

## Delayed perforation after intralesional triamcinolone injection for esophageal stricture following endoscopic submucosal dissection

Stricture is a major complication of wide endoscopic mucosal resection (ESD) of the esophagus and its management requires multiple balloon dilation sessions [1]. Endoscopic intralesional injection of triamcinolone is being used as a prophylactic treatment in patients in whom wide areas of mucosa were removed with ESD [2, 3].

A 60-year-old man developed dysphagia 1 month after ESD for superficial esophageal carcinoma. Esophagogastroduodenoscopy (EGD) showed a stricture in the mid-esophagus (Fig. 1), which did not allow the endoscope to pass through. The patient then underwent endoscopic balloon dilation. The surface of the muscularis propria was partially exposed but there was no endoscopic evidence of esophageal perforation just after the dilation. Subsequently, 1 mL (10 mg) aliquots of triamcinolone (Kenakort A 40 mg/5 mL, Bristol-Myers Squibb, Tokyo, Japan) were injected into the submucosa, until a total amount of 100 mg of triamcinolone had been administered. A few punctures penetrated the muscularis propria (Fig. 2). After 24 hours of treatment, the patient had chest pain and fever. Chest radiography performed by his general physician revealed pneumomediastinum, and he was immediately admitted in our hospital. A chest computed tomography (CT) scan confirmed pneumomediastinum and periesophageal fluid collection. EGD showed a large esophageal perforation at the injection site (Fig. 3). The patient underwent surgery, and extensive esophageal perforation was seen in the resected esophagus. We suspect that triamcinolone injected into the muscularis propria might have caused tissue damage and resulted in delayed perforation and periesophageal abscess [4]. Prophylactic injections of intralesional steroids after creation of wide mucosal defects with endoscopic mucosal resection/ESD are increasingly performed in Japan; however, the hazardous complication presented here should be kept in mind and direct puncture of the muscularis propria should be avoided.

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Competing interests: None

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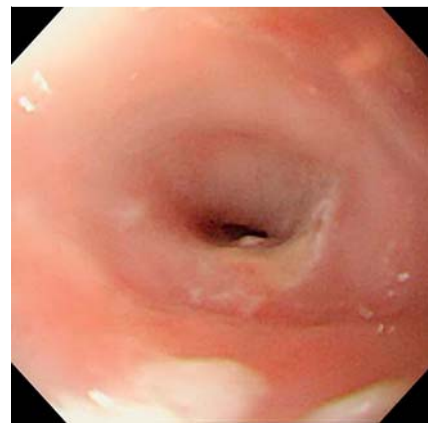
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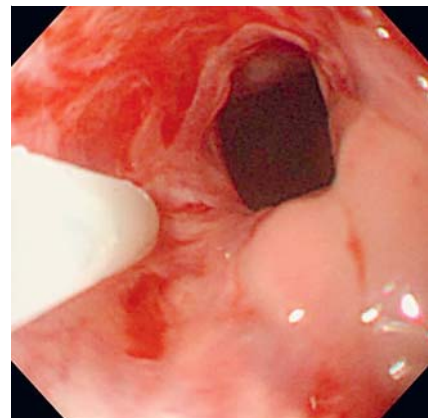
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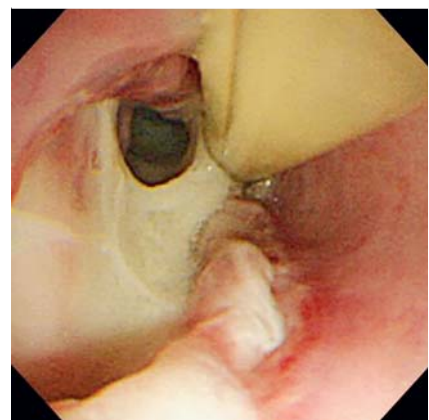
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**Fig. 1** Esophagogastroduodenoscopy (EGD) showing stricture in the mid-esophagus in a 60-year-old man with dysphagia after endoscopic submucosal dissection (ESD) for superficial esophageal carcinoma.



**Fig. 2** Triamcinolone was injected into the submucosal tissue; a few of the punctures penetrated the muscularis propria.



**Fig. 3** Esophagogastroduodenoscopy (EGD) showing large esophageal perforation.