

Hemorrhagic Pancreatic Pseudocyst Presenting as Upper Gastrointestinal Bleeding due to Gastric Penetration: A Case Report

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Abstract

A hemorrhagic pancreatic pseudocyst which follows pancreatitis is a severe complication that can lead to massive gastrointestinal bleeding. It is also one of the most serious complications of chronic pancreatitis. The reported incidents of hemorrhagic pseudocyst is between 6 and 10%, although rupture of such a pseudocyst into the stomach is rare and comprises less than 1% of all admissions for upper gastrointestinal hemorrhage. In this case report, we describe an unusual case in which severe UGI bleeding and gastric perforation were diagnosed due to rupture of a hemorrhagic pancreatic pseudocyst. Although aggressive surgical intervention was performed, unfortunately the patient expired later due to sepsis. (J Intern Med Taiwan 2013; 24: 495-499)

Key Words: Pancreatic pseudocyst, Gastric perforation

Introduction

Pseudocysts of the pancreas are not rare, and several complications such as rupture, infection, pseudoaneurysm, and intracystic hemorrhage, have been reported. However, spontaneous perforation and/or fistulization are fewer than 3% of these pseudocysts. Perforation into the free peritoneal cavity, stomach, duodenum, colon, portal vein, pleural cavity, and through the abdominal wall, has been reported. Perforation into the stomach may typically be managed without drainage or surgery, but hemorrhagic pseudocyst following pancreatitis is a severe

complication that can lead to massive gastrointestinal bleeding¹. Acute intracystic hemorrhage in pancreatic pseudocyst, a rare complication, is associated with a mortality rate of about 50%: ranging from 13% in treated patients, to more than 90% in those untreated. The treatments of hemorrhagic pseudocyst include angiographic embolization, urgent transcystic ligation & external drainage, and pancreatic resection². The patient in this case port had the rare condition of having “massive gastrointestinal bleeding due to gastric penetration from a hemorrhagic pancreatic pseudocyst”.

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Case report

A 49 years old male presented with abdominal pain since the day before admission. Vomiting occurred later, followed by hematemesis, with the patient then being sent to the emergency room for further evaluation. The patient had a history of hypertension and has had problems controlling his blood pressure for several years and also has had a habit of drinking alcohol frequently for the last few decades.

Upon arrival at the emergency room, the patient appeared physically ill but was conscious and cooperative. Vital signs were as follows: blood pressure 230/110 mmHg, pulse rate 127 beats/min, respiratory rate 18 breaths/min, and temperature 36.2°C. His sclera was not icteric, neither was significantly pale conjunctiva noted. Chest examination showed clear breathing sounds over both lung fields, and the heart showed a rapid heartbeat without murmur. Distension of the abdomen was presented with mild tenderness over epigastric area.

Laboratory data were as follows: white blood cell count 16400/ μ L with a mild shifting to the left (neutrophil 78.2%), hemoglobin 14.8 g/dL, blood urea nitrogen 31 mg/dL, creatinine 1.2 mg/dL, AST (aspartate aminotransferase) 18 IU/L, alkaline phosphatase 101 IU/L, total bilirubin 0.5 mg/dL, Na 140 mmol/L, K 3.8 mmol/L, lipase 831 IU/L, PT (prothrombin time) 10.6" (INR 0.94). The chest roentgenogram showed normal lung fields and an electrocardiogram showed rapid heartbeat with sinus rhythm.

After admission, gastroduodenoscopy was performed which showed bloody fluid within stomach, a huge mass like lesion with irregular surface, and blood coating occupying nearly the whole lumen of the stomach. The cause of the bleeding was not clearly visible. A CT (computed tomography) of the abdomen was arranged which showed a cystic lesion over LUQ of the abdomen.

This was consistent with a markedly distended stomach filled with big hematoma. A communication between the gastric lumen and pancreatic tail pseudocyst was noted. (Figure 1)

The hemoglobin level decreased from 14.8 to 10.1 and then 7.57 g/dL, although blood transfusion had already been given at the time. Intermittent hematemesis was still noted after admission. A general surgery doctor was then consulted and emergent surgical intervention was performed. The lesser sac pseudocyst was opened and drained and intra-operative gastroduodenoscopy was performed for determination of gastric lesion. Disappearance of previous mass-like lesion, diffuse necrosis of gastric mucosa and perforation of the stomach were noted. During laparotomy, huge laceration of lesser sac of the stomach was found, with the stomach wall appearing to be very fragile, and extensive necrosis was suspected. The peri-gastric soft tissue, including greater & lesser omentum, were very firm & thick due to pancreatitis and severe peritoneal soiling of whole abdomen was also noted. The surgeon performed marsupialization of the cyst and gastrostomy with suture repair only due to the unstable condition of the patient. Five days later, near-total gastrectomy with roux-en-Y reconstruction was performed, with the patient then receiving further two operations later due to duodenal stump leakage and gastrojejunostomy anastomosis leakage 5 and 19 days after the gastrectomy respectively. Unstable conditions persisted after the final operation, although aggressive antibiotics and medical treatment were given continuously. Unfortunately, the patient died on the 69th days after admission due to sepsis and acute renal failure.

Discussion

Pancreatitis as a cause of bleeding from the upper gastrointestinal tract is rare, but the possibility should be kept in mind when gastrointestinal bleeding occurs in a patient with previous or present

pancreatitis³. In patients with gastrointestinal bleeding and currently or previously have pancreatitis, the most common sources of the bleeding are likely to be either peptic ulcer, gastritis or esophageal varices due to portal hypertension. If these causes can be ruled out, a direct association between the pancreatic disease and the bleeding should be considered³.

The rupture of pancreatic pseudocyst into surrounding viscera is a well-known phenomenon¹. Elastase and other pancreatic enzymes can cause erosion of adjacent vessels in the course of acute pancreatitis, and false aneurysm develops in 7-12% of cases⁵. Hemorrhagic pseudocyst of the pancreas is one of the severe complications of acute pancreatitis, and its occurrence has been reported to be between 3.2% and 10% of patients with acute pancreatitis. Other reported prevalence from 8% to 17%, although prevalence as high as 31% has been reported². Three pathogenetic mechanisms of bleeding, and rupture of pancreatic pseudocysts

have been suggested. First, uncontrolled severe inflammation and activated lytic enzymes might cause progressive digestion of the elastic component of the vessel wall, with consequent erosion and disruption. Second, pseudocyst might produce erosion of vessels as a consequence of persistent compression, ischemia, and the elastolytic action of enzymatic contact. Third, the inflammatory process and the pseudocyst might cause compression or thrombosis in the portal or splenic vein, leading to localized portal hypertension¹. Although every vessel adjacent to the pancreas may be eroded, the splenic artery is affected in half the cases because of its close contact with the pancreas, followed by the gastroduodenal, pancreaticoduodenal, left gastric, and common hepatic arteries^{4,5}.

The finding of blood in the pseudocyst in US (ultrasound) and CT together with clinical signs of bleeding, strongly suggests the diagnosis of hemorrhagic pseudocyst². Hemorrhage from a pseudoaneurysm in the pancreatic pseudocyst is indicated

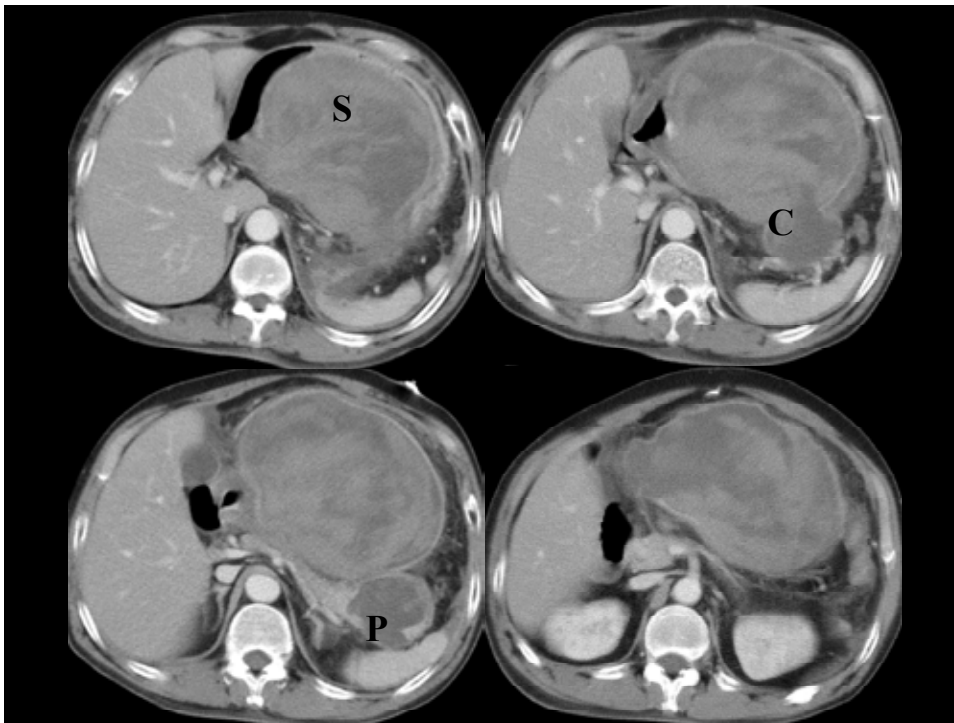


Figure 1. The computed tomography study for the present patient showed hemorrhagic pseudocyst at pancreatic tail and rupture into stomach. (The "S" showed stomach is full of blood. The "P" showed pancreatic tail pseudocyst and the "C" showed communication between gastric wall and pancreatic tail pseudocyst).

by clinical findings such as UGI bleeding or hemosuccus pancreaticus^{6,7,8}, and/or by imaging on US, CT, and MRI (magnetic resonance imaging)⁴. In patients with hemosuccus pancreaticus, angiography should be performed to make a definite diagnosis as it has a high sensitivity of 93% to 96%, with the rate for other modalities being 20%³. The failure of angiography to demonstrate hemorrhage may be related to venous bleeding, intermittent bleeding, bleeding from a large surface area, a small pseudoaneurysm in the peripheral branches, or the pseudoaneurysm was hidden by a clot prior to the examination¹. In the present case, upper gastrointestinal tract bleeding with intermittent hematemesis was noted initially, but cause of the bleeding could not be determined by endoscopy examination.

For the management of massive bleeding from a pseudocyst, early diagnosis is essential¹. The therapeutic approach varies according to the site and source of bleeding, the facilities available, the experience of the institution, as well as the general status of the patient⁵. Some suggested angiographic approach as the first choice of treatment for hemorrhage from a pseudoaneurysm. Indication of TAE (transarterial embolization) is controversial in terms of the certain aspects that were taken into considerations, such as the general condition of the patient, the site of the pseudoaneurysm, and the status of the associated pancreatitis⁴. Regarding the site of the pseudoaneurysm, TAE is indicated in the gastroduodenal, pancreaticoduodenal, and intrapancreatic arterial branches, although it may not be indicated in the main splenic artery⁴. With respect to the associated pancreatitis, when acute or chronic pancreatitis is ongoing, TAE is apt to produce temporary hemostasis due to possible re-bleeding, even if hemostasis was achieved with the initial TAE. Surgery is recommended as the initial treatment in such patients⁴. An emergency operation carries a mortality rate of between 25 and 47%² with others reported relatively high operative mortality rate of 33%-37% due

to dense inflammatory adhesions related difficulties⁴. Several surgical options have been proposed to control bleeding, with distal pancreatectomy and splenectomy being the most traditional procedure. Some have suggested intracystic suture ligation and external drainage, even occlusion of a bleeding cyst with a foley catheter although suture and/or ligation of the bleeding point might be inappropriate in the presence of inflammatory, friable, necrotic, or bacterially contaminated tissue¹.

Even though the combination of embolization and surgery is thought to be the most appropriate method for reducing the high mortality of severe hemorrhagic complications with hemorrhagic pseudocysts¹, angiographic intervention was not chosen for the present case and emergency surgery was performed instead for 2 reasons. The first reason was the unstable condition of the patient, and the second reason was the plan to treat the pancreatic disease concurrently.

The mortality rate for hemorrhagic pseudocyst has been reported to range from 18% to 29% in patients who underwent medical and/or surgical treatments. However, when left untreated it is almost always fatal, with the mortality rate being more than 90%⁴. Masatsugu reported that were 2 reasons why there were 3 successful cases with treatment using pancreatectomy. Firstly, the patients in the 3 cases had been hemodynamically stable, and the pancreatectomy was performed as a scheduled operation rather than an emergency operation. Secondly, the pseudocysts were located in the body or tail of the pancreas, where pancreatectomy can be performed more safely compared to the head of the pancreas⁴. Unfortunately, in the present case, the patient was hemodynamically unstable and emergency surgery was required.

The patient died because of anastomosis leakage and sepsis, both of which were serious risks after extensive operations as per previous case reports⁹.

In conclusion, this case involves the rupture of a hemorrhagic pancreatic pseudocyst into the stomach, which is a rare complication with only a few cases previously reported in the literature as well as the severe perforation of the stomach due to pancreatic pseudocyst, which was also uncommon. The result indicates that a direct association between the pancreatic disease and the bleeding should be considered when gastrointestinal bleeding occurs in a patient with pancreatitis.

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胰臟出血性偽囊腫穿透胃導致上消化道出血： 一病例報告

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摘要

胰臟炎之後發生出血性偽囊腫乃嚴重的併發症，可以造成嚴重的消化道出血，也是慢性胰臟炎最嚴重的後果之一，發生的機率約6-10%。此種情況只佔所有因上消化道出血而住院病人不到1%，出血性偽囊腫破裂導致嚴重胃穿孔更為少見，我們將報告此一罕見病例，病人雖經積極手術治療，不幸之後仍因敗血症死亡。