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Radiology

Spontaneous Splenic Rupture during Acute Pancreatitis

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Abstract **Case Report**

Non-traumatic splenic rupture is a rare event that can occur in acute pancreatitis. Its exact etiology remains undefined. It constitutes a diagnostic problem because of the low specificity of the clinical characteristics. Imaging plays an important role in diagnosis and follow-up. Treatment should be carried out promptly, taking into account the hemodynamic status of the patient in order to avoid death. We report a case of spontaneous splenic rupture in an elderly patient with Balthazar's stage E acute pancreatitis to educate clinicians and radiologists about this underestimated emergency.

Keywords: Spontaneous rupture, Missed, Acute pancreatitis.

INTRODUCTION

Spontaneous rupture of the spleen is a rare complication of acute pancreatitis. It results from a set of elements that goes into its genesis. It can occur in healthy or pathological rats. The morbidity attributable to it varies from 39% to 79%, and the mortality rate is approximately 3.5% to 0.8%, generally due to delays in diagnosis and therapeutic management [1, 2]. The treatment consists of an emergency splenectomy. We report a case of spontaneous splenic rupture complicating acute pancreatitis with the aim of raising awareness among clinicians and radiologists of this little- known emergency.

OBSERVATION

A 60-year-old patient presented to our emergency department with epigastric pain with dorsal irradiation and aggravated by food, food vomiting, without jaundice or other associated signs in a context of apyrexia and conservation of 'condition. The whole evolution lasted 7 days. On clinical examination, the abdomen was slightly distended with tenderness in the right flank and without other particularities. Lab tests showed: CRP=281, WBC=24600, Hemoglobin=12.5 and Lipase=1241. CT scan revealed Balthazar stage E pancreatitis and CTSI=10 with necrosis affecting more than 50% pancreatic parenchyma seat of air bubbles, infiltration of peripancreatic and mesenteric fat, associated with scattered necrosis in the peritoneal cavity (Figure 1). It showed fractures of the spleen with a subcapsular hematoma, bubbles of pneumoperitoneum above and below mesenteric (Figure 2); Also colic and hail fluid levels as well as parietal thickening of some jejunal loops of reaction appearance (Figure 3). The patient died on the 7th day of hospitalization.

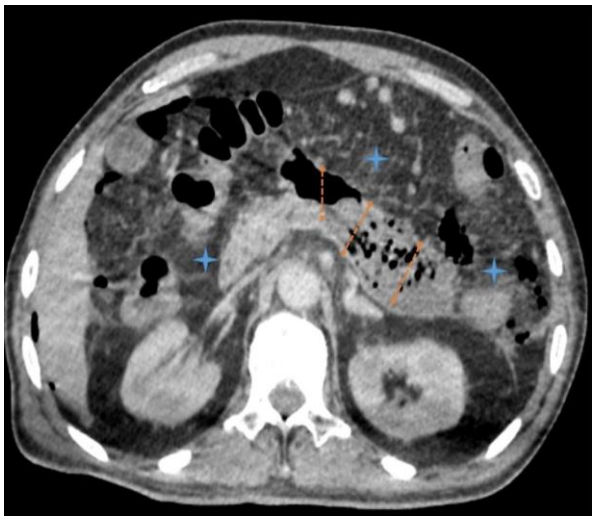

Figure 1: Abdominal CT scan (portal phase): Increase in size of the pancreatic corporeal-caudal region with necrosis > 50% of the parenchyma seat of the air bubble (double-headed arrow) and infiltration of the neighboring fat (stars blue)

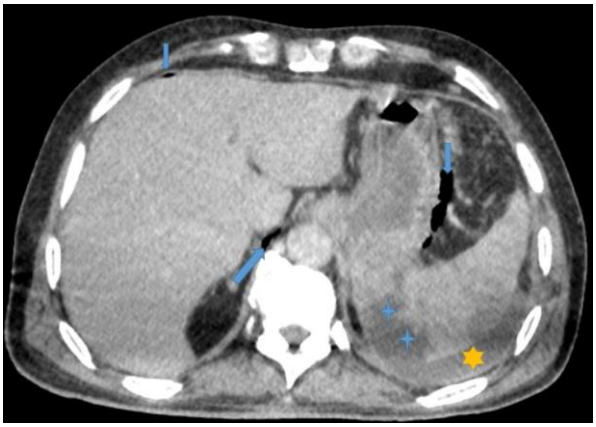

Figure 2: Abdominal CT scan (portal phase): Multiple splenic fractures (blue stars) associated with subcapsular collection (yellow star). Presence of peri-gastric and peri-hepatic pneumoperitoneum bubbles (blue arrow)

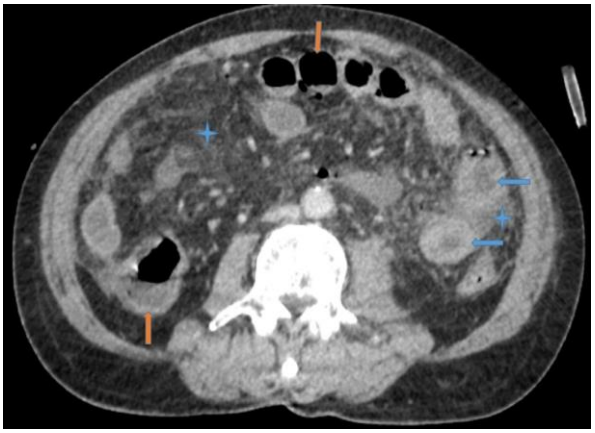

Figure 3: Abdominal CT-scan (portal phase): Presence of some hail and colic fluid levels (orange arrow) with regular circumferential parietal thickening of jejunal loops (blue arrow) and infiltration of mesenteric fat (blue star)

DISCUSSION

Splenic complications during acute and chronic pancreatitis are considered rare events. They include pseudocyst, subcapsular hematoma, splenic infarction, intrasplenic hemorrhage and splenic rupture [3]. However, intrasplenic hemorrhage and splenic infarction are more frequent in acute pancreatitis, while subcapsular hematoma, pseudocyst and splenic rupture are more frequent in chronic pancreatitis [4, 5].

Non-traumatic splenic rupture during acute pancreatitis is rare, with an estimated incidence of 2.2%, and affects twice as many men as women, with an average age of 42 years [1, 6].

The exact etiology of the rupture is unknown, although in general the proximity of the spleen to the tail of the pancreas partly explains the pathophysiology of splenic complications [1].

Three mechanisms are involved in this process: The increase in intrasplenic tension associated with cell proliferation and congestion; Compression of the abdominal muscles when sneezing, coughing or defecating; and infarction resulting from vascular occlusion due to hyperplasia of the endothelial reticulum associated or not with a subcapsule hematoma [6].

The diagnosis of splenic complications is difficult due to the absence of specific symptoms and signs. Splenic rupture is often revealed by a surgical emergency chart. The presence of epigastric and left hypochondrium pain radiating to the ipsilateral shoulder is of great diagnostic value. Anemia and shock were frequently encountered in 60% and 80% of patients on admission, respectively. The diagnosis can also be made fortuitously on computed tomography in patients with a non-specific clinical appearance [6].

Imaging plays a key role in diagnosis. Abdominal ultrasound makes the diagnosis on the association of haemoperitoneum, hematoma of the splenic region including the spleen and calcified pancreas [6].

Computed tomography is valuable in the diagnosis and follow-up of patients. It is performed in the absence of hemorrhagic shock to confirm the diagnosis, assess acute pancreatitis and rule out other causes (splenic venous thrombosis, segmental portal hypertension) [6].

Treatment depends on the hemodynamic status of the patient. In stable patients, a conservative approach with strict monitoring, percutaneous drainage, embolization, or even surgery can be considered [3]. However, for unstable patients, the literature recommends resorting to splenectomy [2, 3, 6].

CONCLUSION

Splenic rupture is a rare complication of acute pancreatitis. It involves the vital prognosis of the patient and therefore constitutes an important emergency, hence the need for knowledge of it by clinicians and radiologists. Treatment is based on emergency splenectomy.

Conflicts of Interest: None.

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