

CASE REPORT

A rare presentation of a splenic abscess

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Abstract

Although the spleen is frequently enlarged in association with systemic infection, splenic abscesses are rare. They result from direct or hematogenous spread, or when a hematoma becomes infected. We present a case of the rare splenic abscess in a low-resource setting.

KEYWORDS

abscess, space-occupying lesion, spleen

1 | INTRODUCTION

Abscesses of the spleen are relatively uncommon with an incidence of 0.2%.¹ Splenic abscesses have been reported periodically since the time of Hippocrates who postulated that the condition may take one of the following three courses: (i) the patient might die, (ii) the abscess might heal, or (iii) the abscess might become chronic and the patient might live with the disease. He was essentially correct because the etiology varies.¹⁻⁴

2 | CASE HISTORY/EXAMINATION

A 26-year-old African male farmer presented with a 3-month history of a rapidly progressing left hypochondrial mass. This was associated with abdominal pain and intermittent fever. He had no history of trauma, infective endocarditis, or tuberculosis. He was neither human immunodeficiency virus (HIV) positive nor diabetic. A full blood count revealed a low hemoglobin level (Hb 6.1 g/dl), a leucocytosis of $16.5 \times 10^9/L$, and a normal platelet count of $307 \times 10^9/L$. Physical examination demonstrated a tender splenomegaly extending to the umbilicus (Hackett's 4).

There was no associated lymphadenopathy, and cardiovascular examination was normal. The differential diagnosis would include space-occupying lesions or splenic masses due to trauma leading to hematoma or rupture, splenic abscess, tumors, and cysts. An abdominal ultrasound scan suggested a splenic abscess. Following the transfusion of 2 units of whole blood, he underwent a difficult resection of a large necrotic fluid-filled spleen, which was densely adherent to the tail of the pancreas, inferior surface of the liver, and greater curve of the stomach (Figure 1). Macroscopically, the resected spleen was large, multi-loculated with total parenchymal destruction (Figure 2). He made good recovery and was discharged a week later after receiving vaccines against the encapsulated bacterial organisms, *streptococcus pneumonia*, *haemophilus influenza*, and *neisseria meningitides* that may cause an overwhelming post-splenectomy infection (OPSI).

3 | DISCUSSION

As part of the reticuloendothelial system and by receiving 25% of the cardiac output, the spleen plays a major part in the immediate immunological response to blood-borne antigens akin to the phagocytic role of "Kupffer" cells of

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FIGURE 1 Serosal surface of resected splenic abscess (formalin-fixed)



FIGURE 2 Multilocular cavities of a splenic abscess with complete loss of splenic parenchyma (formalin-fixed)

the liver in the portal circulation. Splenic abscesses are commonly caused by septic emboli from complications of infective endocarditis in about 5% of these patients, with

the pathogens being *streptococcus* or *staphylococcus*.¹ It carries a very high mortality of greater than 70% if the diagnosis is missed, but with appropriate treatment the mortality can be reduced to less than 1%. With the availability of CT scan today, the condition is rapidly diagnosed in addition to a potential treatment by aspiration.^{1–3} The second common cause is a secondary infection of an infarcted spleen following trauma, interventional radiological embolization of splenic artery pseudoaneurysm complicating acute pancreatitis, or a hemoglobinopathy such as sickle cell disease.^{1,3,5} Other risk factors include immunocompromised states with 80% mortality, diabetes mellitus, illicit intravenous drug use in which splenic abscesses occur from a contiguous focus of infection. In these cases, the organisms commonly associated are polymicrobial (>50%), aerobes, anaerobes, and fungi (usually candida).^{1–4} *Salmonella typhosa* has been a well-documented cause in the sickling disorders.⁶ Splenic abscesses can also be associated with parasitic infection of the spleen and miscellaneous rare organisms such as *Burkholderia*, *Mycobacterium*, and *Actinomycetes*.³ Spontaneous rupture has been reported in a number of conditions in which the spleen is enlarged, which includes typhoid, malaria, leukemia, Gaucher's disease, and polycythemia. These may be restricted to a subcapsular hematoma or there may be rupture into the peritoneal cavity, which would be suggested by the symptoms of shock, left upper quadrant guarding and tenderness, pain referred to the left shoulder, and clinical and radiological evidence of bleeding.⁷ The common symptoms and signs of splenic abscess include the triad of fever, left upper quadrant tenderness, and leukocytosis as seen in this case.^{1,3,7,8} Just as with splenic cysts the definitive treatment is splenectomy as most of the spleen is affected and non-functional (Figure 2).^{9,10} In addition, pneumococcal, haemophilus influenza type b, and meningococcal conjugate vaccinations against the lifetime risk (0.1–0.5%) but 50% mortality from a subsequent OPSI is required.¹⁰ Percutaneous drainage is less likely to be successful in patients with multilocular abscesses, ill-defined cavities with necrotic debris, and thick viscous fluid. Mortality rates of greater than 50% are reported in patients managed with antibiotics only.^{1,3} Unfortunately, due to our low-resource setting, a microbiological culture and sensitivity of a pus sample and histopathological study of the resected spleen were not available to confirm the diagnosis and render a clue to its etiology.

4 | CONCLUSIONS

The rare splenic abscess is an important differential diagnosis of a space-occupying lesion of the spleen. Early diagnosis and splenectomy are the definitive treatment.

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None.

CONFLICT OF INTEREST

The author declares no competing interests.

AUTHOR CONTRIBUTIONS

EPW was the surgeon and main author. FZ contributed to the preoperative care and literature search.

CONSENT

Written informed consent from the patient was granted to write and publish the paper.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restriction.

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