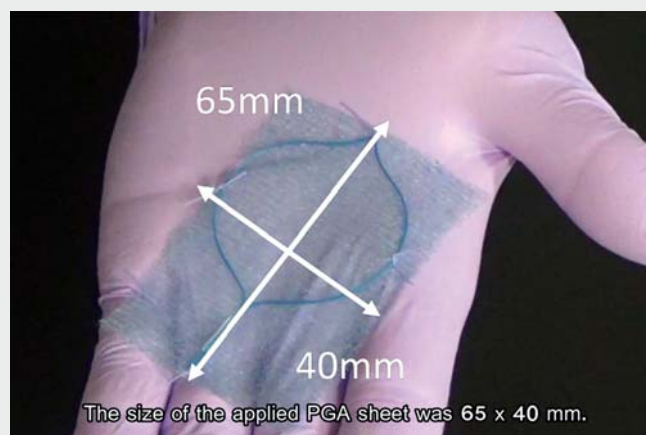


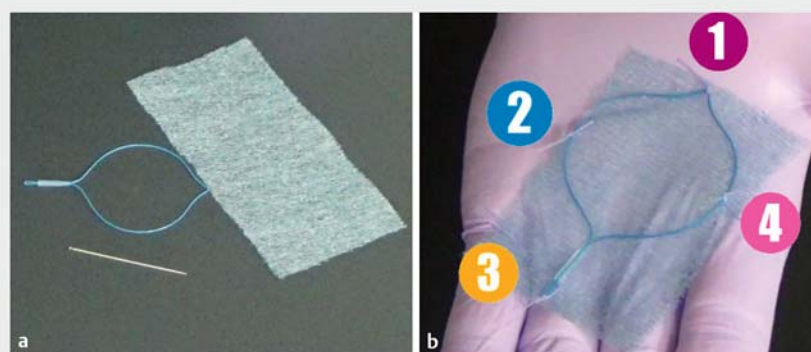
## Use of a detachable snare with polyglycolic acid sheets in a simple and novel shielding method for post-endoscopic submucosal dissection ulcers



**▶ Video 1** A single polyglycolic acid (PGA) sheet of 65×40 mm is easily and quickly applied to a post-endoscopic submucosal dissection ulcer using a detachable snare.



**▶ Fig. 1** Endoscopic image showing a 40×30-mm post-endoscopic submucosal dissection ulcer on the lesser curvature of the stomach.



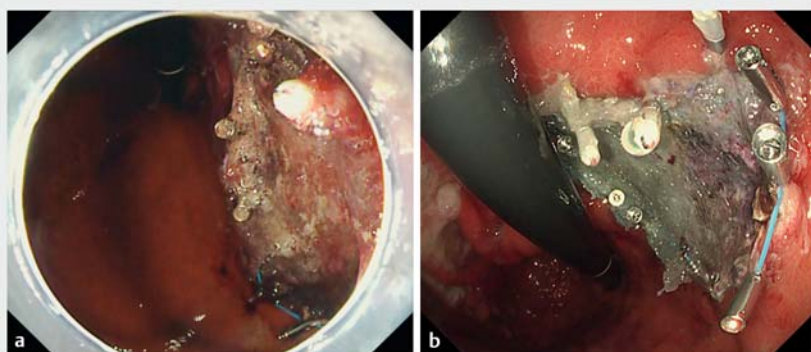
**▶ Fig. 2** Photographs showing: **a** the equipment used, which consisted of a polyglycolic acid (PGA) sheet and a detachable snare; **b** the PGA sheet attached to the snare at four points using silk thread.

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.

### Competing interests

The authors declare that they have no conflict of interest.

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