

Triamcinolone injection and shielding with polyglycolic acid sheets and fibrin glue for the prevention of postoperative stricture after esophageal endoscopic submucosal dissection.

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Publication Date: 2016

Abstract:

Background and Study Aims: Triamcinolone injection is an effective and widely used method for preventing postoperative stricture after wide-spreading esophageal endoscopic submucosal dissection (ESD), but even with this method there is a stricture risk of 10-62%, and there is a need for an even more effective method. The objective of our study was to evaluate the efficacy of combining this method with the shielding method with polyglycolic acid (PGA) sheets and fibrin glue, another novel and effective method for the prevention of postoperative stricture. **Patients and Methods:** After approval by the Institutional Review Board and trial registry (UMIN000014642) in October 2014, we enrolled patients with a diagnosis of superficial esophageal squamous cell carcinoma covering over half the circumference of the esophagus in the study group. Immediately after the enrolled patients underwent esophageal ESD, a total of 40mg of triamcinolone acetone was injected into the submucosal layer of the ESD defect. After this, a PGA sheet was adhered to the post-ESD defect with fibrin glue. Following protocol treatment, all patients underwent outpatient follow-up for a minimum of three months. As the historical control group, we extracted all patients at our institute who had undergone ESD for superficial esophageal squamous cell carcinoma covering over half the circumference of the esophagus during 2002 to June 2013. Statistical analysis of the incidence of postoperative stricture and required endoscopic balloon dilation (EBD) sessions was

performed. Patients who underwent salvage surgery after non-curative ESD were excluded from analysis. Results: Between December 2014 and July 2015, 15 patients were enrolled in the study group. 4 patients were excluded from analysis due to salvage esophagectomy. Of the 2 total circumferential cases, postoperative stricture was successfully prevented in 1 case, while stricture occurred and 8 sessions of EBD were required in the other case. All cases in the historical control group turned out to be cases of semi-circumferential ESD, and so we have performed a sub-analysis comparing the 9 semi-circumferential patients in the study group with the 29 patients in the historical control group. There were no significant differences between the background factors of the two groups. As for the efficacy of this method, both the incidence of postoperative stricture (11.1% vs. 62.1%, $p<0.01$), and the number of EBD sessions required (median 0 vs. 3, $p=0.03$) was significantly smaller in the study group than in the control group. Conclusion: The combination of triamcinolone injection and the shielding method with PGA sheets and fibrin glue is a promising method for preventing stricture after esophageal ESD. Prospective studies for confirmation of efficacy and safety are required. (Figure Presented).