Polyglycolic acid sheets with fibrin glue for the prevention of postoperative stricture after esophageal endoscopic submucosal dissection.

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Abstract:

Background and study aims: Postoperative stricture after endoscopic submucosal dissection (ESD) for wide-spreading superficial esophageal neoplasms is a very common yet severe complication. Although the use of steroids after ESD is known to decrease the incidence of postoperative stricture, this method is accompanied with a risk of severe adverse effects, and there is a clinical need for a safer method of prevention. The use of polyglycolic acid (PGA) sheets, a surgical suture material, adhered with fibrin glue, has been reported to safely minimize scar contracture in other medical fields. The aim of this study was to evaluate the efficacy of applying PGA sheets with fibrin glue to the post-ESD defect for the prevention of postoperative stricture after esophageal ESD. Patients and Methods: After ethics committee approval and trial registry in July 2013, we enrolled subjects 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 subjects underwent esophageal ESD, a PGA sheet was adhered to the post-ESD defect with fibrin glue. Following protocol treatment, all subjects underwent outpatient follow-up for a minimum of three months. As a historical control group, we listed all subjects 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. In order to accurately

access the efficacy of PGA sheets and fibrin glue, subjects with steroid use after ESD were excluded from analysis. Results: Between September 2013 and July 2014, 13 subjects were enrolled in the study group. For the historical control group, there were a total of 36 consecutive subjects who met our inclusion criteria, with a follow-up period of over 3 months. After exclusion, 12 subjects in the study group and 35 subjects in the historical control group were analyzed. There were no statistical differences in the background factors between the groups. The incidence of stricture was significantly lower in the study group (25.0% vs. 62.9%, p=0.02). The number of required EBD sessions was also significantly lower in the study group (0.9+/-2.1 vs. 6.8+/-8.6, p=0.01). There were no other adverse events in either group. Conclusion: The application of PGA sheets with fibrin glue seems to be an effective and safe method for the prevention of postoperative stricture after esophageal ESD. Although further improvements of this method and prospective studies for confirmation of efficacy are required, this method is a promising novel technique.(figure present).