

Isolated Splenomegaly Revealing Tuberculosis in an Immunocompetent Patient: A Case Report

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Abstract

Splenic tuberculosis is an extremely rare form of extra pulmonary tuberculosis, usually occurring in immunocompromised patients or as part of systemic dissemination. We report the case of an 18-year-old immunocompetent male presenting with febrile multinodular splenomegaly. The diagnosis was based on radiological findings, positive tuberculin skin test and QuantiFERON assay, and later confirmed by histopathology showing granulomatous lesions with liquefactive necrosis. After an initial six-month anti-tuberculosis regimen, the patient relapsed with fever, erythema nodosum, and recurrent splenic nodules. A multidisciplinary team re-initiated therapy according to WHO guidelines. This case highlights the diagnostic challenges of isolated splenic tuberculosis in immunocompetent individuals, the importance of histopathological confirmation, and the role of treatment duration and adherence in preventing relapse.

Keywords: Splenic tuberculosis; Extrapulmonary tuberculosis; Immunocompetent patient; Liquefactive necrosis; Case report.

INTRODUCTION

Tuberculosis (TB) remains a global health concern, with an incidence of 13,000 new cases per year in Algeria, about 20% of which are extrapulmonary (1). Splenic TB is extremely rare, typically affecting males aged 19–53 years, and often secondary to systemic disease. The primary form usually occurs in immunocompromised patients. Isolated splenic tuberculosis in an immunocompetent individual is exceptionally uncommon. We report such a case.

CASE PRESENTATION

O.A., an 18-year-old male, was admitted to our department for etiological evaluation of febrile multinodular splenomegaly.

The patient's history dates back to 2022, when he was hospitalized in paediatrics for febrile erythema nodosum. Abdominal CT at that time revealed multinodular splenomegaly with nodules ranging from a few millimetres to 14 mm. Based on a strongly positive tuberculin skin test (17 mm), a positive QuantiFERON assay, and compatible radiological findings, a diagnosis of splenic tuberculosis was made in February 2023, although histological confirmation was lacking.

Anti-tuberculosis therapy (2RHZ/4RH) was initiated. A follow-up CT scan in October 2023, after six months of therapy, showed complete resolution of splenic lesions.

In June 2024, he was re-hospitalized for suspected Crohn's disease with extra-digestive manifestations. Colonoscopy showed two aphthous erosions in the cecum and superficial erosions of the ileocecal valve. Histology, however, was not suggestive of inflammatory bowel disease. The patient also had axial arthralgia, but sacroiliac MRI was normal.

In November 2024, he was admitted again for evaluation of febrile erythema nodosum. On examination, he appeared asthenic and febrile, with temperature peaks up to 39.5 °C. He presented with atypical erythema nodosum lesions located on the soles of the feet and upper limbs. A stage 2 splenomegaly was found, without palpable superficial lymphadenopathy.

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The tuberculin skin test remained positive (15 mm). The rest of the clinical examination, including digestive assessment, was unremarkable.

Laboratory findings showed hypochromic microcytic anaemia (Hb 10.1 g/dL), leucocytosis (16,800/mm³, neutrophil-predominant), elevated CRP (169 mg/L), accelerated ESR (130 mm/h), and polyclonal hypergammaglobulinemia (29.5 g/L). Procalcitonin was negative. Phosphocalcic profile and 24-hour calciuria were normal. Viral serologies (HIV, HBV, HCV) and autoimmune panel (AAN, ANCA) were negative.

Imaging (thoraco-abdomino-pelvic CT) revealed multinodular splenomegaly with necrotic nodules up to 35 mm, associated with necrotic intra- and retroperitoneal lymphadenopathy (up to 16 mm) and features of ileitis. However, ileocolonoscopy showed a macroscopically normal ileum.

A **percutaneous splenic biopsy** demonstrated granulomatous tuberculoid lesions composed of epithelioid and giant cell follicles with central liquefactive necrosis. No features suggestive of lymphoma were identified.

PROBLEMATIC ISSUES :

1. Why does an immunocompetent patient experience relapse of tuberculosis?
2. What is the relationship between liquefactive necrosis and splenic tuberculosis?

DISCUSSION

Isolated splenic tuberculosis is an exceptionally rare condition, particularly in immunocompetent patients. Several factors may contribute to relapse in this setting, including poor treatment adherence, insufficient treatment duration, and possible drug resistance. Histopathological examination remains crucial for diagnosis, as the presence of granulomas with caseous and liquefactive necrosis is highly suggestive of tuberculosis. The main differential diagnosis is lymphoma, which must always be considered in cases of splenic nodules or poor response to therapy. Finally, treatment strategies should be regularly updated and aligned with current **World Health Organization (WHO) recommendations** to optimize patient outcomes and prevent recurrence.

CONCLUSION

Isolated splenic tuberculosis is a rare entity that should be considered in cases of febrile multinodular splenomegaly, especially in endemic regions. Relapse in immunocompetent patients is most often linked to treatment resistance or inadequate duration, highlighting

the need for reliable diagnostic and resistance testing. Vigilance is also required regarding differential diagnoses, particularly lymphoma.

Figures

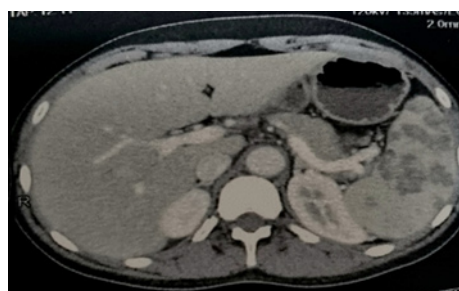


Figure 1. Abdominal CT showed splenic nodules with central necrosis



Figure 2. Erythema nodosum-like lesions

LEARNING POINTS

- Isolated splenic tuberculosis is rare but should be considered in cases of febrile multinodular splenomegaly, even in immunocompetent patients.
- Histopathology remains the cornerstone for diagnosis, with granulomatous lesions and liquefactive necrosis highly suggestive.
- Treatment adherence and adequate duration are essential to prevent relapse.
- Resistance testing is critical in recurrent cases.
- Lymphoma must be ruled out in patients with poor response to anti-TB therapy.

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