

Spontaneous Splenic Rupture: A Rare Complication of Acute Pancreatitis

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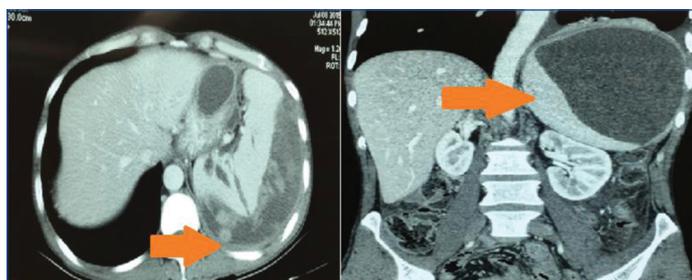
ABSTRACT

The spleen and its vasculature due to the close proximity with the pancreas are prone to complications during any inflammatory process affecting the pancreas. Spontaneous subcapsular splenic haematoma with rupture is one of the rarest complications of pancreatitis. In this case report one such rare complication of splenic rupture as a sequel of acute pancreatitis was reported. A 45-year-old male with a history of gallstone induced severe acute pancreatitis had presented to the emergency with abdominal pain and swelling after one month of initial attack. On evaluation, there was an ill-defined tender lump was palpable in the left hypochondrium with a drop in haemoglobin level from 10.2 gm/dL to 6 gm/dL when compared to the previous admission one month back. Imaging was suggestive of grade four splenic injury with rupture. The patient underwent splenectomy along with cholecystectomy. Spontaneous splenic rupture is one of the rarest complications of acute pancreatitis and one must consider other vascular complications as differential diagnosis.

Keywords: Emergency splenectomy, Necrotising pancreatitis, Splenic haematoma, Vascular complications of pancreatitis

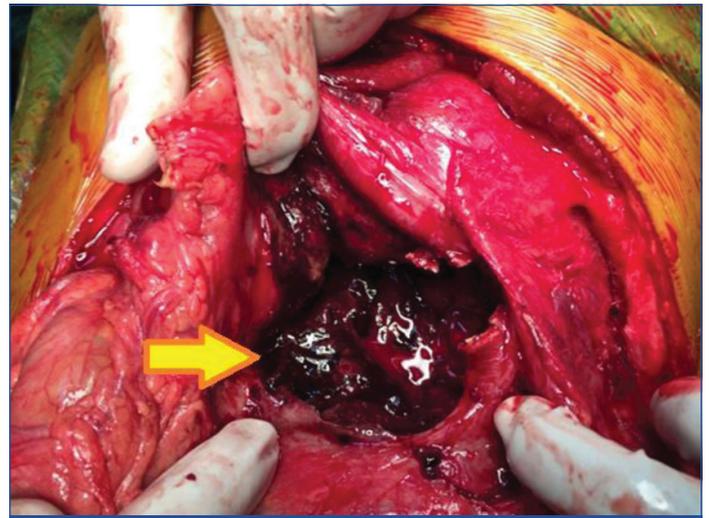
CASE REPORT

A 45-year-old male was diagnosed with gallstone induced severe acute pancreatitis, with a Computed Tomography Severity Index (CTSI) of 8/10, and was managed conservatively and discharged. After one month of the initial episode, patient presented to the surgical emergency, with complaints of pain and swelling in the left upper abdomen for one day. On examination, patient was pale with tachycardia. An ill-defined tender lump was palpable in the left hypochondrium. There was a drop of haemoglobin from a previous value of 10.2 gm/dL to 6 mg/dL. Contrast Enhanced Computed Tomography (CECT) showed a large 13.5×5.5×11.8 cm subcapsular splenic haematoma with extension into the splenic parenchyma and perisplenic collection suggestive of ruptured spleen grade four [Table/Fig-1a,b]. There was also a walled of necrosis of size 3.6×2.6 cm in the tail of the pancreas. There was no contrast extravasation or splenic artery aneurysm on Computerised Tomography (CT) angiography. Patient was planned for an emergency laparotomy.



[Table/Fig-1a-b]: CT images of abdomen showing subcapsular haematoma.
1a: Cross-sectional view; 1b: Coronal view

On laparotomy, there were multiple haematomas and loculated fluid collections in the perisplenic area. The spleen was enlarged with a huge subcapsular haematoma of size 15×10×5 cm [Table/Fig-2]. Splenectomy was performed along with cholecystectomy. Drains were placed in the lesser sac as per the closed drainage system of Beger and multiple lavages were performed in the postoperative period. Patient recovered well and was immunized with the necessary vaccines. At one year of follow-up the patient is fine with no new complaints and was counseled for regular follow-up and about the booster doses of the vaccines.



[Table/Fig-2]: Intraoperative image showing perisplenic haematoma.

DISCUSSION

Acute pancreatitis is associated with a multitude of complications. The spleen and its vasculature due to the close proximity with the pancreas are prone to complications during any inflammatory process affecting especially the tail the pancreas. The peritoneum covering the pancreas continues over the spleen to enclose the splenic hilar structures [1]. The inflammatory process arising in the pancreas may extend along this peritoneal plane to affect the spleen. The inflammatory process may result in perisplenic collections, intrasplenic collections and pseudocysts, infarcts, haematomas and the most dangerous complication of splenic rupture.

Spontaneous subcapsular splenic haematoma with rupture is one of the rarest complications of acute pancreatitis [2]. It is more frequent in chronic persistent pancreatitis than acute pancreatitis [3]. It has been hypothesised that the pancreatic enzymes trickle along the fascial planes into the perisplenic region and cause necrosis of the parenchyma and vessels. Enlargement of the intrasplenic pseudocysts has also been hypothesised as a cause for spontaneous splenic haematoma and rupture in pancreatitis [4]. The usual presentation is pain and swelling in the left hypochondrium with tenderness and guarding as reported in the previous case reports [3,5]. In the case report by Hernani BL et al., the patient

presented with acute pain in abdomen and the diagnosis of acute pancreatitis and splenic rupture was made on CECT at the initial presentation [3]. In the case reports by Mujtaba G et al., Sharada S et al., Debnath J et al., Cengiz F et al., Tseng CW et al., patient presented with acute pancreatitis had splenic rupture at the initial presentation [5-9]. The presentation of the present case was very similar to the case report by Kuramitsu T et al., where the patient presented with splenic rupture after one month of initial episode of pancreatitis [10]. Splenic rupture can also occur in a case of chronic pancreatitis as in the case report by Hasegawa N et al., where a patient of chronic alcoholic pancreatitis with pseudocyst presented with acute left hypochondrial pain which was due to splenic rupture [11]. Any patient with a known history of pancreatitis presenting with pain abdomen and a drop in haemoglobin level should be suspected to have a splenic complication. Splenic artery aneurysm with rupture is one of the close differential diagnosis of ruptured spleen secondary to acute pancreatitis. Erosion of the wall of a blood vessel lining the pseudocyst may also lead to a similar presentation. The elastase enzyme of the pancreatic secretions is involved in this pathological process.

Imaging studies are the mainstay for the diagnosis of splenic complications of pancreatitis. Even though ultrasound may point towards complications, CECT is often required to accurately diagnose them [9]. Especially, patients with pancreatitis involving the tail and body should be closely observed for these complications. CT angiography may be necessary to diagnose splenic artery aneurysm even though it is not compulsory.

The management of splenic complications depends on the general condition and haemodynamic stability of the patient. Splenectomy or splenodistalpancreatectomy should be performed in cases of ruptured spleen or haemodynamically unstable patients either through a subcostal or midline incision. It may be accompanied by necrosectomy in case of necrotising pancreatitis if the patient is stable. In patients without rupture and who are haemodynamically stable, minimally invasive procedures such as ultrasound guided aspiration may be attempted thereby avoiding splenectomy [12, 13].

CONCLUSION(S)

Although splenic complications in pancreatitis are less common, high index of suspicion based on patient's symptoms will help

to diagnose these dangerous complications early. Appropriate interventions need to be performed in a timely manner to decrease mortality and morbidity.

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