Safety and efficacy of endoscopic submucosal dissection for non-ampullary duodenal neoplasms using polyglycolic acid felt and fibrin glue sealing with clips.

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Abstract:

Background and Aims: Endoscopic submucosal dissection (ESD) of non-ampullary duodenal neoplasms is often technically difficult because unstable scope operation makes it difficult to ensure an adequate field of view. In addition, since bile and pancreatic juice flow out of the papilla of Vater and the duodenal wall is thin, the risk of complications is higher than in other portions of the gastrointestinal tract. Therefore, immediate endoscopic closure is important for preventing postoperative complications such as delayed perforation and post-ESD bleeding secondary to bile and pancreatic juice exposure. Therefore, we suggest a more secure ESD technique for duodenal tumors that utilizes a "pocket-creation method" as well as a polyglycolic acid (PGA) felt and fibrin glue sealing with clips to prevent postoperative complications. Methods: A total of 26 lesions were treated with ESD from May 2009 to November 2014 at 3 facilities, including our department and 2 other affiliated hospitals. The treatment of post-ESD ulcers was divided into three groups. The clip group underwent clip closure only (n = 17). The PGA group (n = 4) underwent closure using a PGA felt and fibrin glue coating process alone. The clip+PGA group (n = 5) underwent a combined clip and PGA felt plus fibrin glue closure method. The incidence of complications, delayed perforation, and post-ESD bleeding were investigated. Results: The results of ESD (n = 26) were as follows: the intraoperative perforation rate was 7.7% (2/26), the delayed perforation rate was 3.8% (1/26), and the post-bleeding rate was 7.7% (2/26). The post-ESD complication rate of the clip, PGA, and

clip+PGA groups was 0% (0/17), 0% (0/4), and 20% (1/5) for delayed perforation and 5.9% (1/17)%, 25% (1/4), and 0% (0/5) for post-ESD bleeding, respectively. For cases with a resection diameter of less 20 mm, there was complete plication using the clip in all cases, whereas the complete plication rate was 69.2% (9/13) when the resection diameter was 20 mm or more (except in the PGA group). Delayed perforation occurred in 0% (0/9), 0% (0/4), and 25% (1/4) of lesions and post-ESD bleeding occurred in 0% (0/9), 25% (1/4), and 0% (0/4) of lesions. In the next day after ESD, the remain ratio of PGA felt of PGA group, clip+PGA groups was 50.0% (2/4), 80.0% (4/5), respectively. Conclusion: ESD for non-ampullary duodenal neoplasms is safe and associated with good outcomes. In cases of duodenal post-ESD ulcers where the major resection axis is 20 mm or more, adding a coating of PGA felt for incomplete plication is useful if full plication with a clip is difficult due to the large resection surface. Furthermore, a combined clip and PGA felt method may prevent postoperative complications.