CASE REPORT

DIAGNOSTIC DILEMMA IN A CASE OF SPONTANEOUS RUPTURE OF SPLENIC ARTERY PSEUDOANEURYSM, TREATED SUCCESSFULLY BY ENDOVASCULAR COIL EMBOLIZATION- A CASE REPORT

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ABSTRACT

Ruptured pseudoaneurysm in the setting of chronic calcific pancreatitis is a rare but fatal complication. Mortality rates can be high depending upon size and site of the bleeding aneurysm, general condition of the patient and more importantly, delay in the diagnosis. We report here a case of spontaneous bleed from splenic artery pseudoaneurysm in a patient with chronic pancreatitis. In this case, diagnosis was inadvertently delayed at sub divisional hospital level where it was thought to be a case of acute on chronic pancreatitis, which is in fact a more common entity. Patient's condition deteriorated and he was referred to our tertiary care hospital where he was diagnosed to have bleeding pseudoaneurysm with encysted hemoperitoneum. He was treated successfully by endovascular coil embolization and percutaneous drainage of encysted hemorrhagic collection. The aim of this case report is to show the diagnostic dilemma that a ruptured pseudoaneurysm can present with i.e. mimicking acute pancreatitis with pseudocyst formation. Secondly, we want to emphasize the importance of Contrast Enhanced CT with CT Angiography in patients with symptoms of acute on chronic pancreatitis. The case report also demonstrates the feasibility and safety of coil embolization as a minimally invasive management option for ruptured splenic artery pseudoaneurysm.

Keywords: Coil embolization, CT Angiography, Digital Subtraction Angiography(DSA), Endovascular embolization, Pseudoaneurysm.

Abbreviations: CT-Computed Tomography, CECT-Contrast enhanced CT scan, DSA-Digital Subtraction Angiography

Introduction

Acute haemorrhage in the course of chronic pancreatitis is a serious and challenging complication. More often, this results from a ruptured pseudoaneurysm of splenic artery. Pancreatic enzymes in pancreatitis cause necrotizing vasculitis causing defragmentation of collagen fibres. The condition presents as severe acute abdomen and constitutional deterioration of the patient. CECT with CT Angiography helps to diagnose the case early. In appropriate patients, diagnostic angiography and super selective micro coil embolization may obviate the need for emergency surgery and should be considered as treatment alternative. In our case report, this complication was successfully managed by super selectivemicro coil embolization.

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Case Report

A 55 year old male with a prior diagnosis of chronic calcific pancreatitis, was initially admitted in a sub-divisional hospital with symptoms of acute abdomen (epigastric pain, tenderness, vomiting). An abdominal USG and subsequent NECT showed a moderate size pseudocyst formation near the tail of pancreas coexisting with chronic pancreatitis (Fig. 1). With moderately elevated serum amylase and lipase levels, borderline leukocytosis (12000/cu.mm) and the above clinical

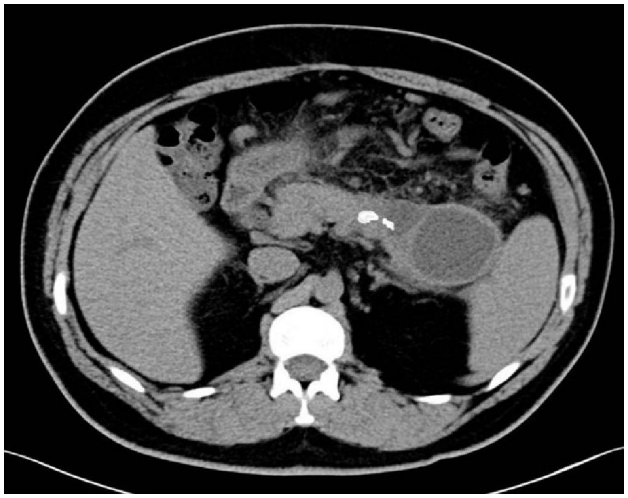

Figure 1: NCCT abdomen reveals encysted collection near the tail region of pancreas with intrapancreatic calcification

and radiological findings, it was initially diagnosed as a case of acute on chronic pancreatitis and was treated accordingly at the sub divisional hospital. But, there were no signs of clinical improve-ment, rather, the patient deteriorated haemodyna-mically in the next 12 hours and was referred to our hospital.

His hemoglobin levels had fallen from 9 g% to 5 g% within a span of 24 hours. At our hospital, vigorous resuscitation was done along with 4 units of blood transfusion. A CECT with CT Angiography of abdomen was conducted at our department. It showed a small pseudoaneurysm in the lower polar branch of splenic artery beyond the splenic hilum along with a large intraperitoneal high density encysted collection (HU-40 to 45) (Fig. 2). Finally it was concluded that the acute episode was due to ruptured splenic artery pseudoaneurysm with encysted haemoperitoneum.

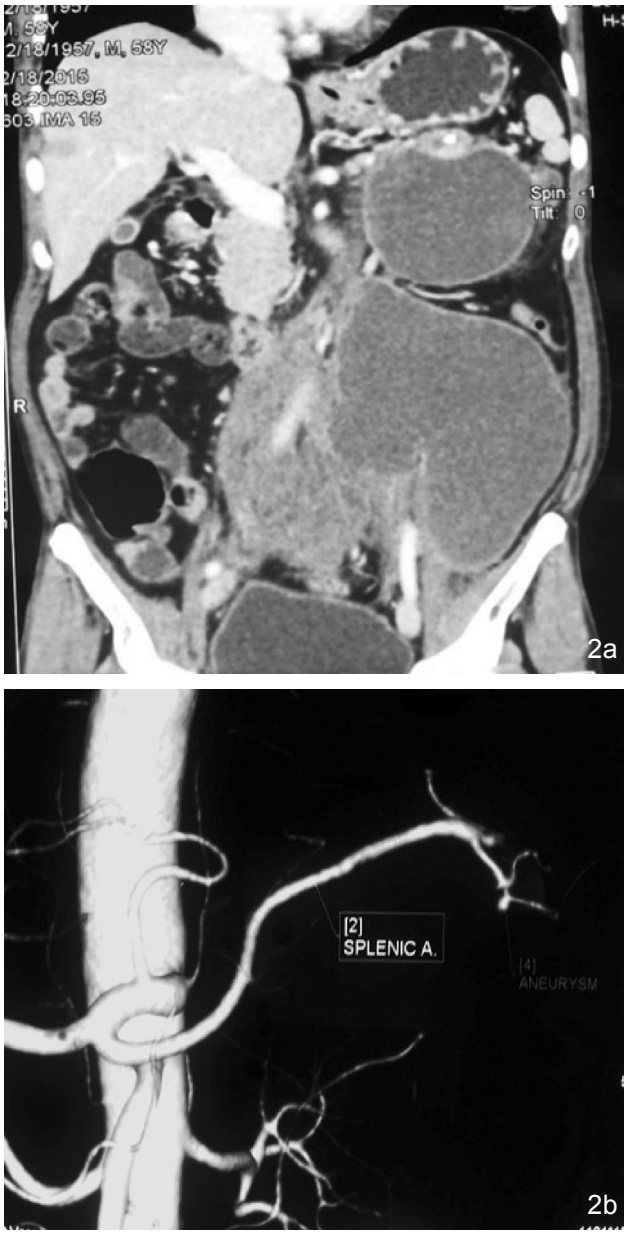

Figure 2a and 2b: CECT with CT Angiography of abdomen shows a large intraperitoneal collection with a small pseudo aneurysm arising from lower polar branch of splenic artery.

It wasn't acute exacerbation of chronic pancreatitis which was initially thought off; rather it was a complication of chronic pancreatitis itself.

We decided to do a minimal access intervention i.e., endovascular coil embolization through right CFA approach in our cathlab. Splenic artery DSA (done using a 5 F Cobra catheter) showed a small pseudo-aneurysm (4 mm) in the lower segmental branch along with "nipple sign" i.e an area of outpouching in

the wall of the pseudoaneurysm, which is considered as the potential site of leakage (Fig. 3). Super selective coil embolization of the aneurysm was done using a

Figure 3: Selective Splenic artery DSA confirms small pseudoaneurysm

2.3 F PROGREAT micro catheter and a pair of 018 coil (3x3 size). Post embolization DSA showed complete occlusion of the pseudoaneurysm (Fig. 4). USG guided percutaneous drainage of the intraperitoneal hemorrhagic collection was done on the same

Figure 4a: Super selective micro catheter tip placement within pseudoaneurysm

Figure 4b: Placement of two micro coils within the pseudoaneurysm (post embolization)

day using a 10 F Pigtail catheter (Fig. 5). Mild postembolization pain and fever were managed by simple analgesic and antipyretics. USG screening of abdomen

Figure 5: Fluoroscopic image after percutaneous drainage of encysted haemoperitoneum

after 48 hours of procedure showed a small infarct at lower pole of spleen- which is in fact an expected finding after successful coil embolization (Fig. 6). The patient was discharged on day3 post op. with proper explanations, advises and removal of drainage catheter.

Follow up DSA was done at 6 wks interval which showed complete occlusion of the pseudoaneurysm

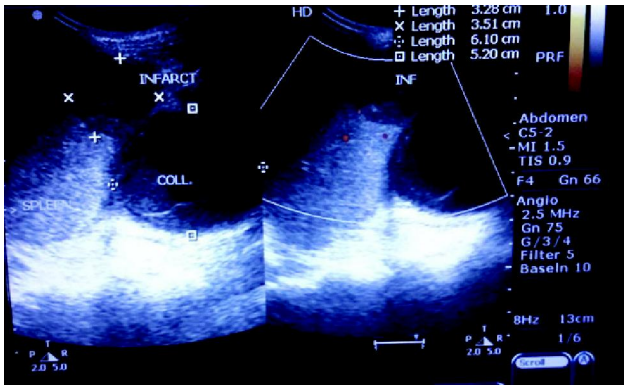

Figure 6: 2 days after coil embolization, an abdominal sonography reveals mild residual collection and a relatively hypo vascular hypoechoic area in the lower pole of spleen (infarct)

(Fig. 7). Subsequent USG revealed more than 80% regression in the intraperitoneal collection. He is leading a comfortable life and gets his regular check-up at the gastroenterology OPD for his original problem of chronic pancreatitis.

Figure 7: Follow up DSA after 6 wks shows complete occlusion of the pseudoaneurysm

Discussion

The most common cause of development of splenic artery pseudoaneurysms is chronic pancreatitis. Pancreatic enzymes cause necrotisingvasculitis leading to damage in the vascular walls and consequent pseudoaneurysm formation.[1] Splenic artery pseudoaneurysms are almost always symptomatic. Haemorrhage due to rupture of pseudoaneurysm may occur into peritoneum or retroperitoneal space which can present with acute abdomen and may mimic acute pancreatitis. The haemorrhage may also occur in adjacent viscera such as stomach or transverse colon which can present with haematemesis or malaena.

Literature describes the risk of rupture in splenic artery aneurysms to be as high as 37%. Mortality in untreated cases can be up to 90%.[2] Mortality rates can be reduced significantly if prompt diagnosis of such a complication is made, as in our case and CECT can help tremendously in doing so. It's high time that instead of NECT, wherever feasible, all cases with symptoms of acute on chronic pancreatitis should be advised to undergo CECT, so that such complications can be picked up at an early stage and more lives can be saved.

The results of endovascular treatment in bleeding splenic artery aneurysms have been encouraging with minimum intra and post op complications. In the recent times it is being considered as the first line treatment for splenic artery pseudoaneurysm. But in cases of large aneurysms(>5 cm), endovascular intervention alone may not suffice.[3] In cases with recurrent bleeding after endovascular embolization or unsuccessful intervention, immediate aggressive surgery with distal pancreatectomy and splenectomy is indicated.[4]

In our case where aneurysm was small and the general condition of the patient was deteriorating, classical surgical approach wasn't feasible keeping in mind higher rate of complications (9%) and perioperative mortality of 1.3%.[5] As far as endovascular methods are concerned, vessel that supplies the aneurysm may be occluded with cyanoacrylate glue, stent graft exclusion or stainless steel coils (as described in our patient). The advantages of endovascular treatment are reduced periprocedural mortality and significantly less postoperative complications.[6] Some cases in literature have shown less severe complications like large splenic infarction or post embolization syndrome.[7]

Conclusion

Spontaneous rupture of splenic artery pseudoaneurysm in patients with chronic calcific pancreatitis can

result in diagnostic dilemma considering the similarities with acute pancreatitis as far as clinical features are concerned. A reduced haemoglobin level should divert the clinician's mind towards possibility of ruptured pseudoaneurysm and subsequent CECT should be advised. CECT with CTA can prove to be much more useful than NECT in such cases.

Endovascular procedures are effective management options in small pseudoaneurysms and much safer than open surgery. Coil embolization, as in our case, can prove to be life-saving for such patients.

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