A Case of Chronic Pancreatitis with Pseudoaneurysm Rupturing into a Pseudocyst

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Abstract

A 44-year-old man with alcohol-induced chronic pancreatitis was referred to our institute for evaluation of severe anemia. The hemoglobin was 2.6g/dl. The results of upper gastrointestinal and colonic examination were negative. Computed tomography and ultrasound examination revealed a pseudocyst in the head of the pancreas. A pseudoaneurysm of the anterior superior pancreaticoduodenal artery shown by angiography appeared to have caused gastrointestinal bleeding by rupturing into the pancreatic cyst connected to the main pancreatic duct. A pyorus-preserving pancreaticoduodenectomy was performed successfully.

KEYWORDS: chronic pancreatitis, hemosuccus pancreaticus, pseudoaneurysm

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Pancreatic pseudocysts and pseudoaneurysms are not rare complications of chronic pancreatitis. However, gastrointestinal bleeding due to rupture of pseudoaneurysms is rare and may be overlooked in the differential diagnosis. The present case is one of such massive gastrointestinal bleeding in a patient with alcohol-induced chronic pancreatitis.

Case Report

A 44-year-old man with a 26-year history of alcohol abuse was referred to our institute for severe anemia on November 7, 1991. His problem began in March, 1988, when he was admitted to our hospital with ascites. Following puncture, blood was aspirated and a barium enema examination revealed an 8-cm narrow segment of the sigmoid colon. Mitomycin C (32 mg) was injected into the abdominal cavity under a presumptive diagnosis of peritonitis carcinomatosa. He did not return to our hospital in spite of recurrent episodes of melena until November, 1991, when he was referred for severe anemia. The hemoglobin was 2.6 g/dl and serum alcohol level 1.7 mg/dl. Upper gastrointestinal endoscopy and colonoscopy failed to identify the bleeding site.

Ultrasound examination showed a 1-cm hyperechogenic mass with a hypoechogenic halo suggesting hemorrhage inside a pseudocyst situated in the head of the pancreas on November 11, 1991 (Fig. 1a). This lesion developed into a cystic lesion with a hypoechogenic halo indicating central lysis of the hemorrhage on December 26, 1991 (Fig. 1b). Computed tomography showed a 3.5-cm tumor with a 1-cm cyst in the head of the pancreas (Fig. 2). Angiography showed a pseudoaneurysm 8-mm in diameter at the bifurcation of the gastro-duodenal artery into the right gastroepiploic and anterior superior pancreaticoduodenal arteries (Fig. 3). Endoscopic retrograde cholangiopancreatography showed an obstruction of the Wirsung’s duct at 5-mm proximal to the ampulla of Vater and no communication between the pancreatic duct and cystic cavity. The obstruction was considered to be produced by clots filling the pancreatic duct. These findings and data from serial ultrasonograms suggested that the aneurysm had ruptured into the pseudocyst resulting in hemosuccus pancreaticus.

Transcatheter embolization was attempted, but selective catheterization of the gastroduodenal artery was unsuccessful. Surgical resection was conducted. On
laparotomy, no intra-abdominal bleeding was found and it was difficult to detect the aneurysm due to peripancreatic fibrosis. We carried out a pylorus-preserving pancreaticoduodenectomy and removal of the pseudocyst and pseudoaneurysm on January 7, 1992. Repture of the aneurysm was shown after opening the gastroduodenal, right gastroepiploic and superior anterior pancreaticoduodenal arteries (Fig. 4).

Histological examination showed that the vascular wall was disrupted and the pseudoaneurysm was formed. The wall was consisted of adventitial and perivascular tissues.
Upper gastrointestinal endoscopy is mandatory to exclude other common causes of upper gastrointestinal bleeding. However, bleeding coming out of the ampulla of Vater has been rarely shown (6). Arteriography is considered the best means of diagnosing pseudoaneurysms and bleeding cysts and of deciding suitable therapy. However, to document active bleeding through the ampulla of Vater, angiography should be performed during an attack of pain, since this is the time when bleeding actually occurs (7). Bolus computed tomography is considered ideal for detecting pseudoaneurysms in nonenhanced pseudocysts, although such reports are few (8). Ultrasound examination is widely conducted owing to its noninvasive nature and low cost. For follow-up of patients with pancreatitis, ultrasound examination is better than angiography and computed tomography. The echogenicity of hemorrhagic pancreatic fluid changes with clot aging. Hashimoto et al. visualized acute hemorrhage as a well-defined homogeneous mass, while subacute hemorrhage was observed as a mass containing cystic and solid elements or septate cysts. Remote hemorrhage was seen as a simple cyst (9). In the present study, echogenicity changed from a hyperechoic mass with a hypoechogenic halo into a cystic lesion with a hyperechogenic halo, reflecting the clinical course of the bleeding pseudoaneurysm. Pancreatic proteolytic enzymes breach the arterial wall, so that blood eventually enters the cyst. Bleeding can be stopped by the clot effecting pressure on the ruptured wall. However, pancreatic enzymes can lyse the clot sealing the leak with subsequent rebleeding. This can occur repeatedly (7).

Surgery or transarterial embolization is currently available for the treatment of such aneurysmal bleeding. In most cases, the transarterial approach has been used as a temporary measure when surgery is not feasible. Recently, however, longstanding effective treatment of bleeding by embolotherapy has been reported (11). We, therefore, consider that embolotherapy should be conducted first, but selective catheterization is sometimes difficult in chronic inflammation. The present patient represents such a case, necessitating surgical interventions. Surgical management of bleeding aneurysms is arterial ligation or pancreatic resection. Piikäranta et al. reported that in four out of five patients treated with arterial ligation, reoperation was required. None of eight patients treated by pancreatic resection needed reoperation (8). Resection should thus be preferred to arterial ligation. The present patient, therefore, was treated by a pancreaticoduodenectomy along with removal of the cyst and...
aneurysm.

This case was diagnosed as peritonitis carcinomatosa 4 years ago based on bloody ascites, but in retrospect the bloody ascites was most probably due to pseudoaneurysm rupturing into the abdominal cavity.

In summary, hemosuccus pancreaticus should be included in the differential diagnosis of gastrointestinal bleeding of obscure origin, particular in patients with a history of alcoholic abuse and chronic relapsing pancreatitis and in those with known pancreatic pseudocysts.

References


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