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Complication Forum

Severe necrotizing pancreatitis after endoscopic papillectomy in a patient with ampullary adenoma

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ABSTRACT

Summary of Event: A 38-year-old man diagnosed with ampullary adenoma was referred for further treatment, and initially treated with the endoscopic papillectomy without complications. Recurred lesions were found during follow-up and second procedure was planned. However, severe necrotizing pancreatitis with small bowel ileus occurred following the second endoscopic papillectomy for the recurrent lesion. He had to undergo bypass surgery (gastrojejunostomy) for persistent small bowel ileus, and repetitive percutaneous radiologic interventions for necrotic fluid collections in the abdominal cavity during a 6-month period of hospitalization.

Teaching Point: During endoscopic papillectomy for ampullary adenoma, every effort to prevent pancreatitis including the decision of appropriate resection extent, prophylactic pancreatic duct stenting, and rectal indomethacin should be made. If severe necrotizing pancreatitis with small bowel ileus occurs, and oral feeding is difficult, early bypass surgery should be considered. In addition, removal of necrotic material in the abdominal cavity requires continuous collaboration among endoscopists, intervention radiologists, and surgeons.

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Keywords: Endoscopic mucosal resection; Pancreatitis, acute necrotizing; Radiology, interventional; Surgery

Event Details

A 38-year-old man diagnosed with ampullary adenoma at the screening esophagogastroduodenoscopy was referred for further treatment. Tubular adenoma with low grade dysplasia was confirmed in the outside pathologic examination. He had no underlying diseases or medication taken. All blood tests including tumor markers were within normal range. Initial abdominal computed tomography (CT) revealed no abnormality around the ampulla of Vater. The first endoscopic papillectomy followed by pancreatic duct stenting was performed. He was discharged two days after the procedure without complications. The pathology result of the resected specimen was also tubular adenoma with low grade dysplasia. Three weeks after the procedure, remnant periampullary lesions were detected and ablated by argon plasma coagulation.

However, remnant periampullary adenomas (pathologically confirmed in the previous ablation session) were still noticed in the follow-up duodenoscopy performed 6 months after the first endoscopic papillectomy. Therefore, the second endoscopic resection was planned.

In the second procedure, submucosal saline injection was performed, and periampullary lesions were removed by piecemeal resection (Fig. 1). A pancreatic duct stent was not placed at that time because the orifice of pancreatic duct was not identified easily. Severe whole abdominal pain with fever developed after the procedure, and laboratory findings were consistent with acute pancreatitis. Although emergency endoscopic retrograde cholangiopancreatography with pancreatic duct stenting was performed on the next day, his symptoms got aggravated along with renal dysfunction. Despite sufficient fluid supply and meticulous medi-

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Fig. 1. The second endoscopic papillectomy resulting in severe pancreatitis. (A) Recurred lesions of ampullary and periampullary adenoma were seen. (B) Saline submucosal injection was performed and the lesions were lifted. (C) The lesions were removed by piecemeal resection using a snare.

Fig. 2. The first enhanced computed tomography following the procedure. Acute necrotic collections (arrows) were noticed in the cross-sectional view (A) and coronal (B) view.

Fig. 3. Endoscopic ultrasound-guided internal drainage and percutaneous catheter drainage. (A) A guidewire was placed in the space of acute necrotic collection via endoscopic ultrasound. (B) A 7-Fr double pigtail plastic stent (arrow) was placed. (C) Another guidewire was placed via percutaneous approach. (D) Multiple 10.2-Fr percutaneous catheters were inserted into the multiple spaces.

cal treatment, his condition did not improve. He suffered from severe small bowel ileus and recurrent vomiting. Abdominal CT obtained two weeks later revealed not only extensive pancreatic necrosis but also acute necrotic collections (Fig. 2). The CT showed some air density in the necrotic collections, which indicated infected necrosis. Therefore, we planned drainage procedures. An endoscopic ultrasound-guided internal drainage with a plastic stent and percutaneous catheter drainage with multiple catheters were performed for the acute necrotic collections (Fig. 3). Dirty gray fluid was drained, and various organisms were identified from the fluid. Although daily massive saline irrigation and subsequent radiologic interventions for the reposition of drainage catheters were followed, his small bowel ileus was not resolved. Furthermore, follow-up CT scans showed insufficient fluid drain-

age with multiple pockets of necrotic material. He was transferred to a senior medical facility for further treatment.

He underwent gastrojejunostomy for the palliation of adhesive small bowel ileus, and several sessions of percutaneous debridement using baskets for necrotic material collections in the peripancreatic space. Finally, an 18-Fr percutaneous catheter remained in the infrapancreatic space (Fig. 4). After the surgery and repetitive radiologic procedures, he was able to eat again and transferred to our hospital again with one percutaneous catheter remained. The drainage amount was gradually reduced over a period of 2 months, but two episodes of ischemic gastroenteritis occurred in the meantime. Finally, the drainage catheter was removed, and the 6-month hospitalization came to an end. As a result, he had a weight loss of about 20 kg during the hospitaliza-

tion, fasted for a total of 90 days, and had to undergo 15 times of radiologic interventions. At two months after discharge, follow-up CT scans showed no recurrent fluid collection (Fig. 5).

Discussion

We presented the case of severe necrotizing pancreatitis after endoscopic papillectomy in a young male patient, which had been managed by a bypass surgery and repetitive radiologic interventions. Ampullary adenomas are generally treated by either endoscopic papillectomy or surgical ampullectomy. Clinicians usually decide the treatment modality according to the characteristics of lesions, endoscopic expertise, and the willingness of the patient to undergo long-term endoscopic surveillance following endoscopic papillectomy or surgical ampullectomy.¹ Since the lesion seemed to be less than 2 cm in size and low grade dysplasia, we decided to treat it by endoscopic papillectomy. Post-papillectomy pancreatitis is the most common complication with a reported incidence of 8% to 15%.² While the rate of severe post-papillectomy pancreatitis was unknown exactly, approximately 15% to 25% of patients with acute pancreatitis develop severe pancreatitis accompanying with organ dysfunction.³ Therefore, prophylactic

pancreatic duct stent placement and rectal indomethacin are recommended during papillectomy.¹ However, we could not place a pancreatic duct stent in the second procedure because the orifice of pancreatic duct was not identified. In addition, rectal indomethacin is not available in Korea.

The second procedure was different from the first one in three aspects. First, the size of recurrent lesions was larger. Second, submucosal injection was performed only in the second procedure. Third, prophylactic pancreatic drainage was not performed in the second procedure. All these factors are likely to be risk factors for the serious complications. After severe pancreatitis was noticed, appropriate drug and fluid therapy was applied in accordance with the guideline,⁴ but CT could not be performed early because of persistent renal dysfunction and ileus. The patient needed to fast for a long period of time, so the recovery had to be delayed. The patient may have been able to start diet earlier if he had undergone early surgery (gastrojejunostomy) rather than repeated percutaneous drainage for the persistent small bowel ileus. However, as seen in the initial CT, pancreatitis itself was so severe that it was difficult to determine early surgery. Although it has taken a long time, the patient is believed to have recovered from the surgery for oral diet, appropriate antibiotic treatment for the accompanying infection, and repeated radiologic interventions for the complicated fluid collections in the abdominal cavity. Therefore, the treatment strategy of these patients should be determined through continuous cooperation with surgeons and interventional radiologists, not by the physician alone. In particular, multidisciplinary evaluation is necessary after CT in the treatment process.

Small bowel obstruction secondary to acute pancreatitis is rare, and mechanical bowel obstruction is more likely to occur in the colon.⁵ The main reasons for this problem are fibrosis due to severe inflammation in the abdominal cavity, thrombosis of mesenteric arteries, or bowel ischemia.^{6,7} Most of the cases in the literature were usually treated with conservative treatment, but in some cases, surgery is necessary as in our case.

Prevention

Initial surgical ampullectomy should be considered if the ampullary adenoma is large and has laterally-spreading feature. In case of endoscopic papillectomy, the risk of post-procedure complications should be fully explained before the procedure. Prophylactic pancreatic duct stenting and rectal indomethacin if available during endoscopic papillectomy are recommended to reduce the risk of postprocedural pancreatitis.¹

Fig. 4. Computed tomography scans after several sessions of percutaneous debridement for necrotic material. An 18-Fr tube was still placed in the infra-pancreatic space (arrow).

Fig. 5. (A, B) Follow-up computed tomography scans performed at two months after discharge. No recurrent fluid collections were observed.

Teaching Point

During endoscopic papillectomy for ampullary adenoma, every effort to prevent pancreatitis including decision of appropriate resection extent, prophylactic pancreatic duct stenting, and rectal indomethacin should be made. If severe necrotizing pancreatitis with small bowel ileus occurs, and oral feeding is difficult, early bypass surgery should be considered. In addition, removal of necrotic material in the abdominal cavity requires continuous collaboration among endoscopists, intervention radiologists, and surgeons.

Conflicts of Interest

No potential conflict of interest relevant to this article was reported.

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