Case Report

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Left Gastric Artery Pseudoaneurysm within a Pancreatic Pseudocyst: A Case Report

Internal Medicine Section

BUDUMURI GAUTAM V KUMAR[1], PRASANNA KUMAR BEERAM[2], UDIT CHAUHAN[3], ITISH PATNAIK[4], ROHIT GUPTA[5]

ABSTRACT

Left gastric artery Pseudoaneurysm (PSA) is a rare vascular complication of Acute Pancreatitis (AP), resulting from erosion of the pancreatic or peripancreatic artery into a pseudocyst. The splenic artery is the commonest artery involved, followed by the gastroduodenal artery and pancreaticoduodenal arteries. The occurrence of left gastric artery PSA within a Pancreatic Pseudocyst as sequelae of AP is rare but a significant life-threatening complication. Only a few cases have been reported on left gastric PSA causing haemorrhagic pseudocyst. The authors report a case of AP in a 57-year-old male with history of significant alcohol consumption who presented with pain in abdomen of pancreatic origin. On evaluation, he had a pseudocyst in the pancreatic head. After transpapillary drainage of the pseudocyst, it started draining bloody contents. An abdominal computed tomography was obtained, which showed a small left gastric artery PSA. The patient underwent successful angiographic coil embolisation of the PSA.

Keywords: Acute pancreatitis, Angiography, Embolisation, Therapeutic, Vascular complications

CASE REPORT

A 57-year-old man with a history of gallstone related AP, six months back, managed conservatively, presented to the Department of Gastroenterology with dull aching continuous epigastric pain in the abdomen for six months and significant loss of weight. Around six months back, he had an episode of AP, gallstone related. He was managed conservatively with intravenous fluids and parenteral analgesia. At that time, he was hospitalised for three to four days and got discharged later. There was no history of any surgical or radiological interventions at that time. At the time of discharge, he was advised for cholecystectomy. He underwent laparoscopic cholecystectomy after one to two months. He has no known co-morbidities, and his family history was nothing significant, And there was no significant surgical history. Besides, his general examination was unremarkable. At the time of presentation, his pulse rate was 110 per minute, and the rest of the vitals were within normal limits and his routine investigations revealed haemoglobin of 12.2 gm/dL,, normal liver function tests and serum amylase, and lipase were 150 IU/dL and 25 IU/dL, respectively.

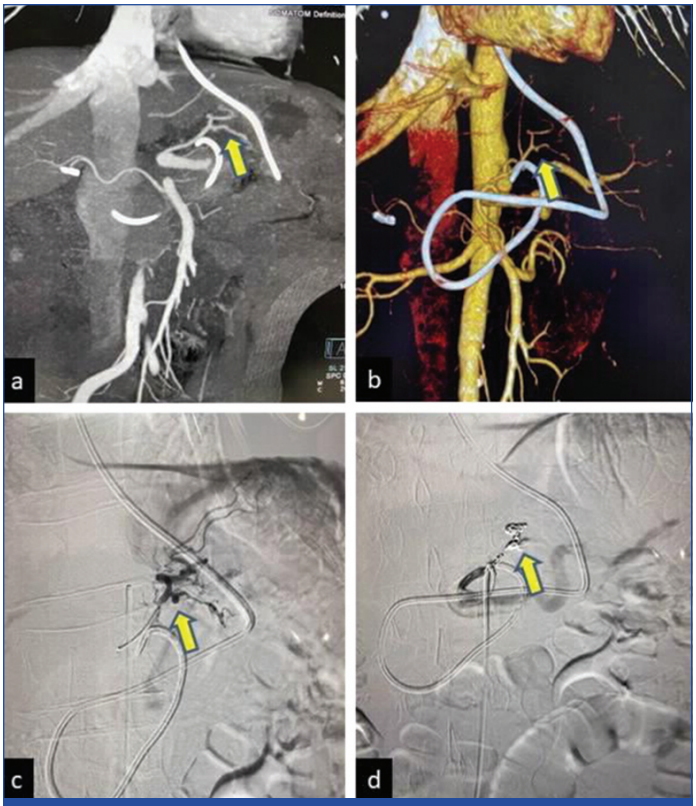
The patient underwent a contrast enhanced computer tomography of the abdomen. It demonstrated a well-defined hypodense collection of size 3.8 cm in lesser sac communicating with the main pancreatic duct at the body of the pancreas. A provisional diagnosis of AP with pancreatic pseudocyst was made. Given persistent pain in the abdomen, he underwent endoscopic retrograde cholangiopancreatography and transpapillary drainage of the cyst along with cyst fluid analysis. On aspiration, the cyst contents were haemorrhagic [Table/Fig-1]. Cyst fluid analysis was sent for biochemical analysis, revealing high amylase levels (>10,000 U/L). Histopathological examination could not be done.

A Nasopancreatic Drain (NPD) was placed in the cyst cavity, which initially drained haemorrhagic fluid but three days postprocedure, fresh blood was noted draining through NPD with a significant fall in haemoglobin concentration (from 12.2-8.7 gm/dL). A Computed Tomography (CT) angiography was done immediately [Table/Fig-2a,b], which demonstrated the presence of a small PSA of size 5 mm arising from the left gastric artery. Due to the ongoing bleeding, an emergent decision was taken for catheter angiography with a 5F Shepherd hook (Boston Scientific, Boston, MA, USA) catheter. There was a spleno gastric trunk with a replaced right hepatic artery. A small PSA was seen arising from the left gastric artery in the wall of the superior part of the pseudocyst. Selective cannulation of the left gastric artery was done with a 2.7F microcatheter (Progreat Terumo, Somerset, NJ, USA). Coil embolisation was done using 8 coils (5 of 4 mm coils and 3 of 3 mm coils, VortX™ 18 Vascular Occlusion Pushable Coils, Boston Scientific, Boston, MA, USA). A repeat angiogram did not show any contrast filling, thus confirming complete resolution of the PSA [Table/Fig-2c,d]. The postprocedure patient was stable and discharged after 48 hours. At six months follow-up, he was doing fine and was asymptomatic.

[Table/Fig-1]: Haemorrhagic fluid from nasopancreatic cystic drain.

DISCUSSION

Visceral artery aneurysms are classified into two types, true and PSA. They are classified according to the originated artery, opening into the luminal tract and exposure to the peripancreatic inflammation. Vascular complications in pancreatitis are well known sequelae after both acute and Chronic Pancreatitis (CP). Although the overall incidence is low and seen up to 1.2-14% of the cases, a higher frequency is seen in CP than AP. But overall mortality related to PSA rupture is higher (up to 34-54%) in AP than CP [1]. Most commonly involved vessels are the arteries that surround pancreatic parenchyma, but PSA formation can involve any artery in the



[Table/Fig-2]: a) Coronal Maximal Intensity Projection (MIP) Multiplanar Reconstruction (MPR) displaying small PSA arising from the left gastric artery very well seen on coronal VRT (Volume-Rendered Technique); b) DSA (Digital Subtraction Angiography); c) showing super selective cannulation of left gastric artery displaying small PSA. d) Coil embolisation of left gastric artery leading to complete exclusion of PSA.
Yellow arrow indicates PSA

abdominal cavity. Frequently occurring vessels for PSA formation are splenic artery (60%), hepatic artery (20%), superior mesenteric artery (5%), and celiac trunk (<4%) [2]. In AP, left gastric artery PSA incidence is also less common [3,4].

The proposed mechanism for PSA formation is the locally contained haematoma with turbulent blood flow from a damaged arterial wall due to thinning of the vessel wall by pancreatic enzyme action. The risk factors of PSA formation in AP include severe necrotising pancreatitis, multi-organ failure, the formation of intra-abdominal collections such as abscesses, pseudocysts, and walled off necrosis occurs in proximity to any vascular structures which results due to injury to the vessel walls by enzyme rich pancreatic fluid. Another possible cause includes prior interventions in the form of percutaneous drainage of collections, surgical pancreatic necrosectomy, blunt abdominal trauma causing direct injury to the splanchnic vasculature [5].

The PSA in the setting of pancreatitis typically manifest as gastrointestinal bleeding due to its rupture or persistent abdominal pain. Other rare presentations are retroperitoneal bleed, intraperitoneal bleed, bleeding from pancreatic or common bile ducts. It can be asymptomatic in <10% of patients [6]. Irrespective of the patient's symptoms, size, and location of the PSA, these aneurysms, once identified, need to be tackled due to a significant risk of spontaneous rupture and bleeding. Association of PSA, along with local complications of pancreatitis such as pancreatic pseudocysts, abscesses, and walled off necrosis, deliver further challenges to their management. Endovascular procedures are the initial treatment choice in pancreatitis related PSA with a high success rate [7,8]. Endovascular treatment includes the deployment of coils, glue, and thrombin injection [9]. Surgery is indicated in failed embolisation or rebleeding after embolisation. In our patient, who presented with pain abdomen and local complications in the form of the pseudocyst, and after subsequent transpapillary drainage of cyst, he had bloody drainage from nasocystic drain, which was crucial for diagnosis. Subsequent abdominal imaging in CT abdominal angiography showed left gastric artery PSA within the pseudocyst for which successful coil embolisation was done.

CONCLUSION(S)

The PSA in acute and CP are the most feared complication due to their potential fatality. Association of PSA along with other local complications, provide additional challenges. They have varied presentations, in the form of intra luminal or extra luminal bleeding or occasionally in the draining sites placed endoscopically or percutaneously. Endovascular procedures remain the mainstay of management with less associated difficulties.

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PARTICULARS OF CONTRIBUTORS:
1. Senior Resident, Department of Gastroenterology, All India Institute of Medical Sciences, Rishikesh, Uttarakhand, India.
2. Senior Resident, Department of Gastroenterology, All India Institute of Medical Sciences, Dehradun, Uttarakhand, India.
3. Assistant Professor, Department of Radiodiagnosis, All India Institute of Medical Sciences, Dehradun, Uttrakhand, India.
4. Assistant Professor, Department of Gastroenterology, All India Institute of Medical Sciences, Dehradun, Uttrakhand, India.
5. Additional Professor, Department of Gastroenterology, All India Institute of Medical Sciences, Rishikesh, Uttarakhand, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Rohit Gupta,
Additional Professor, Department of Gastroenterology, AIIMS Rishikesh,
Dehradun, Uttarakhand, India.
E-mail: docgupta1976@gmail.com

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