A case of perforation during colorectal ESD with no serious adverse events after application of polyglycolic acid sheets and fibrin glue.

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Abstract:

Introduction: Endoscopic submucosal dissection (ESD) for large colorectal tumors is an effective method of treatment with a high curative resection rate, but is also accompanied with a relatively high rate of perforation. In cases where perforation cannot be endoscopically closed, emergency surgical treatment is frequently required. The use of polyglycolic acid (PGA) sheets, a surgical suture material, adhered with fibrin glue, has been reported to prevent leakage after surgical resection. However, there have been no reports on the efficacy of PGA sheets with fibrin glue after perforation during colorectal ESD. Methods: An asymptomatic 72-year-old male patient underwent colonoscopy due to positive fecal occult blood tests, resulting in the discovery of a laterally spreading tumor in the descending colon. The patient was referred to our institute, and preoperative magnifying endoscopy examination revealed characteristics that were suggestive of adenoma. However, there were irregular areas within the lesion, and early stage adenocarcinoma could not be ruled out. ESD was advised for en bloc resection. Results: ESD was performed at our endoscopy unit under conscious sedation. Treatment began smoothly, but as ESD progressed, the target submucosal layer regressed into a fibrotic layer. During dissection of the fibrotic layer perforation occurred, which further widened as dissection of the fibrotic layer continued, and eventually led to an enormous perforation with the underlaying omentum clearly visible. Endoscopic clip closure of the perforation was attempted, but complete closure was technically unfeasible. Clip closure of the perforations was discontinued, and as an emergency measure the perforation was covered with multiple strips of polyglycolic acid sheet, and adhered with fibrin glue. After this procedure, there

was no visible perforation remaining and no apparent signs of continuous gas leakage, achieving clinical complete closure of the perforations. The patient displayed a slight fever the day after ESD, but was otherwise asymptomatic, with no significant changes in laboratory findings. Postoperative CT findings revealed free air in the abdominal cavity, but with no signs of peritonitis. Oral diet was begun on day 7 after ESD, and the patient was discharged with no adverse events. Conclusion: This is a case report of colorectal perforation where the application of polyglycolic acid sheets and fibrin glue was effective in closure of perforation. In cases where complete clip closure of colorectal perforation is not technically feasible, this novel method may be useful for minimizing adverse events. Further evaluation is required for confirmation.