Use of a detachable snare with polyglycolic acid sheets in a simple and novel shielding method for post-endoscopic submucosal dissection ulcers

Many reports have described a shielding method involving the use of polyglycolic acid (PGA) sheets and fibrin glue as a means to prevent post-endoscopic submucosal dissection (ESD) complications [1–5]. During this procedure, however, a PGA sheet under little tension easily shrinks when exposed to mucus. Therefore, appropriate PGA sheet delivery is required to keep the sheet dry and maintain its shape.

We demonstrate a simple and novel shielding method with autologous fibrin glue and a PGA sheet (▶ Video 1). We performed gastric ESD for a 20-mm lesion at the lesser curvature of the body. The size of post-ESD ulcer was 40 × 30 mm (▶ Fig. 1). The equipment used consisted of a PGA sheet (NV-M-015G; Gunze, Kyoto, Japan) and a detachable snare (HX-400U-30; Olympus, Tokyo, Japan) (▶ Fig. 2a). First, a PGA sheet was cut to the size of the endoscopic detachable snare (65 × 40 mm) and four points on the PGA sheet were connected to the snare using silk thread (▶ Fig. 2b). The sheet was captured by an endoscopic clip (ROCC-D-26-235-C; Micro-Tech, Nanjing, China) and anchored using clips around the sides of the gastric floor. This method resulted in the ulcer being fully covered by a single PGA sheet (▶ Fig. 3a). The fixed PGA sheet then had autologous fibrinogen and thrombin sprayed onto it simultaneously to bond it. The procedure time was 5 minutes. Follow-up endoscopy the day after the ESD showed full coverage of the ulcer by the PGA sheet (▶ Fig. 3b). In this method, the detachable snare prevents the sheet from shrinking, even when it comes into contact with mucus. Moreover, this novel shielding method is a more rapid procedure because it allows a large size sheet (65 mm) to be applied in one go. In our study, we found that, using this method, a large PGA sheet can be easily applied to a post-ESD ulcer in a short time.

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Fig. 3 Endoscopic images showing: a the ulcer bed fully covered by a single polyglycolic acid (PGA) sheet; b continued full coverage of the ulcer by the PGA sheet on follow-up 1 day after the endoscopic submucosal dissection.