

# Management of Bleeding Pseudoaneurysm of Gastroduodenal Artery Secondary to Chronic Pancreatitis

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## SUMMARY

**A bleeding pseudoaneurysm of the peripancreatic artery can present with massive upper gastrointestinal hemorrhage. History of pancreatitis and urgent imaging are crucial in the making of the diagnosis. Here, we report a patient with alcoholic chronic pancreatitis presented with ruptured pseudoaneurysm of gastroduodenal artery (GDA). He was treated with percutaneous angiographic embolisation.**

## KEY WORDS:

*Pseudoaneurysm, gastroduodenal artery, selective embolisation, pancreatitis, percutaneous transarterial embolisation, bleeding pseudoaneurysm*

## INTRODUCTION

A bleeding pseudoaneurysm of the peripancreatic artery is an uncommon phenomenon. Nevertheless, this clinical condition can be a life threatening complication of chronic pancreatitis. Timely radiologic intervention in a specialized center is essential in managing this acute condition.

## CASE PRESENTATION

A 53 year-old Indian man with history with a history of chronic alcohol consumption for more than 15 years presented to the emergency department at a Private Hospital on 6th May 2011 with severe epigastric pain which radiated to the back for two days. It was associated with melaena and haematemesis. He was referred to Kuala Lumpur General Hospital and was found to be hypotensive with hemoglobin level of 6g/dL. Immediately after resuscitation, he was taken to the endoscopic suite for urgent upper gastrointestinal scope. However, the source of bleeding was not identified. Hence, a colonoscopy was carried out which only revealed blood coating the colonic mucosa and the terminal ileum was clear. A working diagnosis of bleeding diverticular disease was made. As the patient's condition stabilized, he was treated conservatively. At day five of hospitalization, 11th May 2011, the managing team noted a tender mass over the patient's epigastrium. An urgent ultrasonography followed by a computed tomography (CT) scan of the abdomen was performed and showed a large pseudoaneurysm possibly arising from the gastroduodenal artery (figure 1). He was referred to the Hepato-Pancreato-Biliary Department, Selayang Hospital on 14th May 2011.

The biochemical test showed that the full blood count and renal profile were normal. His serum amylase and c-reactive protein were mildly elevated. His liver function test revealed acceptable albumin level, raised total bilirubin with predominant indirect bilirubin and transaminases. The other blood parameters such as random blood sugar, calcium level, coagulation profile were normal as well. An emergency superselective angiography of the gastroduodenal artery (GDA) via the celiac trunk was done on the same day which showed a huge mid gastroduodenal pseudoaneurysm (figure 2). Coil embolisation was performed successfully. A CT mesenteric angiography was carried out on day nine of procedure, 23rd May 2011 which revealed no active bleeding of the residual aneurysmal sac with surrounding hematoma measured 4.5 x 6.5 x 11.5 cm. He was subsequently discharged and did not have recurrent of symptom in the next two months of follow up. Abstinence from alcohol was reemphasized to the patient.

## DISCUSSION

The reported incidence of arterial complications in pancreatitis is 4% to 10%<sup>1</sup>. In managing a patient with a suspicious bleeding pseudoaneurysm, many centers would employ the use of CT scans as a first line of imaging. However, in centers with limited resources, a quick transabdominal ultrasound is still an important diagnostic or screening tool. A typical grey scale ultrasound feature of pseudoaneurysm would display an anechoic mass with posterior acoustic enhancement and possibly with hyperechoic margins<sup>2</sup>.

Endovascular coil embolisation, covered stent placement, percutaneous ultrasound-guided thrombin injection and open surgical repair are options in the treatment armamentarium of visceral pseudoaneurysms. Transarterial catheter coil angioembolisation has been used extensively and is considered less invasive than surgery. The reported success rate of embolisation is 79% to 100%<sup>3</sup>. This procedure was performed in our patient and successfully stopped the bleeding.

In cases where embolisation therapy failed emergency haemostatic surgery should be performed. Surgery is also reserved for patients with unstable haemodynamics and when angioradiology expertise is not available<sup>4</sup>. The

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**Fig. 1 :** CT scan on 12th May 2011 showed a large pseudoaneurysm of the GDA.



**Fig. 2 :** Emergency mesenteric angiogram showed the GDA aneurysm.

procedure entails ligation of the bleeding vessel in the pancreatic head and distal pancreatic resection in patients bleeding from the splenic artery or its branches<sup>4</sup>. Some authors proposed the technique of proximal and transcystic ligation of a bleeding vessel with internal or external drainage of the cyst is superior to pancreatic resection<sup>5</sup>. Distal pancreatectomy and splenectomy should be performed in pancreatic body or tail bleeding. This procedure carried low morbidity and mortality rates<sup>4,5</sup>.

In summary, there are different treatment options for bleeding pseudoaneurysm in chronic pancreatitis depending on the technical aspects, logistic and type of expertise available. They can be classified into angioembolisation alone, angioembolisation followed by endoscopic therapy (Endoscopic Retrograde Cholangio-Pancreatographic (ERCP) drainage of pseudocyst by pancreatic duct stenting or endoscopic pseudocystogastrostomies) and surgery. Repeated angioembolisation can be attempted in patients with recurrent bleeding whether they have initially undergone embolisation or operation<sup>4</sup>.

**CONCLUSION**

We would like to conclude that the management of bleeding pseudoaneurysm in chronic pancreatitis necessitates a high index of suspicion. The patients should undergo emergency CT angiographic evaluation followed by embolisation upon confirmation. Urgent referral to a nearby tertiary institution is critical should the primary hospital is not sufficiently equipped or absence of interventional radiologic expertise.

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