Endoscopic tissue shielding method with polyglycolic acid sheets and fibrin glue decreases the risk of bleeding after endoscopic submucosal dissection of gastric neoplasms.

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Abstract:

INTRODUCTION: Prevention of bleeding after endoscopic submucosal dissection (ESD) for gastric neoplasms is still an important problem, but there have been no preventive measures other than proton pump inhibitor use and preventive coagulation of visible vessels on the artificial ulcer after ESD. AIMS & METHODS: We aimed to evaluate the efficacy and safety of the tissue shielding method with polyglycolic acid (PGA) sheets and fibrin glue for preventing bleeding after gastric ESD. This is a non-randomized historical controlled study. We defined high-risk patients for post-ESD bleeding as follows: 1) those who took antithrombotic drugs regularly; or 2) those who were expected to undergo large mucosal resection (>= 40mm). We enrolled patients who were scheduled to undergo gastric ESD and had above-mentioned risk factors from July 2013 as the study group (Group A). We placed PGA sheets on the mucosal defect and fixed with fibrin glue in the study group. Between January and July 2013, before the first enrolment of a study patient, 126 gastric neoplasms in 101 consecutive patients were treated with ESD. From this cohort, we extracted high-risk patients as the historical control group (Group B). We set the post-ESD bleeding rate as the primary endpoint to compare both groups. RESULTS: From July 2013 to February 2014, 45 ESD-induced ulcers in 41 highrisk patients for bleeding were enrolled in the study group. In the historical control group, 41 ESD-induced ulcers in 37 patients were extracted. The baseline characteristics were not significantly different between the two groups: sex (A: male 41/female 4, B:

male 34/female 7; P = 0.256); age (A: 73.6 +/- 7.5 yrs, B: 74.8 +/- 7.0 yrs; P = 0.482); antithrombotic drug use (A: 29 lesions, 66.4%, B: 23 lesions, 56.1%; P = 0.429); Heparin bridging therapy (A: 7 lesions, 15.6%, B: 3 lesions, 7.3%; P = 0.319); and the diameter of resected specimens (A: 40.1 +/- 12.4 mm, B: 43.9 +/- 15.1 mm; P = 0.206). Neither intraoperative perforation or delayed perforation occurred in the two groups. Post-ESD bleeding occurred at a rate of 6.7% in the study group (3 lesions), and 22.0% in the historical control group (9 lesions). There was a significant difference in the post-ESD bleeding rate between the two groups (P = 0.041). In the study group, post-ESD bleeding occurred only in heparin bridging therapy. In the study group, the procedural time for applying PGA sheets and fibrin glue was 20.4 +/- 9.5 min. CONCLUSION: The endoscopic tissue shielding method with PGA sheets and fibrin glue appears to be promising for the prevention of post-ESD bleeding.