interests

The authors declare that they have no conflict of interest.

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