

## Case Report

# Spontaneous rupture of the pancreatic pseudocyst into the duodenum with massive upper gastrointestinal bleeding: case report and literature review

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## ABSTRACT

Pancreatic pseudocyst is one of the common complications of both acute and chronic pancreatitis. While most pseudocysts resolve spontaneously with conservative treatment, larger pseudocysts are more likely to cause complications, such as, spontaneous rupture into the gastrointestinal tract and are usually associated with life-threatening bleeding, which is life threatening complication. Endoscopic or surgical drainage may be necessary for uncomplicated persistent large cysts. We present a case of 32 year old Indian male, admitted to our department, who was a known case of alcoholic acute pancreatitis treated conservatively and developed massive upper GI bleeding and shock. CT angiography and upper GI endoscopy failed so he was taken to theatre several time due to bleeding, recurrent bleeding and a major bile leak. Unfortunately, he was expired. Current study highlights this serious rare life-threatening complication.

**Keywords:** Acute pancreatitis, Pseudocyst, Bleeding, Spontaneous rupture

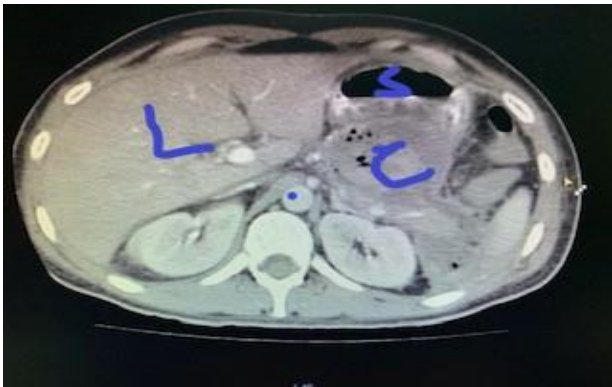
## INTRODUCTION

Hemorrhage into the pseudocyst is one of the rare and life-threatening complications of pancreatic pseudocyst, and is due to erosion of the arteries abutting the pseudocyst due to the enzymatic action of intra-cystic fluid.<sup>1,2</sup> Splenic artery is the most commonly involved. Rarely, the pseudocyst of the pancreas may communicate with the adjacent viscera, such as the duodenum, which can present rarely as massive upper gastrointestinal bleeding.<sup>6,7</sup> We report a case report of hemorrhagic pseudocyst of pancreas presenting as massive upper GI bleeding, that was ruptured into the duodenum together with review of the literature.

## CASE REPORT

A 32 year old Indian gentleman, known to be chronic alcoholic presented with severe upper abdominal pain, radiating to the back over the last 10 days. He was investigated and diagnosed with acute alcoholic pancreatitis. He left our hospital and went to another private hospital and stayed there to complete 23 days of conservative treatment. Enhanced abdominal computerized tomography (CECT) was done (Figure 1). He was transferred back to our hospital as he developed a large (10 cm) pancreatic pseudocyst with massive melaena and shock. Upper endoscopy was done there and failed to identify any source of bleeding. Clinically, he was confused, pale, had BP 85/50 mmHg and pulse of 140/min. Abdomen was soft and lax. Labworks showed

Hb 5 gm%, raised renal and liver functions with serum amylase 550 IU/cumm with a picture of obstructive jaundice. He was admitted to intensive care unit and resuscitated with IV fluids. Packed red cells, FFP and platelets. Upper gastrointestinal endoscopy was arranged and showed a large extrinsic bulge into the lumen of the stomach with minimal bleeding in the first part of duodenum but no definite source was seen. While waiting for CT angiography, patient deteriorated rapidly again and shifted to theatre. Laparotomy revealed a large hemorrhagic pseudocyst containing large blood clots (Figure 2) with fistulation into the first part of the duodenum, accounting for the upper gastrointestinal bleeding. The pseudocyst was also causing biliary obstruction and duodenal outlet obstruction. Due to the critical situation, the cysts were evacuated and the patient underwent a duodenostomy decompression tube (Foley 's catheter, 18F) placement into the site of duodenal rupture, reinforced with a nearby greater omentum, together with a feeding jejunostomy tube placement (Foley 's catheter, 18F). Para-duodenal and intracystic drains were at the left (Figure 3).



**Figure1: CT of the abdomen showing large pancreatic pseudocyst (C) compressing stomach (S) and liver (L).**



**Figure 2: A) an intraoperative photo showing the large cyst, B) evacuated large clots.**

The abdomen was lavaged with saline and closed. Postoperatively, drain fluid amylase was 13,000 IU/cumm. Partial total parenteral nutrition and somatostatin were started. 4 days later, he was taken to theatre again for recurrence of bleeding from cyst where

packing was done and removed after 3 days. 7 days later, he had a high output bile leak, reaching more than 1200 ml of bile. He was taken to theatre and a large duodenal leak, that was fixed in two layers and another duodenostomy decompression was left and jejunostomy feeding tube site large leak was found and tube removed and the leak closed. No sutures were noted at both duodenal and jejunostomy sites leaks. A cholecystostomy tube (silicone Foleys catheter 14 F) was inserted; unfortunately, he was expired on postoperative day 4.



**Figure 3: A large chest tube (1) drain left inside the cyst cavity, (2) rubber Foleys' catheters, duodenostomy decompression (3) feeding jejunostomy and (4) paraduodenal drain.**



**Figure 4: At the end of surgery (1) a cholecystostomy silicone tube on the right side, (2) large tube drain nearby chest, (3) a duodenostomy decompression rubber Foleys' catheter, On the left side 2 large chest tube drains (4) left intraperitoneal and (5) pelvic.**

## DISCUSSION

Pancreatic pseudocysts are collections arising from within and around the pancreas that lack an epithelial lining, following acute pancreatitis, chronic pancreatitis or following pancreatic trauma.<sup>1,2</sup> Pancreatic pseudocysts are often treated conservatively. Pseudocysts that have not regressed or increased in size after 6 weeks may

require endoscopic or surgical drainage.<sup>3,4</sup> Clinically, pseudocysts may present as chronic abdominal pain, gastric outlet obstruction, or obstructive jaundice. Fistulation into nearby structures, such as the duodenum common bile duct, esophagus, or colon have also been described.<sup>4-6</sup> Hemorrhage accounts for up to only 2.5% of pseudocysts, but carries with it a mortality of more than 40%.<sup>7</sup> The bleeding is due to pressure erosion of nearby blood vessels by the pseudocyst; mostly the splenic artery (30-50%), but gastroduodenal and superior pancreaticoduodenal arteries are other examples.<sup>8</sup> Patients may present with intraperitoneal hemorrhage, retroperitoneal hemorrhage or gastrointestinal hemorrhage, usually due to bleeding through to the ampulla of Vater or fistulation into a hollow viscus such as the colon or, as in our case, the duodenum.<sup>7-10</sup> Preoperative angiography to identify the source of the hemorrhage, allowing the possibility of embolization of the bleeding vessel via the placement of coils or gelfoam. Selective percutaneous mesenteric arterial embolization can be a primary treatment for the haemorrhage or as a temporary measure prior to definitive surgery. Surgical management of hemorrhagic pseudocysts involves excision of the pseudoaneurysm or ligation of the bleeder proximal and distal to the pseudoaneurysm if identified and drainage of the pseudocyst into the gastrointestinal tract, partial pancreatectomy and splenectomy.<sup>11</sup>

## CONCLUSION

A high index of suspicion should be maintained in any patient with a pseudocyst or a history of chronic pancreatitis who presents with evidence of gastrointestinal bleeding. CT angiography should be used to obtain early diagnosis of possible bleeding from the pancreatic pseudocyst so that appropriate intervention, whether embolization or surgery, could not be delayed.

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