Digestive Endoscopy 2021; **33**: e77–e78 doi: 10.1111/den.13950

DEN Video Article

Safer local injection of triamcinolone acetonide for preventing post-endoscopic submucosal dissection esophageal stenosis

Yoshitsugu Misumi, Kouichi Nonaka and Maiko Kishino

Department of Digestive Endoscopy, Tokyo Women's Medical University Hospital, Tokyo, Japan

BRIEF EXPLANATION

ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) is an established treatment for superficial neoplasia throughout the digestive tract, including the esophagus. While large-sized esophageal superficial neoplasia can be resected en bloc with ESD, there is a 90% probability of postoperative stenosis when the mucosal defect is over three-quarters of the circumference after treatment.[1] Once stenosis occurs, the patient's quality of life decreases significantly, and frequent balloon dilation is often needed to treat stenosis.[2] Therefore, preventing stenosis after extensive esophageal ESD is essential. One method involves the local injection of triamcinolone acetonide (TA) into the thin submucosal layer remaining in the mucosal defect.[3] Generally, a needle is used for submucosal injections during ESD; however, sharp-tipped needles may mistakenly traverse the submucosa, injecting TA into the muscle layer. Reportedly, this increases the risk of accidental esophageal perforation and abscess formation.[4] Here, we report a new method of injecting TA to prevent stenosis after ESD (Video S1).

The local injection was TA diluted to 5 mg/mL with saline solution. Instead of a conventional injection needle, we used a spraying tube (fine jet, spray type; TOP Corporation, Tokyo, Japan) with a dull, round tip. The spraying tube was inserted into the submucosal layer remaining at the ulcer base after ESD. When the syringe is pressed, a small, cloudy protrusion forms in the remaining submucosal layer at the ulcer base, indicating that sufficient triamcinolone has been injected. Considering that TA injection into the muscularis propria is unlikely with this method, it is considered an extremely safe method that is easy, fast, and requires no careful manipulation. Although the tube's tip is dull, the amount of TA injected is sufficient and similar to when an injection needle is used (Fig. 1).

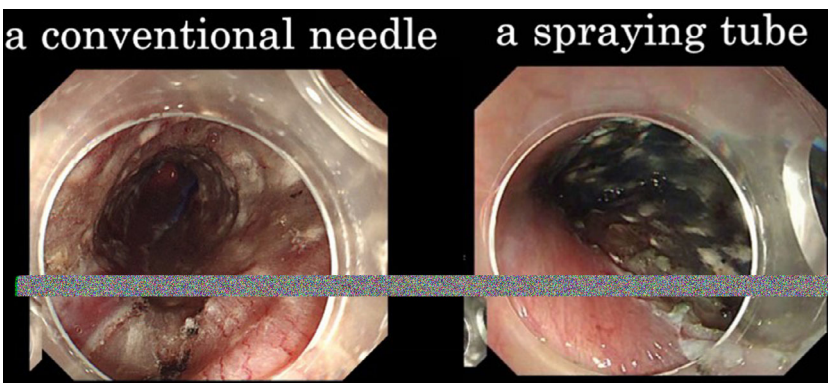

Figure 1 A submucosal injection equivalent to using an injection needle is possible even with a spraying tube.

Corresponding: Yoshitsugu Misumi, Department of Digestive Endoscopy, Tokyo Women's Medical University Hospital, 8-1, Kawada-chou, Shinjuku-ku, Tokyo 162-8666, Japan. Email: yoshikft34@gmail.com
Received 26 January 2021; accepted 8 February 2021.

Both were scarred without stenosis. Using this new method with a spraying tube could help prevent stenosis after esophageal ESD.

The authors declare that they have no conflict of interest.

ACKNOWLEDGMENTS

WE WOULD LIKE to thank Editage (www.editage.com) for English language editing. We would also like to thank Dr. Tomoyuki Mochizuki of Kawagoe Gastrointestinal Hospital and Dr. Akira Tomioka of the National Defense Medical College Hospital for providing images.

REFERENCES

1 Ono S, Fujishiro M, Niimi K *et al*. Predictors of postoperative stricture after esophageal endoscopic submucosal dissection for superficial squamous cell neoplasm. *Endoscopy* 2009; **41**: 661–5.

2 Martinek J, Juhas S, Dolezel R *et al*. Prevention of esophageal strictures after circumferential endoscopic submucosal dissection. *Minerva Chir* 2018; **73**: 394–409.

3 Hashimoto S, Kobayashi M, Takeuchi M *et al*. The efficacy of endoscopic triamcinolone injection for the prevention of esophageal stricture after endoscopic submucosal dissection. *Gastrointest Endosc* 2011; **74**: 1389–93.

4 Yamashita S, Kato M, Fujimoto A *et al*. Inadequate steroid injection after esophageal ESD might cause mural necrosis. *Endosc Int Open* 2019; **7**: E115–21.

SUPPORTING INFORMATION

ADDITIONAL SUPPORTING INFORMATION may be found in the online version of this article at the publisher's web site.

Video S1 Safer local injection of triamcinolone for preventing post-ESD esophageal stenosis.