

Splenic Abscess Arising from Acute Cholecystitis

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ABSTRACT

Splenic abscess is an uncommon surgical condition and is life-threatening if un-diagnosed earlier during the course of illness. Splenic abscess has been reported in association with hepatic abscess. This report describes a case of splenic abscess associated with cholecystitis. Since, the symptoms are generally non-specific, a high index of suspicion is necessary to diagnose splenic abscess in patients having acute or chronic cholecystitis. When such patients have fever and left upper quadrant pain, splenic abscess should be considered.

Key words: Splenic abscess. Cholecystitis. Splenectomy.

INTRODUCTION

Abscess of the spleen is generally considered to be a rare clinical occurrence with less than 800 cases reported worldwide. There remains great clinical interest in the etiological nature, clinical presentation and the available treatment options for this uncommon surgical problem. A previous review of the possible sources of infection for the formation of splenic abscess did not recognize structures other than liver within the hepatopancreatic biliary tree as the source of splenic infection.¹

We describe a very rare occurrence of splenic abscess arising from gallbladder as the primary source of infection. To our knowledge, there has been no reported case of splenic abscess with gallbladder as the primary source of infection.

CASE REPORT

A 74 years old female patient was hospitalized with signs and symptoms of acute cholecystitis, diagnosed clinically and confirmed by a CT scan which showed thickening of the gallbladder wall and no calculi (Figure 1). She had no history of recent travel, diabetes mellitus, immunodeficiency states or previous infectious diseases and was not on any medications.

Since, the patient refused surgery, she was treated conservatively with antibiotics and analgesics. She responded well and went home after 3 days. She was advised an elective cholecystectomy at a later date.

Two months later, she presented with fever, tachycardia and upper abdominal pain. On examination, she was anicteric, pale, and had a mild right upper quadrant abdominal tenderness. She had no palpable mass in

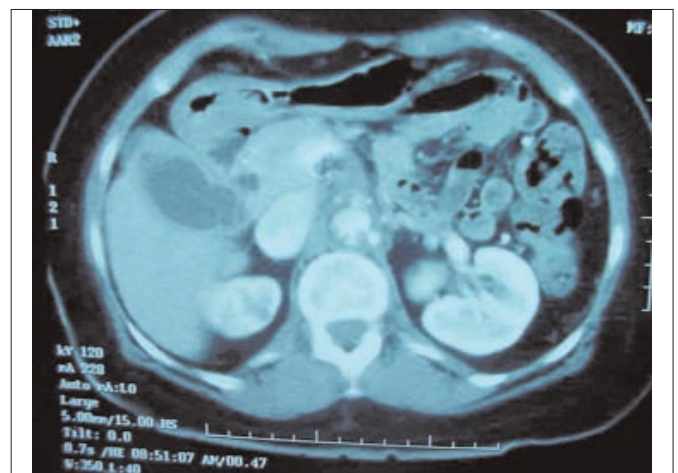


Figure 1: CT abdomen showing thickened wall of the gallbladder, no calculi and a normal spleen.

the abdomen. Her white cell count was 16,000/ μ L. She was re-admitted to hospital with a tentative diagnosis of recurrent cholecystitis. Imaging studies included a chest radiograph and a CT scan. CT findings included a thick-walled gallbladder with no obvious calculi, pericholecystic fluid and an abscess of the spleen (Figure 2).

At this juncture, she consented to have surgery. She underwent a routine urgent open cholecystectomy and splenectomy through an upper midline incision. Intra-operatively the spleen was noted to have a moderately large abscess (Figure 3a) and the inflamed gallbladder was filled with calculi (Figure 3b). Microbiological culture grew *Klebsiella pneumoniae* from both the gallbladder and the spleen, but the blood culture was negative for bacterial growth. Patient was discharged home after an un-eventful postoperative period.

Two weeks following cholecystectomy and splenectomy, the patient again presented with fever and loss of appetite without any abdominal pain. An abdominal CT scan showed collection of fluid in the splenic fossa. A pig-tail catheter, which was inserted, drained pus and was left *in situ* for a week. Following this, she had a complete recovery and was asymptomatic in the follow-up clinic at 6 months.

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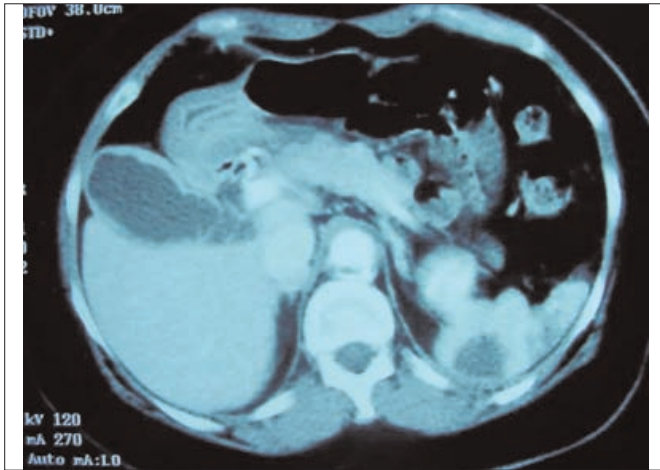


Figure 2: CT abdomen showing thickened wall of the gallbladder, no calculi, pericholecystic fluid and an abscess in the spleen.

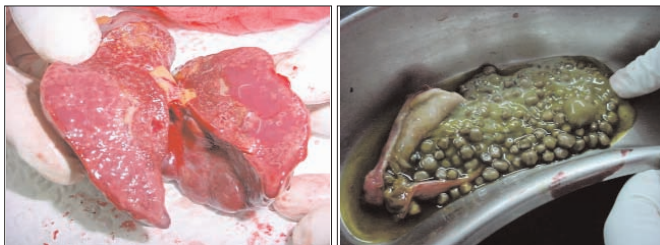


Figure 3 (a): Gross appearance of the abscess at splenectomy.

Figure 3 (b): Gallbladder filled with calculi at cholecystectomy.

DISCUSSION

Splenic abscess remains a relatively rare condition with a reported incidence of 0.14 - 0.7% at autopsy.² The average age of presentation is bimodal having peaks during the third and sixth decades of life with a male predisposition of 60%.^{3,4} This patient was an elderly female.

Symptoms and signs typically include fever, abdominal pain and tenderness over the left upper quadrant or a palpable spleen (40% of patients) along with chest symptoms.⁵ Clinical examination may reveal nothing more than a vague tenderness in the abdomen, more pronounced in the left upper quadrant. Laboratory findings may include a leucocytosis and increased C-reactive protein, normal liver function and renal function tests with blood cultures being positive in only 24 - 50% of cases.^{6,7} Establishing the diagnosis may not be straightforward since only two-thirds of patients present with the classic triad of fever, palpable spleen and left upper quadrant pain.² This patient presented with symptoms and signs of acute cholecystitis initially, but on the second occasion she presented with no specific clinical signs other than fever, tachycardia and generalized upper abdominal pain.

The causes of splenic abscesses may include metastatic and contiguous infection, neoplasia, immunodeficiency and haemoglobin abnormalities, trauma, splenic infarcts, patients undergoing chemotherapy as well as non-

infectious embolisation (leading to ischaemia and secondary infection).^{3,4} Immunodeficiency states are the predisposing factors in almost two-third of patients.^{8,9} There are many other uncommon causes.

Chest and abdominal radiographs often show non-specific changes and can serve as screening tools since they have high sensitivity, but low specificity.¹ The abnormal findings may include left lower lobe lung infiltrates, left pleural effusion or an elevated left hemidiaphragm. Abdominal ultrasound scan is very useful and has the additional advantage of guiding percutaneous needle aspirations and catheter placement for continuous drainage. Abdominal CT scan has been shown to supersede all other modes of imaging for splenic abscess.⁸ However, as shown on both occasions in this case, it may fail to show gallstones (although it did reveal thickening of the gall-bladder wall and pericholecystic fluid). Ultrasound could be used to confirm the presence of gallstones in such patients, but it was not necessary in this case as the need for surgery-splenectomy and cholecystectomy were clear on CT scan.

Splenic abscesses are uncommon in the general population and are generally fatal if left untreated.^{1,4} The current treatment options include percutaneous aspiration, percutaneous continuous catheter drainage, open drainage with splenectomy and open drainage with splenic conservation. Currently, splenic conservation is being widely advocated as against splenectomy.⁹

Percutaneous image-guided drainage has advantages over open surgery. These include minimally invasive procedure, useful in a high-risk patient avoiding general anaesthesia with shorter operating times, lower morbidity and earlier rehabilitation.⁹

Splenic abscesses can also be treated by subtotal or partial splenectomy in an attempt to preserve splenic function especially in the younger age groups.² When three different modalities of treatment namely (i) antibiotics only, (ii) antibiotics with percutaneous drainage and (iii) splenectomy were compared, splenectomy had the best outcome.¹⁰ Although splenectomy has been shown to be curative in the majority of cases, in our situation, the patient developed a recurrent abscess in the splenic fossa, which required further drainage. This may indicate that even after splenectomy, a regular follow-up is mandatory in these patients and appropriate imaging modalities should be employed to confirm complete resolution of the disease.

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