Isolated Tubercular Splenic Abscess: A Case Report

Gajanan Ekbote*, Anant Beedkar, Siddharth Lonare, K. Shivasandeep
B. J. Medical College, Pune, Maharashtra, India


© Author(s), 2024, Publisher and License: THB. Open Access. This article is distributed under the terms of the Creative Commons Attribution 4.0 International License, which permits unrestricted use, distribution, and non-commercial reproduction in any medium, provided you give appropriate credit to the original author(s) and the source.

*Corresponding Author: Gajanan Ekbote, B. J. Medical College, Pune, Maharashtra, India.
E-mail: grekbote@gmail.com

Keywords: Tuberculosis; Tubercular Splenic Abscess; Open Splenectomy; TB

Abstract

Tuberculosis is one of the deadliest infectious illnesses in the world. Splenic tuberculosis is typically a component of miliary TB, ranks third after lung and liver, and is more prevalent in people with weakened immune systems. An extremely uncommon variant of abdominal tuberculosis is splenic TB in immune-competent people with no extra splenic involvement. In individuals without pulmonary disease and without symptoms, splenic TB diagnosis is challenging. There are frequently no diagnostic standards for isolated TB. A definitive diagnosis is rarely reached by preoperative testing. When other potential causes of fever and splenomegaly have been ruled out in endemic areas, splenic TB should be suspected. The typical treatment for splenic TB without abscess is medical management (ATT). For splenectomy, a single TB splenic abscess in a healthy patient is recommended. Here we report the case of a 33-year-old patient, who complained of left-sided stomach pain that had been bothering him for four years but was unrelated to radiation or food consumption. It has been linked to several high-grade fever bouts and frequent hospitalizations for the same during the past three years. With standard preoperative pneumococcal immunization, the patient is scheduled for a routine open splenectomy.

Introduction

Tuberculosis remains one of the worlds’ deadliest infectious diseases, taking the lives of 1.6 million people annually. In 2021, nearly 11 million people got ill become of tuberculosis, proving that The Threat of TB anywhere is a Threat Everywhere.
Extra pulmonary TB accounts for 15% of all cases; splenic TB was the first case reported in 1846 by Coley. Splenic TB is usually part of miliary TB, ranks third after lung and liver, and is more common in immune compromised patients. Splenic TB in isolation without extra splenic involvement in immune competent individuals is a very rare form of abdominal tuberculosis [1].

**Case presentation**

A 33-year-old male, a milkman by occupation and resident of a rural area, presented with complaints of left-sided abdominal pain, unrelated to radiation or food intake in the past 4 years. It's associated with multiple episodes of high-grade fever associated with night sweats and multiple hospital admissions for the same in the last 3 years. The patient had generalized weakness and was diagnosed with anemia from chronic diseases. He has also failed to gain weight for 3 years.

No family or contact history of TB, no evidence of cough, cold, hematemesis, significant weight loss, or urinary or bowel symptoms.

On physical examination, the patient is undernourished, well-oriented, and has a good performance status. Abdomen examination: No hepatosplenomegaly; abdomen is not distended; tenderness noted over the left hypochondrium.

USG A+P: Evidence of a 2*0.5*11 cm-sized, ill-defined hyper dense collection noted in the sub capsular region and noted in the upper pole, suggestive of a splenic abscess.

CT A+P: Global distortion of splenic architecture with 11*7.1*12 cm well-defined sub capsular hypodense collection noted in left infra diaphragmatic location, likely splenic liquefaction secondary to global infarct or trauma. Minimal left-sided pleural effusion.

**Figure 1:** Splenic architectural distortion with hypodense subcapsular collection
CT A+P: Shows distortion of splenic architecture (blue arrow) with 11*7.1*12 cm well defined hypo dense collection (yellow arrow). Portal vein doppler: normal, 2D Echo: normal, LABS (on admission): Hb- 8.6, WBC- 8.8, Platelet -122k, DLC: Polymorphs: 58%; Lymphocytes: 35%; Monocytes: 6%; Eosinophils: 0.1% RBCs: predominantly normocytic normochromic RBCs, Bone marrow biopsy: hypercellular marrow without atypical cells.

Iron studies: Iron: 14 ug/dl (reduced), serum UIBC: 197 ug/dl (normal), transferrin saturation: 7% (reduced), Serum TIBC: 211 ug/dl (reduced). CBNAAT sputum: negative; CBNAAT pleural fluid: negative; CBNAAT urine: negative; ELISA HIV-negative; HCV-negative; HBSAG-negative.

The patient is planned for routine open splenectomy with routine preoperative pneumococcal vaccination. Intraoperatively, the spleen looked enlarged, with adhesions noted in the bowel. Intraop blood loss is around 100 cc. GROSS: 13*10*5 cm-sized spleen with necrotic material identified at places, on cut surface: areas of congestion and abscesses noted.

Figure 2: Enlarged spleen with scattered areas of necrosis

Figure 3: Areas of necrosis with acute on chronic inflammatory cells
Gross suggestive of 13*10*5 cm spleen with necrotic material. Microscopy shows areas of necrosis with infiltration of lymphocytes and plasma cells.

Microscopy: Spleen tissue shows large areas of necrosis with infiltration by acute and chronic inflammatory cells, consisting of lymphocytes and plasma cells.
ZN staining: positive for acid fast bacilli.

Post-operatively, the patient did well, ATT started for 6 months, there were no episodes of fever, and the patient got discharged on day 10.

Discussion

The prevalence of tuberculosis in developed countries has significantly declined over the past few decades due to mass vaccination and an advanced health care system. In developing countries, TB remains a major health problem due to overcrowding, malnutrition, and low socioeconomic status [1]. TB bacilli thrive to grow in tissues with high oxygen tension, like the lungs, renal cortex, and growing ends of bones. The liver and spleen are very rarely involved due to low oxygen tension. TB in the spleen is not uncommon, but splenic abscess formation as a result of TB is rare. Splenic TB was first reported by Coley in 1846. Only 8 cases of primary TB splenic abscess have been described in the literature, out of which 7 are diagnosed based on histopathological diagnosis of splenic abscess drainage or splenectomy [2]. Splenic tuberculosis is generally found in patients with severe disseminated disease, and the most common route of spread is hematogenous. In patients with vertebral or psoas abscesses, spread is via contiguity [3-4]. Lymphatic spread is a rare occurrence of visceral involvement in TB. TB splenic abscess is attributed to an overreaction of the host immune response with the formation of caseating necrosis. Splenic tuberculosis is challenging to diagnose due to bacterial sequestration, so high suspicion is necessary in cases presenting with a fever of unknown origin with splenomegaly [5-6].

CT-guided aspiration or FNAC of a splenic abscess, followed by isolation of TB bacilli by Ziehl-Nealsen staining and culture techniques from aspirates from the splenic abscess and characteristic histopathological findings of tubercular granuloma of the spleen, establishes the diagnosis.

Spleen being a highly vascular organ, bleeding is the most feared complication of any intervention, but FNAC is found to be technically safe, and retrospectively, no complications were observed. Management of splenic TB abscess is very crucial, as without treatment, patients can have a complicated clinical course, i.e., splenic abscesses can rarely rupture, leading to fistula communication with adjacent organs [7].

A gastroplenic fistula has been reported in a 61-year-old with abdominal discomfort; surprisingly, the tract has been healed after starting ATT. Treatment is initially started with ATT; in resistant cases, splenectomy is done. According to path-morphological classification, there are 5 types (Miliary, Nodular, Tubercular splenic abscess, Calcific, Mixed type) of findings on the USG of a splenic abscess [8-10].
In this rare possibility of a healthy person with a primary isolated TB splenic abscess being immunocompetent and lacking any comorbidity, CT couldn’t confirm the diagnosis as multiple hypodense splenic lesions are also noted in malignant lymphoma, metastatic cancer, and hemangioma. Histopathological examination was necessary for etiological diagnosis.

The misdiagnosis rate is very high if there is no TB history in the past, Immunocompetent status, or evidence of TB in any other organ.

**Conclusion**

Splenic TB diagnosis is difficult in patients without pulmonary involvement and without specific symptoms. Isolated TB many times lacks diagnostic criteria. Preoperative investigations hardly prompt a definitive diagnosis.

Splenic TB should be suspected in endemic areas when other causes of fever with splenomegaly are ruled out. Splenic tuberculosis without abscess is usually treated by medical management (ATT). Solitary TB splenic abscess in a fit patient is preferred for splenectomy.

**Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his/her consent for his/her images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published, and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

**Conflict of Interest:** Nil

**Financial Disclosure:** None
References