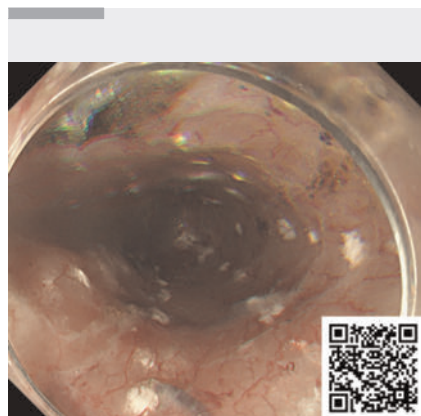


Successful prevention of balloon dilatation after complete circumferential endoscopic submucosal dissection including long-segment Barrett's esophagus



▶ Video 1 Weekly intensive triamcinolone acetonide injections were beneficial for preventing stricture in complete circumferential esophageal endoscopic submucosal dissection.

Triamcinolone acetonide (TA) injection into submucosa is useful for prevention of stricture after esophageal endoscopic submucosal dissection (ESD) [1]. However, despite attempts with steroid use, complete circumferential esophageal ESD still leads to high stricture rates (36.4% to 85.7% [2–4]). Although endoscopic balloon dilatation (EBD) is often necessary for stricture relief, it carries the risk of perforation [2]. In addition, in

long-segment Barrett's esophagus (BE) with Barrett's esophageal adenocarcinoma (BEA), post-ESD ulcers can be too long, making EBD challenging. Thus, alternative stricture methods preventing EBD are needed.

Here we present a case of successful prevention of EBD after a circumferential ESD for BEA in long-segment BE (longitudinal length of resected area was 12 cm endoscopically) with intensive TA injections (▶ **Video 1**). ESD utilized MucoUp (Seikagaku, Tokyo, Japan and Boston Scientific Japan, Kanagawa, Japan) with indigo carmine, 1.5-mm DualKnife J (Olympus Medical Systems, Tokyo, Japan), and the clip-and-line method [5]. En bloc resection, including the entire long-segment BE (Prague classification C8M9), was performed (▶ **Fig. 1**). The pathological finding was BEA with unclear horizontal margin and negative vertical margin (▶ **Fig. 2**).

TA (KENACOLT-A 50 mg/5 mL; Bristol Myers Squibb, Tokyo, Japan) was diluted to 5 mg/mL with normal saline. A 26-gauge 4-mm needle (SG-A 26G FE 4 mm 2200 mm; TOP Corporation, Tokyo, Japan) was used for injection. TA injection into the submucosa, starting immediately post-ESD, was performed at intervals of 0.5 mL (TA 2.5 mg), prevent-

ing injury to the muscularis propria. Subsequent injections occurred 3 days post-ESD and then weekly for 21 weeks, with additional injections on weeks 23 and 25, totaling 25 sessions. A total of 50–100 mg TA was administered in each session. At 40 weeks post-ESD, complete epithelialization without stricture was achieved (▶ **Fig. 3**).

Weekly intensive TA injections alone were beneficial for preventing stricture in complete circumferential esophageal ESD even if the resected area was long.

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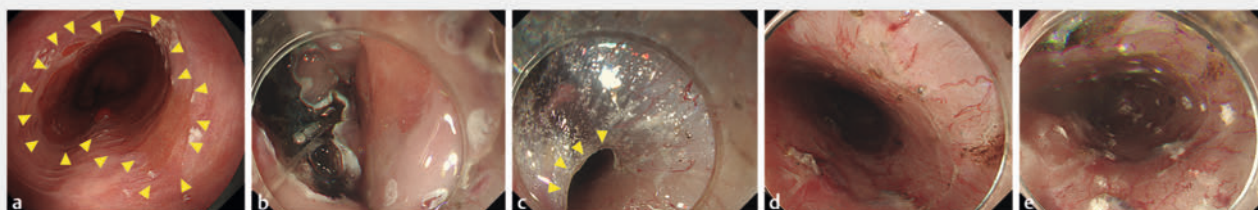
Conflict of Interest

The authors declare that they have no conflict of interest.

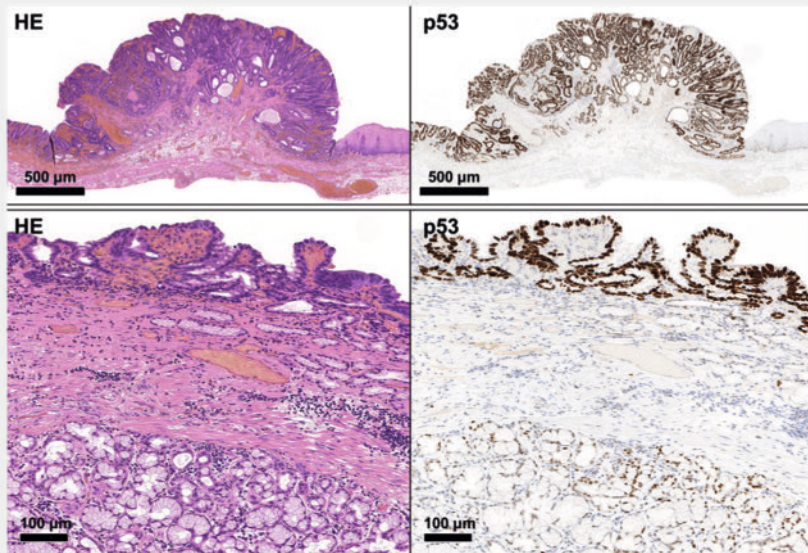
The authors

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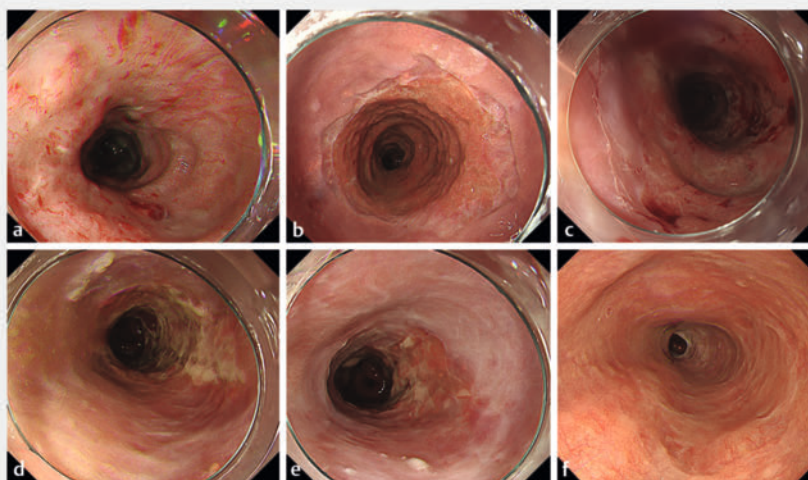
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▶ Fig. 1 The details of endoscopic submucosal dissection (ESD). **a** The patient was diagnosed with circumferential Barrett's adenocarcinoma with long-segment Barrett's esophagus (BE) (C8M9 according to the Prague classification). The yellow arrows indicate the proximal boundary of long-segment BE. **b** ESD was performed with the clip-and-line method. **c** ESD was performed by creating a submucosal tunnel. The yellow arrows indicate the edge of the submucosal tunnel. **d** Immediately after ESD, en bloc resection was performed including the entire long-segment BE. The longitudinal length of the post-ESD defect measured endoscopically was up to 12 cm from the oral to the anal side. **e** A total of 100 mg of triamcinolone acetonide (TA) was locally injected into the remaining submucosa.



► **Fig. 2** Pathological findings of the resected specimen. Histological photograph of an adenocarcinoma at the esophagogastric junction. Atypical glandular epithelium forms irregular tubules, creating polypoid, protruding lesions. Immunostaining shows a mutant pattern of p53 overaccumulation. Meanwhile, a flatly spreading adenocarcinoma is observed around the protrusions. Submucosal esophageal glands in the columnar epithelium region are identified, suggesting an adenocarcinoma arising in Barrett's esophagus.



► **Fig. 3** The healing process of the post-ESD ulcer. The epithelialization progressed in chronological order from ► **Fig. 3 a–f**. A total of 50 mg or 100 mg of TA was locally injected into the regenerating submucosal layer from ► **Fig. 3 a–e**, respectively. **a** 1 week after ESD (3rd local injection of TA). **b** 4 weeks after ESD (6th local injection of TA). **c** 8 weeks after ESD (10th local injection of TA). **d** 12 weeks after ESD (14th local injection of TA). **e** 20 weeks after ESD (22nd local injection of TA). **f** 40 weeks after ESD. Complete epithelialization without any stricture was achieved, and a ϕ 9.8-mm scope (GIF-H290T; Olympus Medical Systems, Tokyo, Japan) passed easily.

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