

## Case Report

# Pseudoaneurysm bleed in chronic pancreatitis: beware of multiple feeding vessels-a case report

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### ABSTRACT

Gastroduodenal artery (GDA) pseudoaneurysm is a rare but potentially fatal complication in chronic pancreatitis. Managing GI bleed in chronic pseudocyst due to ruptured pseudoaneurysm having multiple feeding vessels and that too in a background of portal hypertension is a challenging task. A 43 year old male patient with chronic calcific pancreatitis presented to our department with 10 days history of malena and drop in hemoglobin. He underwent micro coil embolization of GDA 12 days before in another hospital for ruptured GDA pseudoaneurysm with upper GI bleed. Upper GI endoscopy revealed grade II-III esophageal varices with portal hypertensive gastropathy with blood in 2nd part of duodenum. CECT scan revealed features of chronic calcific pancreatitis with pseudocyst and GDA pseudoaneurysm with intracystic bleed. Patient again underwent coil embolization in our hospital. However, the patient again developed GI bleed. Patient was taken for emergency laparotomy and found to have bleed from splenic artery as well as GDA pseudoaneurysm into the pseudocyst. Transcystic pseudoaneurysm ligation with ligation of intracystic bleeding vessels and lateral pancreaticojejunostomy was done. Postoperatively patient recovered well. Rupture of pseudoaneurysm in chronic pancreatitis is associated with almost 100% mortality if untreated. Though radiological intervention should be the primary modality of treatment, low threshold for surgery should be kept, considering multiple feeding vessels to the pseudocyst pseudoaneurysm, which may be missed in angiography

**Keywords:** Case report, Pseudoaneurysm, GDA, Portal hypertension, PHG, Pancreatitis, Pseudocyst

### INTRODUCTION

Vascular complications in pancreatitis is reported to be upto 25%. Portal vein thrombosis may increase to 30% in those with peri-pancreatic collection and as high as 57% in patients with necrotising pancreatitis. Though portal vein and splenic vein thrombosis are common, arterial complication can occur in 5-10% cases. The risk of bleed is 15-20% in pseudocyst pseudoaneurysm.

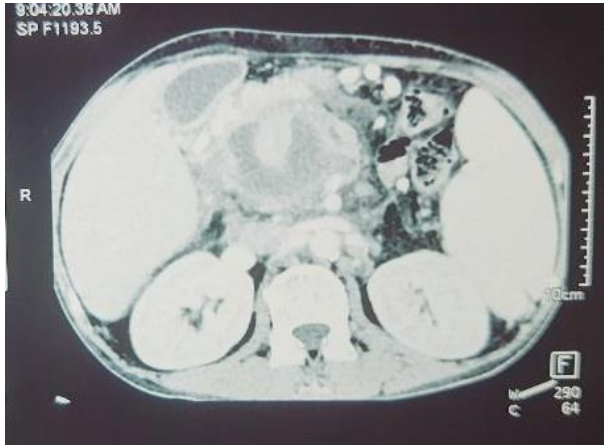
Pseudoaneurysm in a chronic pseudocyst presents as GI bleed through ampulla of Vater. Endovascular embolization forms the primary modality to control

bleeding in the majority of patients. Threshold should be kept to a minimum for surgery when interventional radiological procedures fail to arrest the bleed; due to bleed from unrecognized multiple feeding vessels bleeding.

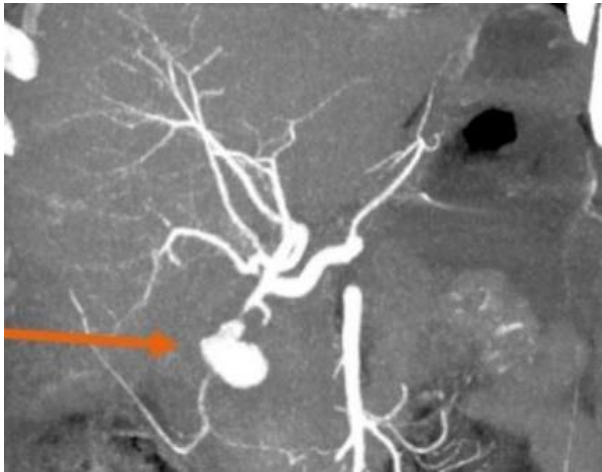
### CASE REPORT

A 43 year old male, known ethanol related chronic pancreatitis patient, who had been having repeated attacks of abdominal pain, presented to us with malena 4-5 times a day, from 10 days. 12 days before he underwent

micro coil embolisation of GDA pseudoaneurysm rupture in a different hospital.



**Figure 1: CECT abdomen demonstrating pseudocyst of size 8x8x8 cm in the duodenopancreatic groove with GDA pseudoaneurysm inside cyst.**



**Figure 2: CT angiography showing GDA pseudoaneurysm.**

On examination, ECOG: 2, blood pressure of 96/40 mmHg, PR 110 /min, RR 22/min and SpO<sub>2</sub> 98% on room air. Patient was severely pale and icteric. Abdominal examination revealed palpable swelling in the epigastric region of 4x5 cm and tenderness in the epigastric region. Patient was anemic and bilirubin was raised. Laboratory investigation revealed Hb: 6.5 gm%, total leucocyte count 8100 /cumm, total bilirubin 6.7 mg/dl, direct bilirubin 3.7 mg/dl, SGOT 38 IU/l, SGPT 19 IU/l, ALP 224 IU/l, serum albumin 2.6 gm/dl, PT 22 seconds and INR 1.79.

Contrast enhanced CT scan revealed chronic calcific pancreatitis with pseudocyst of size 8x8x8 cm in the duodenopancreatic groove with GDA pseudoaneurysm. MPD dilated (8 mm) with portal vein and splenic vein thrombosis with collaterals.

### Upper GI endoscopy

Esophagus had grade III, 2 column OV, GR I, 1 column varices of esophagus and PHG. Duodenum 1st part had extrinsic impression along anterior wall. Duodenum was edematous with oozing of blood. Mucosa not visualized properly. Injection adrenaline was injected randomly in and around the oozing area. Ampulla was visualized. There was no active bleed.

Patient continued to have malenic episodes and was taken for radiological intervention. Pre embolisation angiography revealed blush from GDA. Radiological embolisation was done with multiple nestor coils. 2 days later the patient developed malena with a drop in hemoglobin. Since multiple attempts at coil embolization failed to stop the bleeding, surgery was performed.

On laparotomy, ligation of GDA and feeding vessels to pseudoaneurysm done with transcystic pseudoaneurysm ligation with ligation of intracystic bleeding vessels. Additionally, multiple feeding arteries from splenic artery supplying the pseudoaneurysm were individually ligated. Lateral pancreaticojejunostomy was also done. Postoperatively, the patient recovered well and was discharged with normal oral diet, bowel function and normal hemoglobin, bilirubin and liver enzymes levels.

### DISCUSSION

A pseudoaneurysm is defined as an encapsulated hematoma in communication with the lumen of the ruptured vessel where the external wall consists of adventitia, perivascular tissue, fibrosis or clot. In pancreatitis proteolytic enzymes coupled with intense inflammation can erode small arterial branches and create foci of extravasation or create small pseudoaneurysms.

The SA was the most commonly affected vessel in up to 50% of cases, given its anatomic location. GDA pseudoaneurysm occurred in 20% of cases and pancreaticoduodenal arteries were involved in up to 10% of cases with the remainder involving superior mesenteric and proper hepatic arteries.<sup>5</sup>

Pseudoaneurysms can rupture into the gastrointestinal tract, peritoneal cavity, retroperitoneum, biliopancreatic ducts or pseudocysts (bleeding into the pancreatic ducts was known as hemosuccus pancreaticus). Clinically, a bleeding pseudoaneurysm typically manifested as silent anemia with malena or as intermittent massive bleeding into the gastrointestinal tract or abdominal cavity.

Early localization of a pseudoaneurysm via imaging studies was crucial for further treatment. CT angiography was preliminary imaging of choice and can be detected upto 90%-100% cases, while conventional angiogram had higher sensitivity and detect almost 95-100% cases.<sup>5</sup>

Endovascular method was the common initial choice for embolization of a pseudoaneurysm. Coils or micro coils

were the preferred and most widely used agents. Various techniques were described for embolization of a pseudoaneurysm using coils. These included sack packing, sandwich technique and proximal delivery. Pseudoaneurysms with wide neck have an increased tendency of migration of embolic material. To overcome this, stent graft (covered stent) placement, stent assisted coiling and balloon remodeling techniques were useful. Clinical success rate in endovascular method was reported to be >90%. Percutaneous embolization of pseudoaneurysms was done by either ultrasonography or CT guidance. Thrombin, glue and occasionally coils were used as embolic materials. There were some reports of successful outcome with this method. Endoscopic US guided embolization can be used in selected cases if endovascular method failed.

Despite advances in minimally invasive techniques, it may fail due to multiple feeding branches and surgery was the only option if other techniques failed. On laparotomy all four quadrants should be packed and ligation of feeding vessels should be done away from the area without jeopardizing blood perfusion to the adjacent organs. Mortality rate may reach up to 100% in untreated cases of ruptured pseudoaneurysm which can be reduced to 10% with interventional radiological procedures. Though mortality with surgery was up to 50%, it was the only option available when bleeding continued and interventional radiological techniques failed to arrest or missed bleed due to multiple pseudoaneurysm.<sup>4,5</sup>

## CONCLUSION

Pseudoaneurysm in pancreatic pseudocyst has a low incidence, however, rupture of pseudoaneurysm is associated with almost 100% mortality if untreated. So patient with ruptured pseudoaneurysm should be evaluated on an urgent basis. Though radiological intervention should be the primary modality of treatment, low threshold for surgery should be kept, considering multiple feeding vessels to the pseudocyst pseudoaneurysm.

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