Closure of full-thickness perforation following endoscopic submucosal dissection of a gastric tumor near an anastomosis, using the reopenable clip-over-line method

Early gastric tumors can be completely resected using endoscopic submucosal dissection (ESD). However, ESD is challenging for tumors located above a gastric anastomosis, and intraoperative perforation can create difficulty [1]. We have developed a closure technique using reopenable clips with a hole in one jaw (or “arm”) of the clip (Sureclip 8 mm; Micro-Tech, China) and a line (nylon, 0.22 mm) that allows complete closure of thick mucosa and muscle layers, such as those in the stomach. We have previously described the reopenable clip-over-line (RCOL) technique [2, 3]. In this report, we present complete defect closure using the RCOL method after perforation during ESD at a gastric anastomosis.

A 74-year-old woman presented with an early gastric tumor at the anastomosis site of a Billroth II gastrectomy (▶ Fig. 1). We performed a complete resection with ESD. The resected specimen size was approximately 50 mm, and a full-thickness defect of approximately 15 mm was observed on the jejunal side of the mucosal defect. We closed the defect using the RCOL method. A calibrated, small-caliber tip, transparent hood with a tip tapering to 4 mm was used for precise placement of the reopenable clips [4].

First, a line was tied to one jaw of a reopenable clip and this first clip was inserted through the accessory channel. The reopenable clip was then deployed to grasp both the mucosa and the muscle layer at the margin of the defect. Outside the patient, the other end of the line was pulled through the hole in a second reopenable clip. This second reopenable clip was then inserted through the accessory channel guided by the line passing through the hole in the jaw of the clip, and deployed similarly to the first clip. With traction applied to the line, several clips were successively slid along the line through the channel and placed on the defect to gradually close the perforation. When the defect was completely closed, the line was fixed to the normal mucosa using the modified locking-clip technique [5] and then cut. The duration from the first clip placement to the last clip placement was 34 minutes, and 35 clips were used.

Endoscopy_UCTN_Code_TTT_1AQ_2AG

Competing interests

The authors declare that they have no conflict of interest.
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References