Supplementary uses for a novel injecting needle-knife that facilitate esophagogastric endoscopic submucosal dissection

A new needle-type endoknife, ProKnife (Boston Scientific Corp., Marlborough, Massachusetts, USA), for endoscopic submucosal dissection (ESD), has two features that are similar to other endoscopic knives that permit injection as well as dissection [1]. The first is a 24-gauge injection lumen opening at the needle tip, which enables focal injection of highly viscous liquids, such as hyaluronic acid [2, 3]. The second is a disk-shaped blunt tip that can selectively hook fibrotic tissues and blood vessels in the submucosal layer without breaking these structures before electric current flows. We present two cases in which these features were highly advantageous in terms of their additional uses during ESD procedures (▶ Video 1).

Case 1. Although the color change when using Lugol’s solution is useful for diagnosing the extent of superficial esophageal squamous cell carcinoma, it disappears within a few minutes, resulting in the frequent need to reapply it to large lesions. Using the ProKnife, Lugol’s solution could be repeatedly sprayed without device exchange (▶ Fig. 1 a–c). Moreover, this advantage minimized the amount of focal spray, reducing the risk of aspiration due to backflow. After marking, Lugol’s solution in the lumen of the device, as well as in the lesion area, was neutralized by flushing with sodium thiosulfate solution (▶ Fig. 1 e), so that the same device could be used throughout the procedure.

Case 2. Although triamcinolone injection into the submucosa after ESD for gastric/esophageal cancer has been reported to be useful in preventing postoperative stenosis [3, 4], it poses a risk of perforation when it is inadvertently injected into the muscularis and requires meticulous manipulation. In this case, after ESD for a...
lesion at the gastric cardia, triamcinolone could be injected selectively into the residual submucosa using a ProKnife. The process seemed safe because the blunt tip did not penetrate into the muscularis even when strong pressure was applied. Esophagogastroduodenoscopy performed 2 months later, showed no stenotic change at the ESD scar (Fig. 2).

Endoscopy_UCTN_Code_TTT_1AO_2AG

Acknowledgments
We are very grateful to Brian K. Breedlove, Associate Professor, Tohoku University School of Science for English proofreading.

Competing Interest
The authors declare that they have no conflict of interest.

The authors
Takeshi Shimizu, Yoshihide Kanno, Taku Yamagata, Tetsuya Ohira, Yoshihiro Harada, Kei Ito
Department of Gastroenterology, Sendai City Medical Center, Sendai, Japan

Corresponding author
Takeshi Shimizu, MD
Department of Gastroenterology, Sendai City Medical Center, 5-22-1 Tsurugaya, Miyagino, Sendai 983-0824, Japan
Fax: +81-222529431
takeshi.shimizu@openhp.or.jp

References


Bibliography
Endoscopy
DOI 10.1055/a-1931-4214
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