Case Report

Haemorrhage from Pancreatic Pseudocysts Presenting as Upper Gastrointestinal Haemorrhage

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Haemorrhage is a rare but frequently fatal complication of pancreatic pseudocysts. The high mortality associated with pancreatic haemorrhage makes prompt and aggressive management essential. Occasionally, haemorrhage may present atypically, leading to delay in its diagnosis and management. This report details a case of pancreatic haemorrhage presenting as an upper gastrointestinal bleed and discusses the subsequent management. When managing patients with pancreatic pseudocysts who present with the stigmata of upper gastrointestinal bleeding, the possibility that the bleeding originates from the pancreas must always be borne in mind. [*Asian J Surg* 2004; 27(2):137–40]

Introduction

Haemorrhage from pancreatic pseudocysts is a rare but potentially fatal complication. Bleeding from pancreatic pseudocysts can occur into the cyst itself, via the ampulla of Vater, or by fistulation into nearby hollow organs. Intracystic bleeding can be diagnosed by computed tomography (CT) from characteristic echoes or increases in density. Transpapillary bleeding can be diagnosed endoscopically, and visceral angiography can be used to demonstrate the eroded vessel. Angiography has the additional advantage of allowing embolization of the bleeding vessel, which could be used as sole treatment in inoperable patients and as a stabilizing measure before definitive surgery.

This report details a case of atypical presentation of haemorrhage from a pancreatic pseudocyst and its subsequent diagnosis and management.

Case report

A 49-year-old chronic alcoholic presented with haematemesis and melaena. He had been diagnosed with a 6 cm pancreatic pseudocyst by CT 8 weeks previously, following an attack of alcohol-induced acute pancreatitis.

His haemoglobin on admission was 8.3 g/dL, which rose to 11.2 g/dL following transfusion of 4 units of blood. He also had raised bilirubin (45 μmol/L) and alkaline phosphatase (400 IU/L). A nasogastric tube was passed due to his persistent vomiting, with nasogastric losses exceeding 3 L of bile-stained fluid per day. The following day, oesophagogastroduodenoscopy revealed confluent ulceration of the oesophagus and external compression of the duodenum. Due to the lack of any other obvious source of bleeding, it was tentatively assumed that the oesophageal ulcers were the sole source of the patient's bleeding. Two days after admission, a CT scan revealed a $7 \times 5 \times 8$ cm mixed-attenuation mass located in the head and uncinate process of the pancreas, representing a complex haemorrhagic pseudocyst, and causing compression of the duodenum and common bile duct.

Due to the CT findings, mesenteric angiography was performed later that day, which revealed bleeding into the pseudocyst from a branch of the superior pancreaticoduodenal arcade/right gastroepiploic artery (Figure 1). This was successfully embolized angiographically by delivering multiple coils

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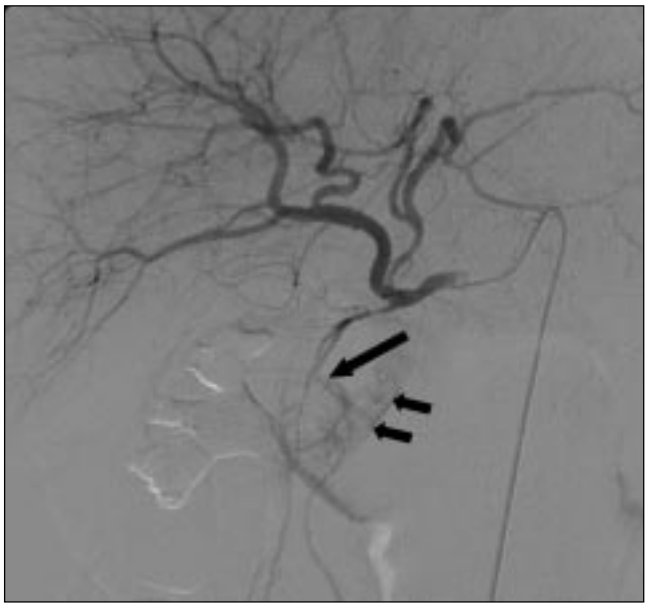

Figure 1. Selective common hepatic arteriogram showing a bleeding point from a superior pancreaticoduodenal artery branch; the large arrow indicates a jet-like bleeding point, and the small arrows mark the edge of a false aneurysm.

both distally and proximally to the site of bleeding (Figures 2 and 3). Following placement of the coils, no further bleeding was demonstrated from the pseudocyst (Figures 4 and 5).

Laparotomy revealed a large haemorrhagic pseudocyst with fistulation into the second part of the duodenum, accounting for the upper gastrointestinal bleeding. The pseudocyst was also causing biliary obstruction and duodenal outlet obstruction. The clot was evacuated and the patient underwent pancreaticocystogastrostomy, cholecystectomy, hepaticojejunostomy-en-Y, gastroenterostomy and enteroenterostomy.

Postoperative recovery was unremarkable; there was no further evidence of bleeding and his haemoglobin level remained stable. After 3 weeks, he was tolerating a normal diet and was discharged.

Discussion

Pancreatic pseudocysts are collections arising from within and around the pancreas that lack an epithelial lining.[1] They occur following acute pancreatitis, chronic pancreatitis or secondary to pancreatic trauma.[2] Pancreatic pseudocysts arising after acute pancreatitis can often be managed conservatively, whereas the thicker-walled pseudocysts arising after chronic pancreatitis frequently require drainage.[3] Pseudocysts that have not regressed or have increased in size after 6 weeks may require surgical drainage,[4] for which a variety of different methods have been described.

Pseudocysts can present in a variety of ways, ranging from abdominal pain, gastric outlet obstruction, obstructive jaundice and nausea to sepsis.[4] Fistulation into nearby structures, such as the common bile duct[5] or oesophagus,[6] have also been described. Haemorrhage complicates only 5% of pancreatic pseudocysts, but carries with it a mortality of more than 40%.[7] The bleeding is due to pressure erosion of nearby blood vessels by the pseudocyst; the most commonly affected arteries are the splenic, gastroduodenal and superior pancreaticoduodenal arteries.[8] Bleeding can also occur from more unusual sites such as the aorta[9] or superior mesenteric artery.[10] Patients may present with intraperitoneal haemorrhage, retroperitoneal haemorrhage or, occasionally, gastrointestinal haemorrhage, usually due to bleeding through to the ampulla

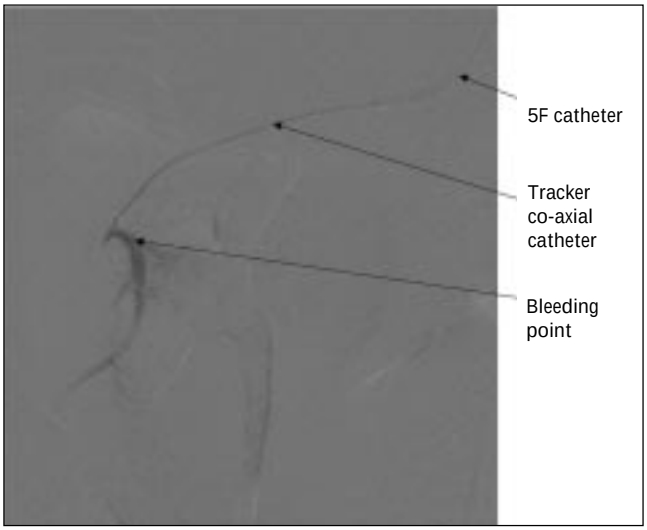

Figure 2. The position of the catheter is demonstrated.

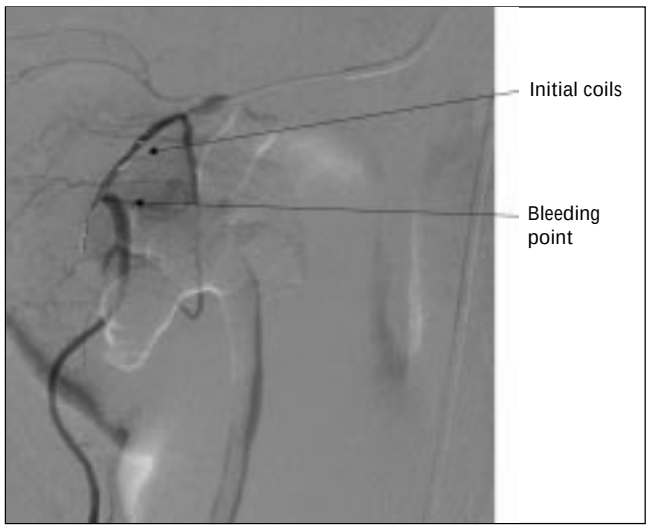

Figure 3. Deployment of the angiographic coils is demonstrated.

of Vater[11] or fistulation into a hollow viscus such as the colon[12] or, as described in this report, duodenum.

Surgical management of haemorrhagic pseudocysts involves excision of the pseudoaneurysm and pseudocyst. In cases where resection is not possible, ligation of the artery proximal and distal to the pseudoaneurysm and drainage of the pseudocyst into the gastrointestinal tract is an acceptable alternative, although it is associated with a higher re-bleeding rate.[13]

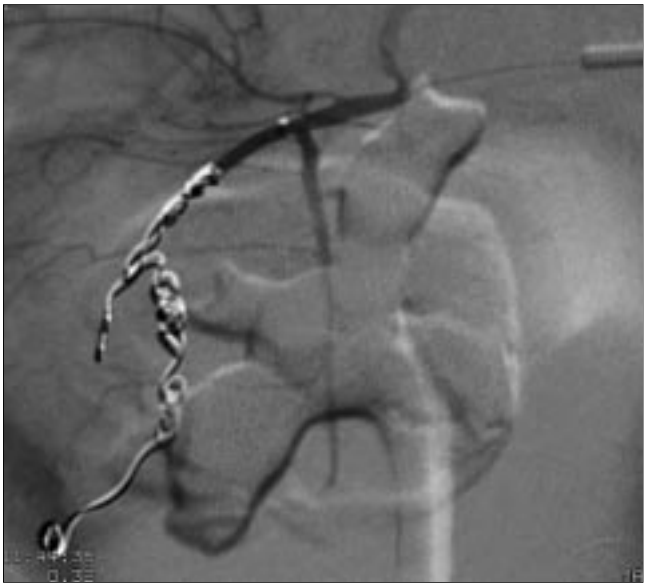

Figure 4. Final coil deployment – there is no further bleeding.

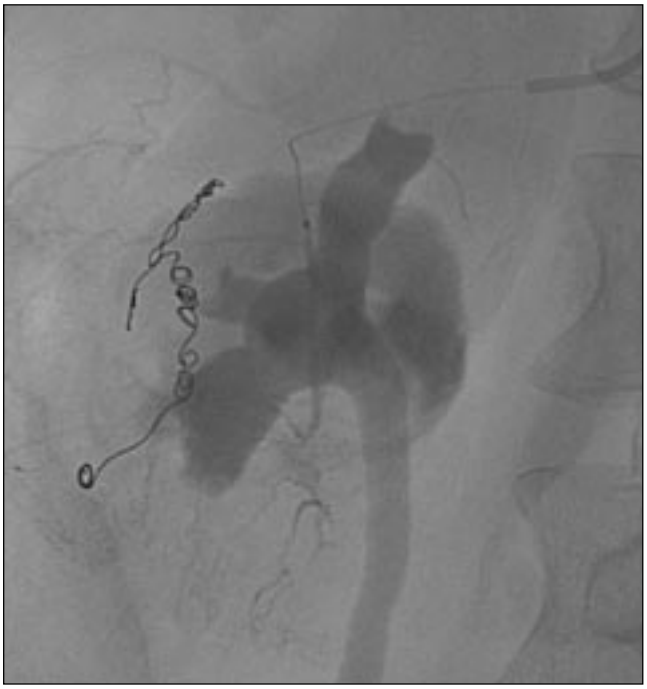

Figure 5. Non-subtracted arteriogram of adjacent branch confirms no further bleeding. Note the contrast in the false aneurysm.

Surgical intervention is often impeded by technical problems caused by the scale and volume of the haemorrhage, difficulty in identifying the bleeding site, and difficulty in anatomical exposure of the surgical field. Angiography can be used preoperatively to identify which vessel is the source of the haemorrhage, allowing better surgical planning and execution; this practice has a favourable impact on mortality.[14] Preoperative angiography also allows embolization of the bleeding vessel via the placement of occlusive coils or substances such as gelfoam. This technique has been advocated as a primary treatment for the haemorrhage[15] or as a temporary measure prior to definitive surgery.[14] Other radiological techniques such as CT can also be used in the early diagnosis of bleeding pseudocysts, especially when combined with angiography.[16]

Haemorrhage into pseudocysts is often diagnosed too late because of its rarity and diverse clinical presentation. When haemorrhage does occur, it is frequently unexpected and torrential. We conclude that a high index of suspicion should be maintained in any patient with a pseudocyst or a history of chronic pancreatitis who presents with the stigmata of gastrointestinal bleeding. Combined CT with angiographic assessment should be used to obtain early diagnosis of possible bleeding from the pancreatic pseudocyst so that appropriate intervention can be planned.

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