



Pseudoaneurysm, A Life Threatening Vascular Complication In Pancreatitis – Case Series

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Abstract

Pancreatitis along with its vascular complications is dangerous and potentially lethal. Vascular complications due to pancreatitis range from asymptomatic venous thrombosis to massive haemorrhage due to rupture of pseudoaneurysm. The survival of patients with pancreatitis and vascular complications depends on the early diagnosis of these complications. MDCT plays an important role in early detection of complications and for assessing response to therapy.

Keywords: Pancreatitis, vascular complications, pseudoaneurysms, MDCT

Introduction

Vascular complications due to pancreatitis range from asymptomatic venous thrombosis to massive haemorrhage due to rupture of pseudoaneurysm which occur secondary to necrotizing pancreatitis in 60% of cases [1].

The most common vascular complications resulting from pancreatitis includes erosions of the upper gastrointestinal arteries, portal venous system thrombosis, formation of varices, haemorrhage into a pseudocyst, or pseudoaneurysms and rupture of a

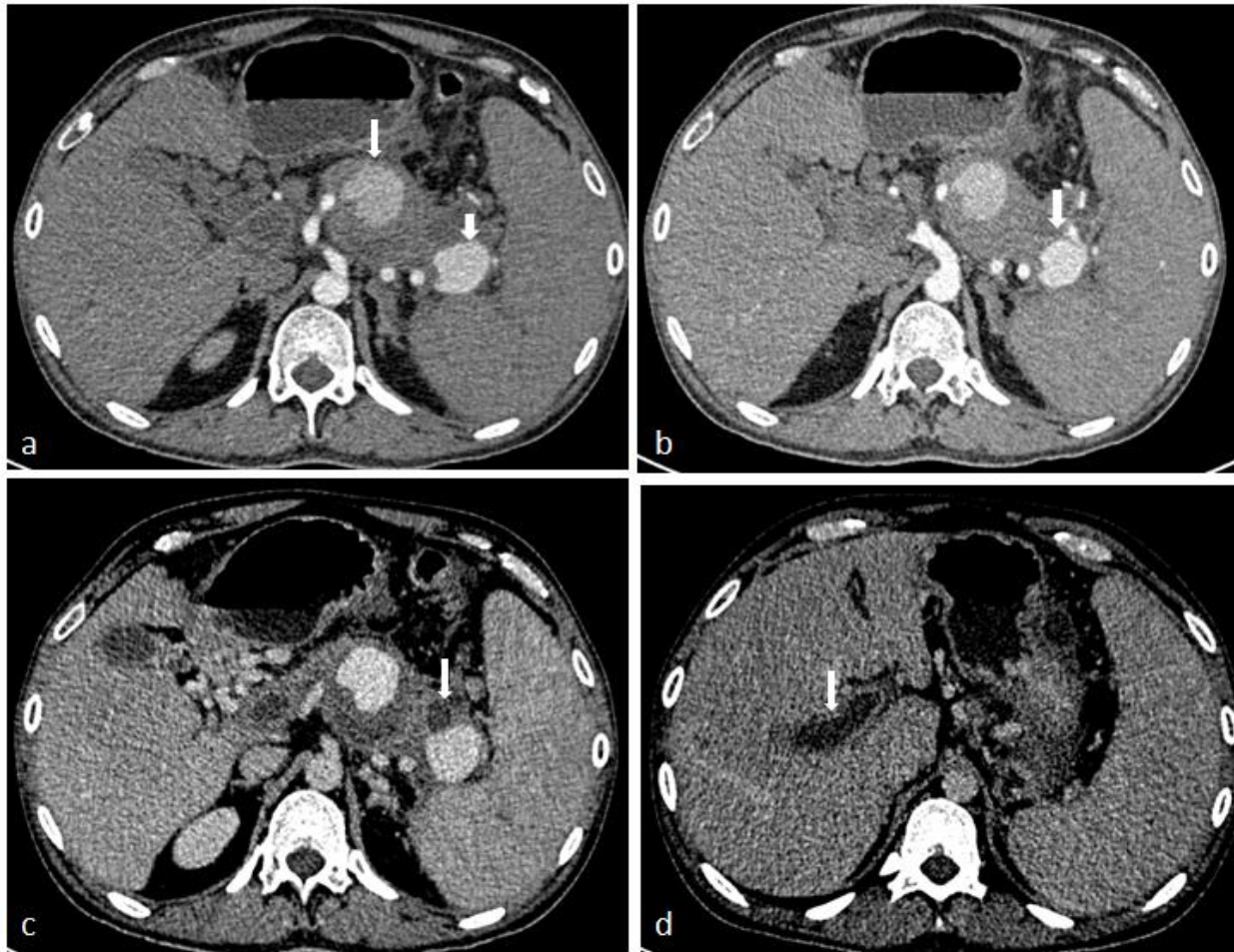
pseudoaneurysm. Pancreatitis along with its vascular complications is dangerous and potentially lethal. The survival of patients with pancreatitis and vascular complications depends on the early diagnosis of these complications [2,3].

The development of pseudoaneurysms as a vascular complication of pancreatitis has been reported to occur in 3.5-10% of patients with pancreatitis [2,4].

MDCT plays an important role in early detection of complications and for assessing response to therapy[5].

Cases

Case 1: A 34 year old male patient who is a known case of pancreatitis and presented with history of abdominal pain.



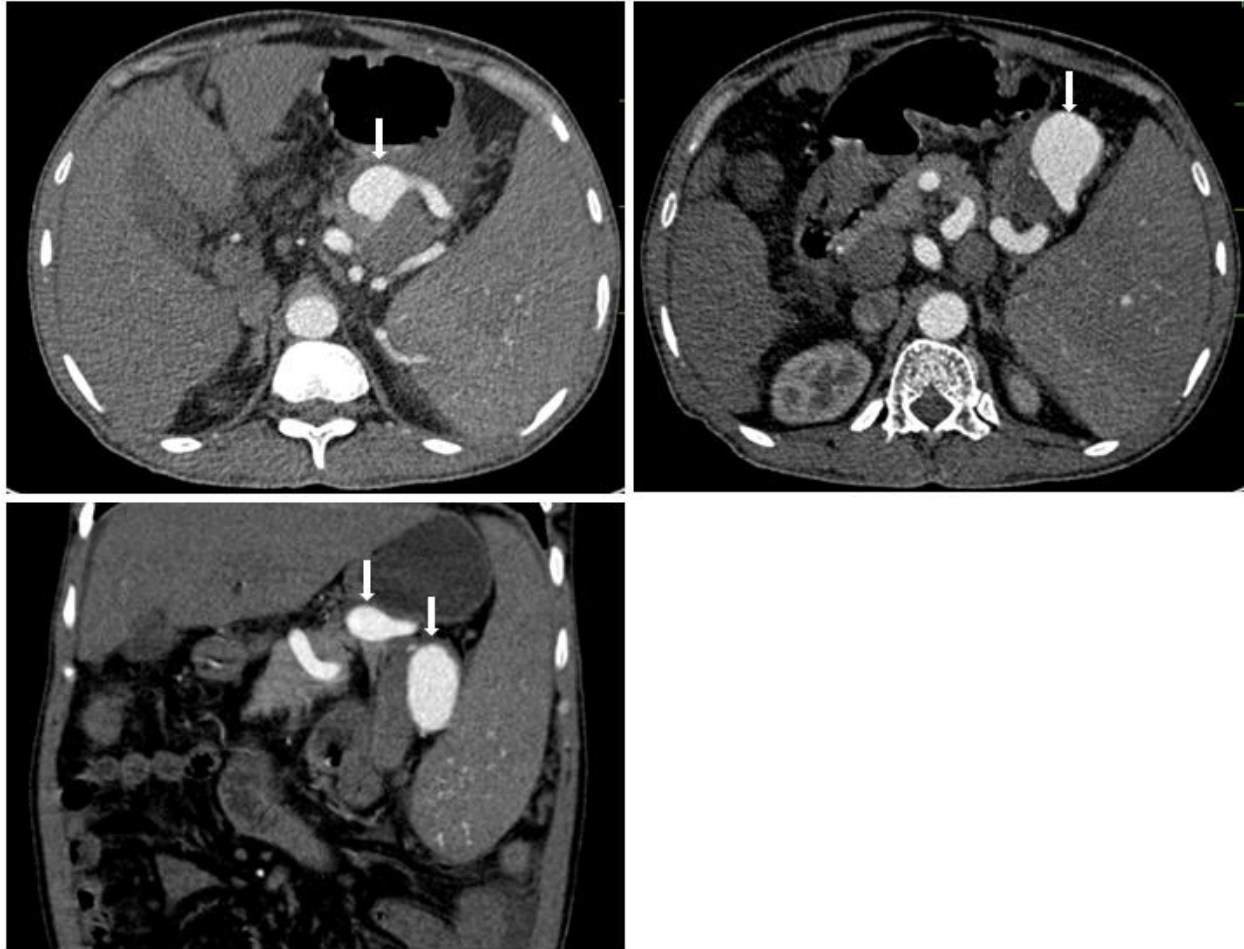
- a) CECT abdomen arterial phase images showing 2 pseudo-aneurysms, one near proximal splenic artery and another near the splenic hilum.
- b) CECT abdomen arterial phase images showing 2 pseudo-aneurysms, one near proximal splenic artery and another near the splenic hilum.
- c) CECT abdomen venous phase image showing acute necrotising pancreatitis.
- d) CECT abdomen portal phase images showing portal venous thrombosis.

Case 2: A 48 year old male patient who is a known case of necrotizing pancreatitis and presented with history of abdominal pain with raised amylase levels.



- a) Plain CT abdomen study showing bulky pancreas with peripancreatic collection.
- b) Arterial phase CT abdomen showing dissection of Coeliac artery.
- c) Arterial phase CT abdomen showing pseudo-aneurysm of proximal aspect of splenic artery.
- d) Venous phase CT abdomen showing necrotic areas within pancreas and peripancreatic collection.

Case3: A 46 year old male patient presented with history of epigastric pain



- CECT abdomen arterial phase images showing pseudo-aneurysm near mid splenic arteries with peripancreatic fat stranding.
- CECT abdomen arterial phase images showing pseudo-aneurysm near distal splenic arteries with peripancreatic fat stranding.
- CECT abdomen arterial phase coronal image showing 2 pseudo-aneurysms.

Discussion:

Pseudoaneurysms associated with pancreatitis occur due to vessel wall erosion by enzyme-rich peripancreatic fluid released by damaged acinar cells, or contained within an adjacent pseudocyst[1]. These fluids cause weakening and elastolytic erosions of the vessel wall, which may result in the formation of a pseudoaneurysm[6,7].

The risk factors for developing vascular complications include necrotizing pancreatitis, multi-organ failure, sepsis, and pancreatic fluid-collections such as abscesses, pseudocysts or walled-off necrosis. Other condition like long-term anticoagulation therapy, previous pancreatic

necrosectomy, and underlying vasculitis also increase the probability of developing pseudoaneurysm [6,8].

Patients may present with abdominal pain or it may be asymptomatic in some patients. These aneurysms are frequently accompanied by life threatening complications, mainly rupture and bleeding [9]. Pseudoaneurysm was first reported by Starlinger in 1930[9,10].

The most commonly involved artery is the splenic artery (30–50%) due to its proximity to the pancreas. After the splenic artery, the gastroduodenal artery is involved in 10% and the pancreaticoduodenal artery in 10%, followed by the superior mesenteric, left gastric, hepatic, and small intrapancreatic arteries[9,11,12].

Hemorrhage secondary to pseudoaneurysm rupture may occur into the peritoneal cavity, retroperitoneum, gastrointestinal tract, into a pseudocyst, or into the pancreatic duct (haemosuccus pancreaticus) [1,13].

MDCT in arterial phase is a first-line investigation and place an important role in diagnosing pseudoaneurysms associated with pancreatitis with a similar sensitivity rate that of angiography[1].

Pseudoaneurysms can be managed surgically or by endovascular embolization using covered stent, coils, percutaneous or transcatheter thrombin injection. Main advantages of endovascular therapy are less postoperative pain, shorter hospital stay, and early return to activities of daily life. Rebleeding after embolization or failed embolization can be managed surgically by direct ligation of the bleeding vessel or resection of the pancreas with pseudoaneurysm [9,14,15].

Conclusion:

Pseudoaneurysm following pancreatitis can lead to life threatening complication when it ruptures causing intra/retroperitoneal hemorrhage or gastrointestinal hemorrhage. Early diagnosis of this vascular complication using MDCT will help in its early management which will considerably reduce the morbidity and mortality.

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