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. 1a). 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. 2b, 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. 2d, e). A second-look endoscopy performed on the day after the ESD showed that the PGA sheet had remained in place (▶ Fig. 2f). 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.

Endoscopy_UCTN_Code_TTT_1AO_2AD

Competing Interests

E. Ihara has participated in funded research and received a lecture fee from Takeda Pharmaceutical Co., Ltd. and belongs to the endowed course supported by Ono Pharmaceutical Co., Ltd., Miyarisan Pharmaceutical Co. Ltd., Sanwa Kagaku Kenkyusho Co., Ltd., Otsuka Pharmaceutical Factory, Inc., Fujifilm Medical Co., Ltd., Thermo Corporation, Fancl Corporation, Ohga Pharmacy, and Abbott Japan, LLC. M. Esaki, M. Kubokawa, Y. Minoda, H. Ogino, T. Osogawa, and Y. Susuki declare that they have no conflict of interest.
The authors

Yusuke Suzuki1,2, Takashi Osoegawa2, Masaru Kubokawa2, Mitsuru Esaki1,2, Haruei Ogino1, Eikichi Ihara1,3
1 Department of Medicine and Bioregulatory Science, Graduate School of Medical Sciences, Kyushu University, Fukuoka, Fukuoka, Japan
2 Department of Gastroenterology, Aso Iizuka Hospital, Iizuka, Fukuoka, Japan
3 Department of Gastroenterology and Metabolism, Graduate School of Medical Sciences, Kyushu University, Fukuoka, Fukuoka, Japan

Corresponding author

Mitsuru Esaki, MD
Department of Medicine and Bioregulatory Science, Graduate School of Medical Sciences, Kyushu University, 3-1-1, Maidashi, Higashi-ku, 812-8582, Fukuoka, Japan
esaki_saiseikai@yahoo.co.jp

References


Bibliography

Endoscopy
DOI 10.1055/a-1934-9752
ISSN 0013-726X
published online 2022
© 2022, The Author(s).
This is an open access article published by Thieme under the terms of the Creative Commons Attribution-NonDerivative-NonCommercial License, permitting copying and reproduction so long as the original work is given appropriate credit. Contents may not be used for commercial purposes, or adapted, remixed, transformed or built upon. (https://creativecommons.org/licenses/by-nc-nd/4.0/)
Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany

ENDOSCOPY E-VIDEOS
https://eref.thieme.de/e-videos

Endoscopy E-Videos is an open access online section, reporting on interesting cases and new techniques in gastroenterological endoscopy. All papers include a high quality video and all contributions are freely accessible online. Processing charges apply (currently EUR 375), discounts and waivers acc. to HINARI are available.

This section has its own submission website at https://mc.manuscriptcentral.com/e-videos

Fig. 2 Endoscopic images showing: a 20-mm early gastric neoplasm in the mid-body of the stomach; b the area to be resected by endoscopic submucosal dissection (ESD); c the subsequent post-ESD ulcer (40 mm in size); d the polyglycolic acid (PGA) sheet equipped with the polydioxanone suture in position over the post-ESD ulcer; e the PGA sheet after fixation to the ulcer with fibrin glue; f on the day after the ESD, the PGA sheet still in position over the ulcer.