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Complicated Splenic Abscess Presenting with Cholestatic Jaundice and Fatal Septic Shock in a Diabetic Patient: A Case Report and Review of the Literature

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ABSTRACT:

Background: Splenic abscess is a rare but potentially fatal condition. Its diagnosis is often delayed because of non-specific clinical manifestations, particularly in immunocompromised patients. Diabetes mellitus is a recognized risk factor. **Case presentation:** We report the case of a middle-aged diabetic patient who presented with prolonged abdominal pain, cholestatic jaundice, and systemic inflammatory response. Imaging revealed splenomegaly with a large heterogeneous splenic lesion associated with a peri-splenic collection containing air bubbles, suggestive of a complicated splenic abscess. Emergency splenectomy and drainage were performed; however, the patient rapidly deteriorated and died on postoperative day one due to refractory septic shock. **Conclusion:** This case highlights the diagnostic challenges, rapid progression, and high mortality associated with splenic abscesses in diabetic patients. Early recognition, aggressive resuscitation, and timely intervention are crucial to improving outcomes.

KEYWORDS: Splenic abscess; Diabetes mellitus; Septic shock; Splenectomy; Cholestatic jaundice

INTRODUCTION

Splenic abscesses are rare, with an incidence of 0.05-0.7%, which is attributed to the spleen's innate immunity. Early identification and aggressive treatment are essential to prevent sepsis, morbidity, and mortality, with untreated mortality rates reported as high as 70%[1] Classically, splenic abscess results from hematogenous seeding, preceding trauma, or other mechanisms[3]

We report a fatal case of complicated splenic abscess in a diabetic patient presenting with cholestatic jaundice and septic complications, and we review the relevant literature to emphasize diagnostic and therapeutic considerations.

CASE PRESENTATION

A middle-aged male patient with a 4-year history of type 2 diabetes mellitus treated with oral hypoglycemic agents was admitted for abdominal pain and jaundice.

2.1 HISTORY AND CLINICAL EXAMINATION

The patient reported a 20-day history of progressive abdominal pain localized to the left upper quadrant and epigastrium, associated with jaundice, dark urine, asthenia, and subjective fever. There was no history of vomiting, gastrointestinal bleeding, trauma, or prior abdominal surgery.

On admission, the patient was conscious and hemodynamically stable:

- Blood pressure: 110/80 mmHg
- Heart rate: 88 bpm
- Respiratory rate: 17 cycles/min
- Temperature: 36.4°C

Physical examination revealed marked pallor and icterus. Abdominal examination showed tenderness over the left hypochondrium and left flank without palpable mass. No signs of peritonitis were present. Digital rectal examination was normal. No peripheral lymphadenopathy was detected.

2.2 LABORATORY INVESTIGATIONS

Initial laboratory findings demonstrated severe systemic involvement:

- Hemoglobin: **5.2 g/dL**
- White blood cell count: **91,380/mm³**
- Platelet count: **409,000/mm³**
- C-reactive protein: **108 mg/L**
- Prothrombin time: **32%**
- Sodium: 137 mmol/L
- Potassium: **7.8 mmol/L**
- Urea: 0.78 g/L
- Creatinine: 23.5 mg/L

Liver function tests showed marked abnormalities:

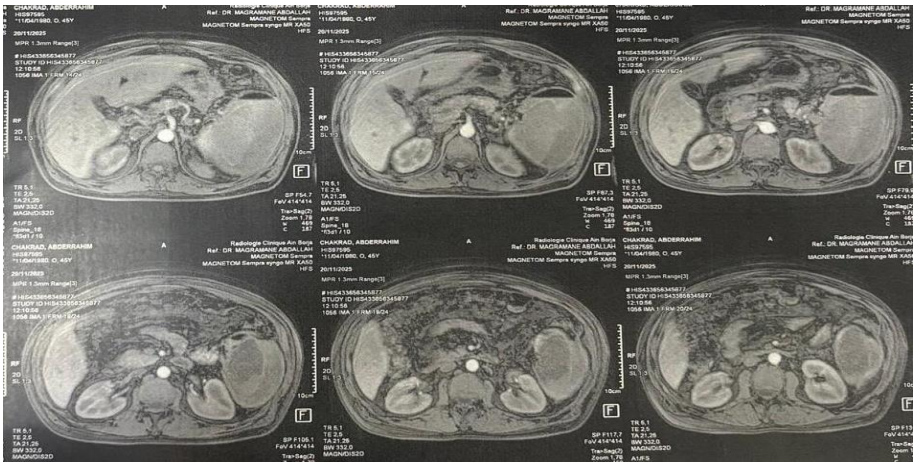
- AST: 633 IU/L
- ALT: 160 IU/L
- Total bilirubin: 85.1 mg/L
- Direct bilirubin: 40.7 mg/L
- Albumin: 30 g/L

These findings were consistent with severe infection, profound anemia, acute kidney injury, coagulopathy, and cholestatic jaundice.

2.3 IMAGING FINDINGS

Magnetic resonance imaging (MRI) of the abdomen revealed:

- Splenomegaly measuring approximately 17–20 cm
- A large heterogeneous lesion in the upper pole of the spleen (≈80 × 73 mm), with mixed T2 signal intensity and restricted diffusion
- A voluminous peri-splenic collection extending up to 210 mm, containing air bubbles and showing rim enhancement after contrast injection
- Marked infiltration of peri-splenic, peri-pancreatic, and left sub-phrenic fat
- Suspicion of splenic vein thrombosis
- No dilation of intra- or extra-hepatic bile ducts
- Associated left-sided pleuropneumonia



These findings strongly suggested a complicated splenic abscess.

2.4 SURGICAL MANAGEMENT

Given the size of the lesion, evidence of infection, and systemic deterioration, emergency surgery was indicated. Exploratory laparotomy revealed:

- Moderate hemoperitoneum
- Dense adhesions involving the spleen, omentum, and adjacent structures
- A peri-splenic abscess containing approximately 1500 mL of purulent fluid
- Enlarged spleen measuring approximately 20 cm

A total splenectomy was performed, along with drainage of the peri-splenic and left sub-phrenic collections, peritoneal lavage, and placement of a suction drain. Liver and abscess wall biopsies were obtained. The liver appeared macroscopically normal.

Figure 1 images schowing rate abcess

2.5 POSTOPERATIVE COURSE

Despite surgical intervention and intensive care management, the patient developed refractory septic shock with multiorgan failure and died on postoperative day one.

DISCUSSION

We defined splenic abscess as a focal area of splenitis due to a proven or probable infectious etiology and contained within the splenic capsule. Perisplenic collections were deemed to be the sequelae of other intra-abdominal processes (eg, peritonitis) and were resultantly excluded[3] SA in adults is often accompanied by combined immunodeficiency diseases, application of immunosuppressants, diabetes, infectious endocarditis, splenic infarction, splenectomy, and other immune dysfunction, malignant or infectious diseases, hematological diseases, and ventricular assist device implantation. SA may also occur after tooth extraction due to septic embolism.[2] Spleen abscess(SA) is a life-threatening rarely seen disease (0.14–0.7%) [1, 2] Also, it is so difficult to detect that it becomes a diagnostic challenge. Meanwhile, it carries a high risk of mortality when untreated [3, 4]. Trauma, infective endocarditis, immunodeficiency states, diabetes mellitus, malignancies, and systemic infections may play a role in the etiology of spleen abscess[8] Although some studies reported underlying factors (e.g., sickle cell disease) and inciting etiologies (e.g., trauma, endocarditis), other studies reported common comorbidities (e.g., diabetes mellitus, acquired immune deficiency syndrome [AIDS]). Each of these factors would likely impact outcomes. However, this was reported inconsistently across the studies challenging any efforts to make definitive conclusions on the effects of etiology and comorbidities on outcomes.[7] The most commonly encountered infections in isolation involve aerobic bacteria, such as Streptococcus, Staphylococcus (since endocarditis is the primary cause of splenic abscess), and Enterococcus[4] Aseptic abscess syndrome, a neutrophil-laden collection associated with inflammatory bowel disease, is a rare entity. An affected person may present with fever, abdominal pain, diarrhea, and weight loss. The syndrome is systemic, involves the spleen in over 70% of cases, and is prone to relapse.[6] Although ultrasound was effective in confirming the diagnosis, CT scanning more accurately quantified the collection, localised it precisely, and provided information regarding splenic vein thrombosis.[1]

In general, management strategies center on antimicrobial therapy and achievement of source control through percutaneous drainage or splenectomy.[3] Intravenous antibiotics, percutaneous catheter drainage(PCD), and surgery are the treatment modalities that can be used in the man agement of splenic abscesses. The recommended treat ment for splenic abscess is splenectomy; but lately, PCD instead of splenectomy is preferred in the treatment of splenic abscess for preserving the immunologic func tion of the spleen[5] Splenectomy, especially using open techniques, is universally available and has been for decades. Some studies included only splenectomy patients, as that was the only treatment option available. In contrast, PD involves newer technology and may only be available in higher resource settings[7]

CONCLUSION

Splenic abscess should be considered in diabetic patients presenting with prolonged abdominal pain and systemic inflammatory signs, even in the absence of classic symptoms. Early imaging, aggressive resuscitation, and timely intervention are critical. Once septic shock and multiorgan failure develop, prognosis remains poor despite optimal management.

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