Case report

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A Puzzle in the Spleen: A Case Report of Isolated Splenic Tuberculosis

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Abstract:

Background: Isolated splenic tuberculosis is a rare form of extrapulmonary tuberculosis, even in endemic regions. Its cystic presentation can mimic other splenic lesions such as hydatid cysts or abscesses, making diagnosis difficult.

Case Presentation: We present the case of a 53-year-old woman with six months of left upper quadrant pain. Clinical exam revealed a mild splenomegaly. Blood tests showed leukocytosis and elevated ESR. Imaging revealed multiple cystic splenic lesions, the largest measuring 70 × 35 mm, with peripheral enhancement. Chest X-ray and infectious workup were inconclusive. Due to diagnostic uncertainty, a laparoscopy followed by splenectomy was performed. Histopathology revealed caseating granulomas, confirming isolated splenic tuberculosis. The patient received anti-tuberculous treatment and remained well after two years of follow-up.

Conclusion:

This case highlights the diagnostic challenge of cystic splenic tuberculosis and underscores the importance of considering it in the differential diagnosis of atypical splenic lesions, especially in endemic settings.

Keywords: Splenic tuberculosis; Cystic spleen; Extrapulmonary TB; Case report

Introduction:

Tuberculosis (TB) remains a significant global health concern, particularly in endemic regions. While pulmonary TB is the most prevalent form, extrapulmonary tuberculosis (EPTB) accounts for a notable proportion of all TB cases. Among EPTB manifestations, splenic TB is rare, representing about 1% of all TB cases and approximately 10% of EPTB cases [1,2]. It remains uncommon and poses considerable diagnostic challenges.

Clinical presentation is typically nonspecific, with symptoms such as fever, left upper quadrant pain, and splenomegaly. These features overlap with various other splenic pathologies, including abscesses, hydatid cysts, and neoplasms [3]. Radiological findings are frequently inconclusive, especially in cystic forms, which may mimic other infectious or

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tumoral conditions. As a result, diagnosis is often delayed and commonly confirmed only after splenectomy and histopathological examination [4].

This case report highlights isolated splenic TB presenting as cystic splenomegaly without lung involvement. It stresses the need to consider TB in cystic splenic lesions, especially in endemic areas, and the role of surgery for definitive diagnosis.

Case Presentation:

Here, we report a case of a 53-year-old female with no significant past medical history presented with a 6-month history of intermittent pain in the left upper quadrant. There was no history of fever, weight loss, night sweats, or contact with tuberculosis. Physical examination revealed a palpable spleen extending below the costal margin, consistent with grade I splenomegaly.

Laboratory findings showed leukocytosis with neutrophilic predominance and an elevated erythrocyte sedimentation rate (70 mm/h), while liver function tests and other routine parameters were within normal limits. Chest radiograph was unremarkable. Abdominal ultrasonography followed by contrast-enhanced CT scan revealed splenomegaly with multiple hypodense cystic lesions, the largest measuring 70 x 35 mm, showing peripheral enhancement (Figure 1).

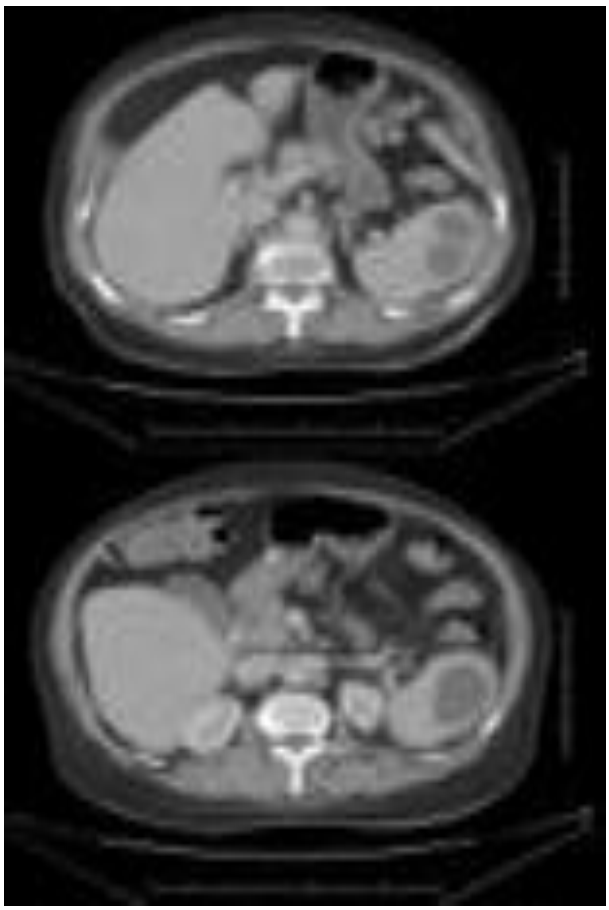

Figure 1. Contrast-enhanced CT scan showing splenomegaly with multiple hypodense cystic lesions.

Differential diagnoses included hydatid cyst, cystic lymphangioma, splenic abscess, neoplasm, and splenic TB. Tuberculin skin test, hydatid serology, and HIV testing were negative or inconclusive.

Given the diagnostic uncertainty and the potential for infectious or neoplastic processes,

the patient underwent diagnostic laparoscopy. Intraoperatively, the spleen appeared nodular but of normal coloration. Two hilar lymph nodes, both infracentimetric, were also observed. A total splenectomy was performed. (Figure 2)

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Histopathological examination of the splenic tissue revealed granulomatous inflammation with caseous necrosis and epithelioid giant cells, consistent with TB infection. The diagnosis of isolated splenic TB was confirmed. The patient was started on a standard four-drug antituberculous regimen (isoniazid, rifampin, ethambutol, and pyrazinamide). Her clinical course was favorable, with complete resolution of symptoms and no recurrence observed at the two-year follow-up.

Figure 2. Resected spleen (operative specimen) following splenectomy.

Discussions:

Splenic TB is a rare form of EPTB, accounting for approximately 1% of all tuberculosis cases and about 10% of extrapulmonary manifestations [1]. It is often encountered in the context of disseminated disease involving the liver, lymph nodes, and bone marrow collectively referred to as hematopoietic involvement [1].

Certain risk factors predispose to splenic TB. Advanced age contributes to vulnerability due to immunosenescence. Chronic conditions such as diabetes mellitus impair immune defenses and increase susceptibility to Mycobacterium tuberculosis. Malnutrition similarly weakens host immunity, and some hematological disorders are also associated with increased risk [3]. Most importantly, HIV infection significantly raises the risk of EPTB, including splenic involvement [5].

The clinical presentation of splenic TB is highly variable and frequently nonspecific. Common symptoms include weight loss, fever, and anemia [6]. The macronodular pseudo-tumoral form of the disease may mimic various neoplastic or vascular lesions such as lymphomas, hemangiomas, and splenic metastases, especially in the absence of known TB foci or suggestive clinical context [7].

Other differential diagnoses include pyogenic abscesses, primary splenic tumors, and hydatid cysts. In the case of splenic abscesses, CT imaging has a reported sensitivity of 90% to 100% [8].

Radiological findings are often inconclusive, especially in cystic forms, which can resemble both infectious and tumoral processes. In many cases, histopathological examination remains essential to establish a definitive diagnosis.

Splenic TB is primarily managed with standard antituberculous treatment, which generally leads to favorable outcomes when appropriately administered. Surgical intervention may be considered for both diagnostic and therapeutic purposes. In situations where non-invasive investigations fail to provide a clear diagnosis, a diagnostic procedure often involving splenectomy may be necessary to confirm the disease. Beyond its

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diagnostic role, splenectomy can also serve as a therapeutic option, especially in isolated or complicated cases, such as splenic abscesses or when there is no response to standard medical treatment [6].

Our case highlights the diagnostic challenge of isolated splenic TB in the absence of typical risk factors or pulmonary involvement. In this patient, histological confirmation following splenectomy was crucial. Her favorable outcome under standard antituberculous therapy further supports the effectiveness of early surgical management when diagnosis is uncertain.

Conclusion:

Splenic TB, though rare, should remain a diagnostic consideration in the evaluation of atypical splenic lesions, particularly in endemic areas. This case underscores the importance of clinical vigilance when facing nonspecific presentations and highlights the critical role of histopathology in reaching a definitive diagnosis.

Conflict of Interest: The authors declare no conflict of interest.

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