EDITORIAL

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CLINICAL ENDOSCOPY

Prevention of stricture after endoscopic submucosal dissection for esophageal cancer: intralesional steroid infusion using a spray tube

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See "Intralesional steroid infusion using a spray tube to prevent stenosis after endoscopic submucosal dissection of esophageal cancer" by Atsushi Goto, Takeshi Okamoto, and Ryo Ogawa, et al., on page 520–524.

Endoscopic submucosal dissection (ESD) is widely used for the treatment of superficial esophageal squamous cell carcinoma with a low risk of lymph node metastasis in patients because of its minimal invasiveness and good clinical outcomes.[1] ESD enables *en bloc* and R0 resections of large lesions and accurate pathological evaluations.[2] However, esophageal ESD is technically challenging because of the narrow lumen and thin wall of the esophagus and is associated with an increased risk of esophageal stricture and perforation.[3]

Extensive esophageal ESD can lead to post-ESD esophageal stricture formation. The risk of esophageal stricture reportedly increases in patients with mucosal defects involving >75% of the esophageal circumference.[4] Furthermore, in the absence of preventive measures, esophageal strictures develop in 66% to 88% and 100% of the patients with mucosal defects involving >75% of the esophageal circumference and the entire esophageal circumference, respectively.[5,6] Post-ESD esophageal strictures cause dysphagia, greatly reduce quality of life, and require multiple endoscopic dilations in patients. Therefore, most clinical practice guidelines for esophageal ESD recommend prophylactic treatment of post-ESD esophageal strictures.[5-7] The 2020 Korean clinical practice guidelines for esophageal ESD recommend the use of oral steroid or local steroid injection therapy in patients with mucosal defects involving >75% of the esophageal circumference.[5] The esophageal cancer practice guidelines 2017, edited by the Japan Esophageal Society, recommend the use of prophylactic endoscopic balloon dilatation, local steroid injection, or oral steroid therapy,[7] while the 2020 Japan Gastroenterological Endoscopy Society guidelines recommend the use of local triamcinolone injection in patients with mucosal defects involving >75% of the esophageal circumference.[6] A study comparing the efficacies of oral steroid therapy and prophylactic endoscopic balloon dilatation showed that oral steroid therapy was superior to prophylactic endoscopic balloon dilatation for esophageal stricture prevention.[8] Patients receiving oral steroid therapy usually receive prednisolone at a starting dose of 30 mg/day, which is tapered over 2 to 12 weeks.[5] However, oral steroid use may cause systemic adverse events such as immunosuppression, infection, worsening diabetes, and peptic ulcer disease. Local triamcinolone or dexamethasone injection into the post-ESD esophageal ulcer site effectively prevents esophageal stricture and induces fewer systemic adverse effects than does oral prednisolone therapy owing to minimal systemic absorption. The steroid injected into the ulcer site is gradually

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absorbed over a few weeks, which inhibits inflammation and fibrosis in the post-ESD esophageal ulcer. However, the local steroid injection technique requires highly skilled endoscopists because the steroid needs to be injected into the residual submucosal tissue of the ulcer bed at multiple sites. Perforation can be caused by the injection needle itself, and delayed perforation or infection such as abscess formation following steroid injection into the muscle layer may occur.[9,10] Therefore, great care should be taken to avoid injecting steroids into the muscle layer during local steroid injection therapy. To date, no study has conclusively determined whether local steroid injection or oral steroid therapy is more effective for post-ESD esophageal strictures. A Japanese prospective comparative study on the stenosis-preventive effect of submucosal triamcinolone injection and oral prednisolone treatment (JCOG1217) is ongoing, and its results would help to determine the optimal post-ESD esophageal stricture prevention method.[11]

In a study recently published in *Clinical Endoscopy*, Goto et al.[12] described a new intralesional steroid infusion method using a spray tube and evaluated its efficacy and safety in preventing stenosis after ESD for superficial esophageal cancer. Intralesional steroid infusion using a spray tube was performed in 27 patients immediately after ESD with ≥75% of the luminal circumference resected. Of the 27 patients, 22 (81.5%) had favorable outcomes without stenosis. Stenosis was found in five patients (18.5%) who underwent endoscopic balloon dilatation. No complications associated with intralesional steroid infusion were observed. Therefore, this novel method was determined to be effective and safe for stenosis prevention after ESD for superficial esophageal cancer. Considering the technical difficulties and complications associated with local steroid injection, the intralesional steroid infusion method is an attractive technical option for endoscopists who are not sufficiently familiar with the local steroid injection method. However, this study was limited by its single-center design and the lack of comparison between this novel technique and conventional needle-based methods. Further large-scale randomized studies comparing the two methods are needed to draw definitive conclusions.

Conflicts of Interest

The author has no potential conflicts of interest.

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