CASE REPORT

Isolated splenic tuberculosis
in an immunocompetent patient

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SUMMARY

A 20-year-old woman presented with fever and was eventually diagnosed with splenic tuberculosis as the sole site of the disease. Laboratory data gave no specific information for diagnosis except for a raised erythrocyte sedimentation rate and mild anaemia. Abdominal ultrasonography revealed splenomegaly with multiple hypoechoic lesions within it. A diagnosis of isolated splenic tuberculosis was confirmed after CT-guided aspiration from splenic lesions showed the presence of acid-fast bacilli.

BACKGROUND

Isolated splenic tuberculosis (TB) in an immunocompetent patient is very rare, although secondary involvement is common in miliary TB. Splenic TB usually has no characteristic symptoms. There is high possibility of misdiagnosis as carcinoma, abscess and lymphoma.¹ In this case report, we have shown the presentation and diagnosis of this rare entity.

CASE PRESENTATION

A 20-year-old housewife, living in the countryside, presented with a history of fever, weakness and weight loss for 5 months. Fever was of low grade, intermittent, with occasional chill and rigour, usually rising in the evening and subsiding with or even without medication by next morning, and was associated with generalised weakness without any shortness of breath. She also gave a history of significant weight loss indicated by loosening of clothes during her illness. There was no history of headache, vomiting, cough, chest pain, haemoptysis, diarrhoea, joint pain, burning sensation in the urine, bleeding manifestation, rash, yellowish discoloration in the eye or urine, haematemeses, melaena, trauma, blood transfusion and contact with TB. The rest of the description about her past, personal, family and menstrual history was unremarkable.

The general survey of the patient was unremarkable except for pallor. A detailed systemic examination revealed only a splenomegaly of 6 cm below the left costal margin along the splenic axis, firm, tender, smooth surface, sharp edge without any splenic rub, bruit or any venous hum.

INVESTIGATIONS

Investigations showed—haemoglobin 10.1 g/dL with normal red blood cell indices and reticulocyte counts. Total leucocyte count was $7100/\text{mm}^3$ with normal differential counts and platelet counts.

Erythrocyte sedimentation rate was 75 mm in the first hour. Anisocytes and poikilocytes and target cells were found in the peripheral smear. Fasting blood sugar, urea and creatinine were all within normal limits. Serum total bilirubin 1.6 mg/dL, direct fraction 0.7 mg/dL, serum glutamic oxaloacetic transaminase 26 U/L, serum glutamic-pyruvic transaminase 30 U/L, alkaline phosphatase 369 U/L, total protein 8.5 mg/dL and albumin 4.1 mg/dL. Recombinant K39 (rK39) antigen was negative. Routine and microscopic examination of urine was normal. Serum lactate dehydrogenase was 436 U/L and tests for HIV I and II were also negative. Sputum for acid-fast bacilli (AFB) was negative for two consecutive days. Chest X-ray was normal (figure 1). Ultrasonography (USG) of the whole abdomen revealed a mildly enlarged liver with a 16.4 cm spleen and irregular hypoechoic areas were noted in splenic parenchyma (figure 2). A thick irregular cystic lesion with septations is noted at the splenic hilum, measuring 7.4 cm, which is likely to be a metastasis, lymphoma or infarct. A CT scan of the abdomen (figure 3) showed multiple hypodense lesions in the spleen. CT-guided fine-needle aspiration cytology from the splenic lesion revealed plenty of degenerating neutrophils along with lymphocytes and histiocytes with background necrosis. No granuloma was seen but scanty AFB were detected with Ziehl-Neelsen (Z-N) staining (figure 4). So it was a case of mycobacterial abscess of the spleen.

DIFFERENTIAL DIAGNOSIS

- Pyogenic splenic abscess
- Splenic lymphoma

Figure 1 Normal chest X-ray.

CrossMark

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Figure 2 Ultrasonography of the whole abdomen showing multiple hypoechoic areas located in the splenic parenchyma.

- Splenic infarct
- Splenic TB

TREATMENT

The patient was put on anti-tubercular drugs (ATDs) with a four drug regimen.

OUTCOME AND FOLLOW-UP

After a few weeks, the fever subsided and the patient began to gain weight. The patient is now doing well after completion of the 9 month therapy.

DISCUSSION

Although TB may involve multiple systems, in 90% of cases it primarily affects the lung. Isolated splenic TB, as we present here, is a rare form of extrapulmonary TB. Although Winternitz (1912) categorised splenic TB as a primary and secondary form, some scholars opine that all patients of splenic TB are secondary to the previous infection of tubercle bacilli in other organs.² Spleen is the third most common organ affected in miliary TB,

following the lung and liver, especially in immunocompromised patients.³ However, the primary splenic involvement is very rare. In English, German and French literature, from 1965 to 1992, just six cases of immunocompetent patients were reported.⁴ Adil *et al*⁵ presented a series of 12 immunocompetent individuals with splenic TB, but all of them had one or more extra sites of tubercular involvement along with the spleen. Fever and weight loss were the main presenting features of these patients and the patients were diagnosed during workup for fever of unknown origin. Rarely, splenic TB has been diagnosed incidentally during laparotomy that was carried out for abdominal trauma.²

There often occurs a delay in diagnosis of splenic TB because of their vague clinical presentation and they are suspected often only with the radiological findings. Single or multiple regular hypoechoic lesions, representing granulomas, are the most common findings in USG. On the other hand, irregular hypoechoic lesions typically represent splenic abscess, which is an

Figure 3 CT scan of the abdomen showing hypodense areas located in the splenic parenchyma.

Figure 4 Ziehl-Neelsen staining of the splenic aspirate showing acid-fast bacilli.

important manifestation of splenic TB, especially in HIV disease. Other findings reported in the literature are calcifications and isolated splenomegaly.⁶ In spite of some limitations, a CT scan is also helpful for the diagnosis. A CT scan may reveal multiple splenic hypodense lesions in different conditions like metastatic cancer, fungal abscess, echinococcal cysts, malignant lymphoma, haemangioma, etc.¹ Therefore, histopathological examination which shows typical caseation and granuloma of epithelioid cells and Langhans giant cells is necessary.

Regarding management, some recommend splenectomy followed by ATD therapy,⁷ whereas others have mentioned ATD as

the first line of treatment with consideration of splenectomy depending on the response.⁸

Contributors SKM was the treating physician; JG wrote the manuscript; KS and SC reviewed the literature.

Competing interests None.

Patient consent Obtained.

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Learning points

- Isolated splenic tuberculosis may occur in an immunocompetent host.
- Appropriate imaging and documentation of acid-fast bacilli remains the cornerstone for the diagnosis.
- A regimen with four drugs anti tubercular drugs is the treatment of choice, whereas in some cases splenectomy may be needed.

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