Circumferential suture delivery method of polyglycolic acid sheets for gastric postendoscopic submucosal dissection ulcers

Polyglycolic acid (PGA) sheets with fibrin glue are reportedly effective in preventing post-procedural bleeding in gastric endoscopic submucosal dissection (ESD) [1–4]. However, it is challenging to deliver and place the PGA sheet over the target ulcer in the correct position as the sheet is easily crumpled.

We have developed an innovative and reliable delivery method by sewing the circumferential margin of the PGA sheet with a polydioxanone suture (suture size 0), which creates tension and prevents the PGA sheet from crumpling during delivery (Fig. 1; Video 1). An important step is that the start and end points of the suture must intersect in order to secure it (Fig. 1 a). The polydioxanone suture is not only absorbable but also thick enough to create sufficient tension. An 81-year-old man was referred to our hospital for ESD treatment of a 20-mm early gastric neoplasm in the mid-body of the stomach (Fig. 2a). The lesion was successfully resected (Fig. 2 b, c), resulting in a 40-mm post-ESD ulcer. A PGA sheet equipped with a polydioxanone suture that had been prepared as described above was applied to the ulcer. Forceps were used to grasp the point of suture intersection. As a result, the shape of the PGA sheet was maintained, even as it passed through the overtube and esophagus, and the sheet was delivered and placed in the correct position within 2 minutes (Fig. 2 d, e). A second-look endoscopy performed on the day after the ESD showed that the PGA sheet had remained in place (Fig. 2 f). The patient was discharged without any complications.

The PGA sheet equipped with a polydioxanone suture is a simple and reliable method that can be applied to any ulcer size to increase the success rate and efficiency of PGA sheet placement.

Competing Interests

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