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Case Report

Internal Medicine Section

Gastroduodenal Artery Pseudoaneurysm as a Complication of Pancreatitis Presenting with Lower Gastrointestinal Bleed

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ABSTRACT

Chronic pancreatitis is associated with an uncommon but important complication, the formation of the pseudoaneurysm with an incidence of 10%. The splenic artery is the most common artery affected by pseudoaneurysm. A 55-year-old male patient with pseudoaneurysm of the gastroduodenal artery, an unusual complication of chronic pancreatitis. He presented with haematemesisf and was managed with transfusion of blood and blood products and coil embolisation with the help of digital subtraction angiography. Pseudoaneurysms are one of the rare but important complications of chronic pancreatitis which requires treatment even if they are asymptomatic and incidentally diagnosed on imaging. A history suggestive of upper gastrointestinal bleeding in a case of pancreatitis requires adequate evaluation for source of the bleeding.

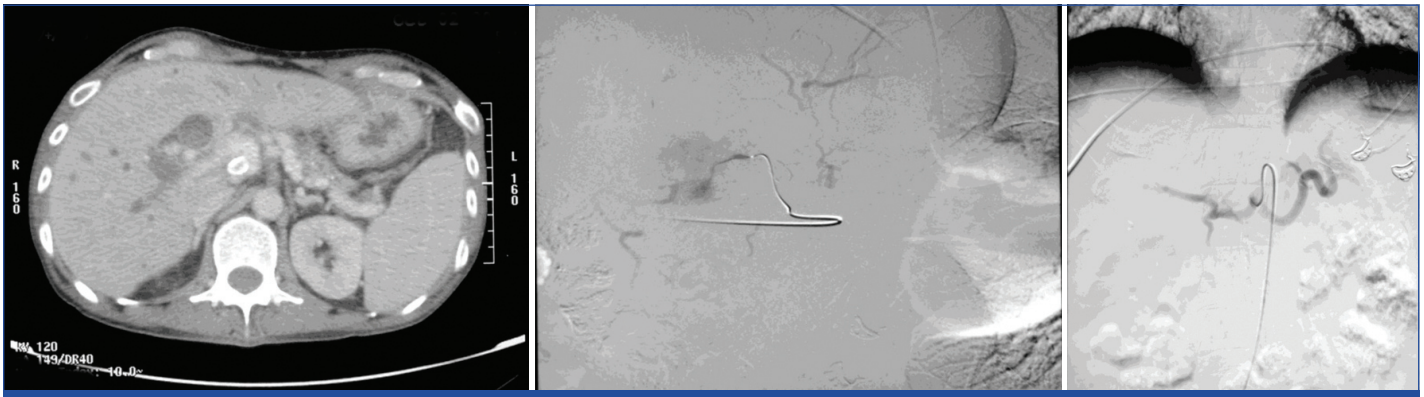
Keywords: Aneurysm, Chronic pancreatitis, Haematemesis

CASE REPORT

A 55-year-old male patient complained of yellowish discolouration of eyes and skin since three months and severe upper abdominal pain and discomfort with haematemesis since five days. He was a daily wage labourer by occupation with history of alcohol abuse from last 15 years. There was evidence of psychological dependency using CAGE (3/4) questionnaire. The patient also had history of infrequent epigastric pain usually on consumption of alcoholic beverages. He also suffered from type 2 diabetes and doubtful compliance to the prescribed medications. Initial investigation reveals anaemia (haemoglobin 6 gm%) with elevated alkaline phosphatase (663 IU/L), amylase (543 U/L) and lipase levels (1050 U/L).

Ultrasound Sonography (USG) examination of the abdomen of the patient was performed, which revealed well defined anechoic cystic lesion above the head of the pancreas with chronic pancreatitis and bilobar Intrahepatic Biliary Radical Dilatation (IHBRD). Upper gastrointestinal endoscopy was done which reveals small varices with portal gastropathy. Colonoscopy was also done where blood was seen in hepatic flexure of large intestine. Non contrast Computed Tomography (CT) scan of upper abdomen was performed at the level of pancreas that showed changes suggestive of chronic pancreatitis in form of specks of calcification and irregular margins with prominence of main pancreatic duct. Contrast Enhanced Computed Tomography (CECT) showed presence of round to oval lesion in the region of head of pancreas which appeared hyperdense on arterial phase and on venous phase there was complete fill in, likely pseudoaneurysm [Table/Fig-1].

Thus, a diagnosis of pseudoaneurysm arising from the gastroduodenal artery was considered [Table/Fig-2]. The patient was then subjected to Digital Substraction Angiography (DSA) where gastroduodenal artery pseudoaneurysm coil embolisation was done [Table/Fig-3]. The patient was managed with intravenous insulin and 5 units of packed red blood cells and 4 units of fresh frozen plasma were transfused during the hospital stay. The patient's haematochazia stopped after four days with the embolisation therapy and he was discharged on sixth day with advice for modification of diet, regular psychiatry follow-up for abstinence from alcohol and strict compliance to prescribed medication. At three months follow-up, the patient is doing fine with history of infrequent alcohol binge episodes. Plasma glucose level ranges between 150-200 mg/dL, haemoglobin level of 9 gm/dL with normal liver function test.



[Table/Fig-1]: Hyperdense on arterial phase and complete fill in on venous phase, likely pseudoaneurysm. **[Table/Fig-2]:** Pseudoaneurysm arising from the gastroduodenal artery. **[Table/Fig-3]:** Gastroduodenal artery pseudoaneurysm coil embolisation was done. (Images from left to right)

DISCUSSION

The complications of chronic pancreatitis lead to morbidity and loss of a productive life for the patient. Pseudoaneurysm is an uncommon but important complication encountered upto 10% of the patients suffering with chronic pancreatitis. Mostly, they present with acute manifestation of lower gastrointestinal bleeding or a gradual decrease of the haematocrit. Splenic artery is most common artery affected followed by gastroduodenal and the pancreaticoduodenal arteries [1]. Often the pseudoaneuyrsm are asymptomatic but the presentation may present with an epigasrtic mass, bleeding and pain and incidentally being picked up on USG, CT or angiography done for follow up visit for the primary disease or for other reasons.

The dilatation in pseudoaneurysms does not affect all the layers of the vessel wall and has been seen without any association with pseudocyst or abscess formation in cases of pancreatitis [2]. Almost in half of the cases (30-50%) of pseudoaneurysm, splenic artery is involved followed by the gastroduodenal (10-15%) and the pancreaticoduodenal arteries (10%) which is followed by left gastric, hepatic and small intrapancreatic arteries [1,3,4]. The splenic artery is in anatomical proximity to the pancreas as it runs along the pancreatic bed to reach the spleen. The inflammatory process causes partial digestion of arterial wall with loss of elastic tissue, resulting in focal dilatation of vessel wall, forming true aneurysms. False aneurysms are believed to occur with the digestion of arterial wall which rupture into pseudocyst forming pseudoaneurysm [5].

Usually asymptomatic but may manifest as pain in the epigastric region or have GI/peritoneal bleed leading to anaemia as evident in this patient [5]. The lowest rupture incidence (2%) among all the visceral artery aneurysm is that of celiac trunk aneurysms [5]. Pseudoaneurysm causes bleeding which is most commonly reported in bowel followed by the peritoneal cavity and then pancreatic duct or biliary tree. As pancreas is a retroperitoneal organ, which lies medially to second part (C-portion) of the duodenum and the lesser sac anteriorly and its head revolves around the distal end of common bile duct. This is the reason why the pseudoaneurysm can bleed into the bowel, biliary tree, retroperitoneum, or peritoneal cavity.

The presence of pseudoaneurysm is mostly suspected on USG but the use of doppler USG helps in identifying the vascular origin of the lesion. Grey scale USG identifies the pseudoaneurysms as an anechoic mass with posterior acoustic enhancement, possibly with hyper echoic margins [6]. However, this presentation lacks the specificity due to close resemblance to pseudocyst of pancreas. Pulsation of the mass may help in diagnosis but confirmation is difficult without further imaging studies, however rapid enlargement of the mass is suggestive of a vascular lesion and blood flow can be noted on doppler USG. Doppler USG has its limitation in obese individuals and deeply seated lesions. Patients with tenderness with probe contact and aortic pulsation with motion artefacts makes the diagnosis even more challenging. The CT finding of pseudoaneurysm include a well-defined mass with a hyperdense centre that shows contrast enhancement and less dense periphery corresponding to mural clot and fibrous wall [2]. Angiography is the gold standard method for confirming the diagnosis and to locate the exact location of an aneurysm [4].

Although, some reports suggested spontaneous thrombosis of some pancreatic pseudoaneurysms, the current consensus holds that all malformations should be treated to prevent any complications [7]. Trans arterial catheter angioembolisation with or without endoscopic stent placement is a nonsurgical management. Angioembolisation is considered to be less invasive than surgery. This procedure is not even comfortable for the patient, but it can be completed quickly [8].

CONCLUSION(S)

Pseudoaneurysm is important but uncommon complication of chronic pancreatitis. It should be kept in mind in patients with chronic pancreatitis who presents with gastrointestinal bleed. Although, ultrasound is an important modality but CT angiography is the modality of choice. Embolisation with help of Digital Subtraction Angiography (DSA) is the main stay of treatment.

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