

Case Report

A Case Report On The Effective Use Of Ultrasound Endoscopic Drainage To Treat A Pancreatic Pseudocysto-Duodenum Fistula.

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Abstract

About 10% to 20% of cases of acute interstitial edematous pancreatitis result in pancreatic pseudocysts, which typically go away on their own. Only individuals who experience symptoms like jaundice due to biliary system compression, gastric outlet obstruction, or abdominal pain, or who have an infection, should receive treatment. Pseudocyst infection resulting in sepsis, rupture with pancreatic ascites, hemorrhage or pseudoaneurysm development, and, in rare cases, fistulization to other viscera are among the problems associated with pancreatic pseudocysts. Fistulas most frequently occur between cysts and the colon, duodenum, and stomach. Here, we describe the effective endoscopic treatment of a patient with severe acute pancreatitis who acquired several infected fluid collections along with a cysto-duodenum fistula.

Keywords : *pancreatic fluid collection; pancreatic pseudocyst's fistula; ultrasound endoscopy; lumen- apposing metal stent; acute pancreatitis complication.*

INTRODUCTION

Acute pancreatitis can present with mild to severe clinical symptoms. The majority of acute pancreatitis cases are mild and go away quickly with supportive therapy. However, systemic or localized problems may result from severe acute pancreatitis. Pancreatic fluid collections (PFCs) are one of the localized consequences.

PFCs develop when the pancreatic ducts are disrupted, causing pancreatic juice to seep into the peripancreatic region. The updated Atlanta categorization classifies collections according to their nature (necrotic or non-necrotic) and duration (more or less than four weeks). These collections are further divided into two categories: infected and sterile [1].

Between 10% and 20% of cases of acute interstitial edematous pancreatitis result in pancreatic pseudocysts (PPs) [2]. Even if they are huge in size, asymptomatic PPs don't need to be treated. Only when a patient experiences symptoms such as abdominal pain, gastric outlet obstruction, jaundice due to biliary system compression, or an infection, is invasive therapy recommended [2].

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formation, and, in rare cases, fistula formation to other viscera are among the consequences associated with pancreatic pseudocysts. Fistulas most frequently occur between cysts and the colon, duodenum, and stomach [3].

Here, we describe the endoscopic treatment of a patient with severe acute pancreatitis who acquired several infected fluid collections along with a cysto-duodenum fistula.

CASE REPORT

A 73-year-old man who had experienced nausea and vomiting along with acute epigastric pain that started that same day came to the emergency room. At the time of admission, the patient had not taken any drugs and had no history of alcohol consumption.

Peripheral blood analysis at admission revealed the following results: White blood cell (WBC) count of 14,920/mm³ (80% neutrophils); hemoglobin: 15.3 g/dL; C-reactive protein (CRP): 23.4 mg/L (normal value < 5 mg/L); procalcitonin: 4.21 ng/mL; total bilirubin: 2.84 mg/dL; direct bilirubin: 1.56 mg/dL; aspartate aminotransferase (AST): 379 U/L (normal value < 38 U/L); alanine aminotransferase (ALT): 272 U/L (normal value < 41 U/L); gamma-glutamyl trans-peptidase: 705 IU/L (normal

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value < 61 U/L; lipase: >3000 U/L (normal value < 60 U/L); amylase: > 1500 U/L (normal value < 95 U/L); and calcium: 8.8 mg/dL. The patient did not exhibit a change in cognitive status, and kidney, coagulation, and cardio-respiratory functions were all maintained.

An edematous pancreatic gland with fluid accumulation in the peri-pancreatic region, primarily at the level of the tail, was discovered by abdominal computed tomography (CT). Gallbladder lithiasis was evident. Biliary lithiasis complicated by sepsis was diagnosed as the cause of moderately severe pancreatitis.

Goal-directed fluid replacement, careful observation, early enteral feeding, and antibiotic treatment were all part of the patient's treatment, which followed recommended protocols. The patient was in good general condition and no longer complained of stomach pain eight days following admission. Normalization was applied to the laboratory results. To avoid a recurrence, cholecystectomy was advised.

They returned to the hospital about two months after being admitted, complaining of fever (38 °C) and epigastric pain. According to the lab results, the WBC count was 14,530/mm³ (neutrophils: 78%), the CRP level was 163 mg/L (less than 5 mg/L), and the procalcitonin level was 0.14 ng/mL. The results of tests for liver function and pancreatic enzymes were within acceptable limits. Multiple confluent fluid collections were visible on an abdomen CT scan, spanning the whole pancreatic profile with air from the head to the tail (Figure 1). Both an endoscopic ultrasonography (EUS) and an endoscopic investigation were carried out. An 8 mm-diameter fistula opening in the duodenal bulb with purulent material leaking out was discovered during the upper endoscopy (Figure 2). EUS revealed a complicated 5 cm fluid collection in the pancreatic tail and the presence of air in the fistula (Figure 3). The fistulous channel originating from the first duodenal part, which gives birth to two branches, anteriorly in the pancreatic head and posteriorly in the tail, was confirmed by an abdominal CT scan using gastrografin. In an effort to cure the duodenal fistula, it was agreed to drain the bigger pancreatic collection following a collegial reunion with gastroenterologists, radiologists, surgeons, and physicians. Using a 16 × 20 mm lumen-apposing metal stent (LAMS, Hot-Spaxus, Taewoong Medical Co., Gimpo, Korea), EUS-guided transgastric drainage of the fluid accumulation was carried out, resulting in the drainage of a large amount of purulent material in the stomach. The patient's complaints of stomach pain and fever subsided after a few days, and laboratory tests revealed that the CRP had improved. After six days, a feeding tube for enteral nutrition was inserted with the distal head at Treitz level due to complaints of nausea and malaise during meals. A drainage revision revealed granulation tissue and necrotic debris in the stent lumen. In good health, the patient was released from the hospital.

The patient was asymptomatic and in good clinical condition after four weeks. A CT scan of the abdomen revealed fewer pseudocysts overall (Figure 6). The findings of the laboratory tests for cholestatic, lipase, transaminases, amylase, and CRP were all within normal limits.

The LAMS was withdrawn without incident after upper endoscopy revealed the resolution of necrosis through the stent lumen (Figure 7) and the healing of the prior opening fistula (Figure 8). For subclinical problems, the patient is presently undergoing outpatient follow-up.

DISCUSSION

It is possible to drain complex PFCs via endoscopic, percutaneous, or surgical means. The chosen first-line method for treating PFCs is endoscopic because it has a lower morbidity rate than both surgical and percutaneous methods [4,5]. Due to the potential to differentiate PFCs from cystic tumors, ascertain the PFC's content, locate interposed blood arteries, and lower the risk of bleeding, endoscopic ultrasonography (EUS)-guided drainage is the preferred technique for draining PFCs [6].

LAMs are newly developed stents that have two flanges. These are the preferred stents for PFC endoscopic drainage. This is because of the direct debridement access and simple sorting procedure time [7]. For PFC, a number of studies showed that LAMs are safer and more effective than plastic stents [8]. Due to its fully covered design and two flange anchors, the LAM has a lower risk of leakage than plastic stents [9]. Nevertheless, bleeding perforation and stent migration are also documented in LAM use.

The development of a fistula inside the gastrointestinal tract is an uncommon side effect of PPs. The gastric cavity is where pseudocyst fistulas occur in one-third of cases, followed by the colon and duodenum connection. It is believed that the pathophysiology of fistula formation results from the accumulation of pancreatic fluids, which raises the PP's internal pressure. This pressure causes the fluid to infiltrate peripancreatic tissue, organs, or arteries, causing ischemia damage that permits the organs to penetrate the walls and form a fistula [10]. With conservative treatment, the majority of pseudocyst-enteric fistulas that develop in the upper gastrointestinal tract have a favorable prognosis. Sometimes, nevertheless, the fistula is unable to empty the entire contents of the pseudocysts.

CONCLUSIONS

Here, we described a complex pseudocyst that required endoscopic drainage of the main fluid collection since it could not be completely removed from the duodenum fistula. From a clinical perspective, this example indicates that endoscopic

drainage along with the fistula's spontaneous creation can occasionally be crucial for symptom relief in cases of multiloculated pseudocysts.

REFERENCES

1. Banks, P.A.; Bollen, T.L.; Dervenis, C.; Gooszen, H.G.; Johnson, C.D.; Sarr, M.G.; Tsiotos, G.G.; Vege, S.S.; Acute Pancreatitis Classification Working Group. Classification of acute pancreatitis—2012: Revision of the Atlanta classification and definitions by international consensus. *Gut* 2013, 62, 102–111. [CrossRef] [PubMed]
2. Nabi, Z.; Basha, J.; Reddy, D.N. Endoscopic management of pancreatic fluid collections-revisited. *World J. Gastroenterol.* 2017, 23, 2660–2672. [CrossRef] [PubMed]
3. Khanna, A.K.; Tiwary, S.K.; Kumar, P. Pancreatic pseudocyst: Therapeutic dilemma. *Int. J. Inflam.* 2012, 2012, 279476. [CrossRef] [PubMed]
4. Seewald, S.; Ang, T.L.; Kida, M.; Teng, K.Y.; Soehendra, N.; EUS 2008 Working Group. EUS 2008 Working Group document: Evaluation of EUS-guided drainage of pancreatic-fluid collections (with video). *Gastrointest. Endosc.* 2009, 69, S13–S21. [CrossRef] [PubMed]
5. Tyberg, A.; Karia, K.; Gabr, M.; Desai, A.; Doshi, R.; Gaidhane, M.; Sharaiha, R.Z.; Kahaleh, M. Management of pancreatic fluid collections: A comprehensive review of the literature. *World J. Gastroenterol.* 2016, 22, 2256–2270. [CrossRef] [PubMed]
6. Fabbri, C.; Luigiano, C.; Maimone, A.; Polifemo, A.M.; Tarantino, I.; Cennamo, V. Endoscopic ultrasound-guided drainage of pancreatic fluid collections. *World J. Gastrointest. Endosc.* 2012, 4, 479–488. [CrossRef] [PubMed]
7. Ali, S.E.; Benrajab, K.; Mardini, H.; Su, L.; Gabr, M.; Frandah, W.M. Anchoring lumen-apposing metal stent with coaxial plastic stent for endoscopic ultrasound-guided drainage of pancreatic fluid collections: Any benefit? *Ann. Gastroenterol.* 2019, 32, 620–625. [CrossRef] [PubMed]
8. Hammad, T.; Khan, M.A.; Alastal, Y.; Lee, W.; Nawras, A.; Ismail, M.K.; Kahaleh, M. Efficacy and safety of lumen-apposing metal stents in management of pancreatic fluid collections: Are they better than plastic stents? A systematic review and meta-analysis. *Dig. Dis. Sci.* 2018, 63, 289–301. [CrossRef] [PubMed]
9. Priyanka, P.; Hsueh, W.; Nasr, J. Use of lumen-apposing stents for the treatment of postsurgical fluid collections: A case series and a review of literature. *Case Rep. Gastrointest. Med.* 2019, 2019, 7656950. [CrossRef] [PubMed]
11. Shatney, C.H.; Sosin, H. Spontaneous perforation of a pancreatic pseudocyst into the colon and duodenum. *Am. J. Surg.* 1973, 126, 433–438. [CrossRef]