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Atypical Liver Abscess

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Abstract

Background: Primary tubercular liver abscess is a rare presentation of tuberculosis. *Case Report*: We report on a 38-year-old lady who developed a tubercular abscess of liver without pulmonary involvement. Ultrasound and computed tomography of abdomen showed evidence of liver abscess. Subsequent percutaneous aspiration of the abscess demonstrated acid fast bacilli. Treatment with anti-tubercular drugs improved her symptoms and resolved the liver abscess. *Conclusion*: Tuberculosis should be suspected in pyrexia of unknown origin with liver abscess in endemic areas after other infective sources are excluded.

Keywords: Amebic Abscess, Atypical Mycobacterium Infections, Enlarged Liver, Liver Abscess, Tuberculosis.

Introduction

Isolated tubercular abscess of liver is commonly seen in countries with high prevalence of tuberculosis. Literature research doesn't show many case reports. Bristowe first described tubercular liver abscess in 1858 [1]. Non-specific clinical symptoms and radiological appearance similar to amebic and pyogenic liver abscess make it a diagnostic challenge. Microbiological confirmation of *Mycobacterium tuberculosis* with spontaneous resolution of abscess in response to anti-tubercular agents confirms the diagnosis. This was an atypical case of primary tubercular abscess of liver in a non-comorbid immunocompetent patient.

Case Report

A 38-year-old lady, presented to our gastroenterology outpatient department with non-radiating dull aching pain over right hypochondriac region associated with fever, chills and asthenia for 20 days. There was no previous history of tuberculosis or contact with known case. She has no co-morbidities or any surgical history. She was being followed up by her general physician for a diagnosis of amebic liver abscess based on ultrasonographic findings of hypoechoic space occupying lesion of right lobe of liver. She was started on metronidazole and cephalosporin.

On examination, she was conscious with a temperature of 39°C, regular pulse of 86/min, blood pressure 128/76 mm of Hg and respiratory rate at 20/min. No clinical evidence of jaundice or lymphadenopathy was found. Abdominal examination revealed right hypochondriac tenderness, hepatomegaly spanning 16 cm without splenomegaly, ascites or any other palpable mass. Examination of respiratory and cardiovascular systems revealed no abnormalities. Laboratory tests showed elevated alkaline phosphatase with normal bilirubin, leucocytosis and raised C-reactive protein. The patient was serologically non-reactive to viral hepatitis markers and human immunodeficiency virus. Chest skiagram showed no lesion suggestive of tuberculosis. Stool microscopy of ova, cyst, parasites were negative. Despite taking antibiotics, a repeat ultrasonography showed hepatomegaly (18.5 cm), increased size of

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the liver lesion (9.0×7.1 cm) in the segment VI right lobe without vascularity- suggestive of an abscess **[Fig.1]**. There was no evidence of free fluid or focal lesions elsewhere. A contrast enhanced computed tomography of abdomen showed thick-walled hypo-dense lesion (5.4×5.0×5.6 cm) in right sub-capsular region of segment VII suggesting liver abscess **[Fig.2]**.

Differential diagnosis included *Entamoeba histolytica* induced amebic liver abscess, pyogenic liver abscess, granuloma due to tuberculosis, brucellosis, coccidioidomycosis, sarcoidosis, Hodgkin's disease and carcinoma. Ultrasound guided percutaneous aspiration of the abscess yielded 120 ml of copious cream coloured mucopurulent fluid. The pus was then subjected to Gram stain, Ziehl-Neelsen stain and culture sensitivity testing. Acid fast bacilli were seen on Ziehl-Neelsen staining **[Fig.3]**. Routine bacteriological and fungal wet mount microscopy was negative. GeneXpert analysis revealed *Mycobacterium tuberculosis* and rifampicin sensitivity was confirmed.

Patient was started on four anti-tubercular drugs (isoniazid, rifampicin, ethambutol and pyrazinamide) for 6 months. Within first 2 weeks, her fever subsided and pain resolved. Appetite and general conditions improved. At 4 week follow up, she was asymptomatic, abscess size reduced and liver function tests normalised. After 6 months of completing treatment with anti-tubercular drugs repeat scan showed complete resolution of liver abscess **[Fig.4]**.

Discussion

Tuberculosis is still global health problem affecting 95% of developing nations [2]. Developed nations owe their case load to immigration from zones with high tuberculosis prevalence, drug abuse and infection with human immunodeficiency virus besides the other immunocompromised states. Pulmonary and glandular tuberculosis is the

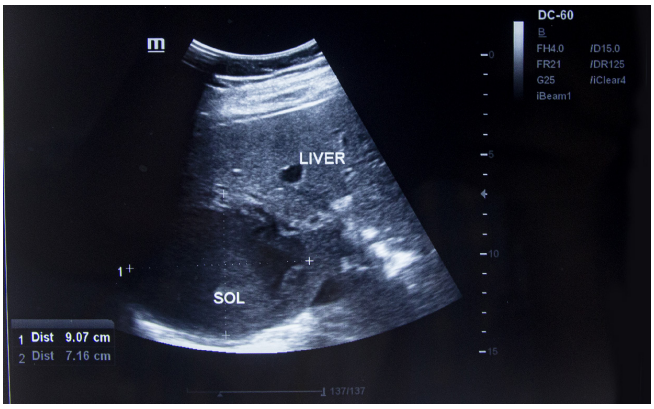

Fig.1: *Hypoechoic lesion in right lobe of liver as shown in ultrasonographic image.*

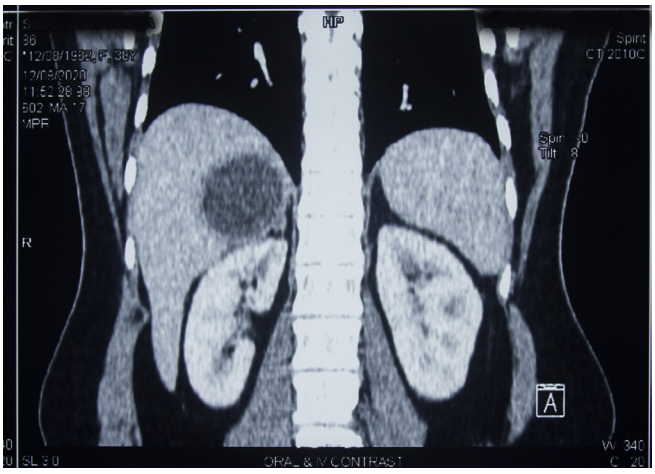

Fig.2: *Contrast enhanced computed tomography showing a hypodense lesion affecting segment VII of liver.*

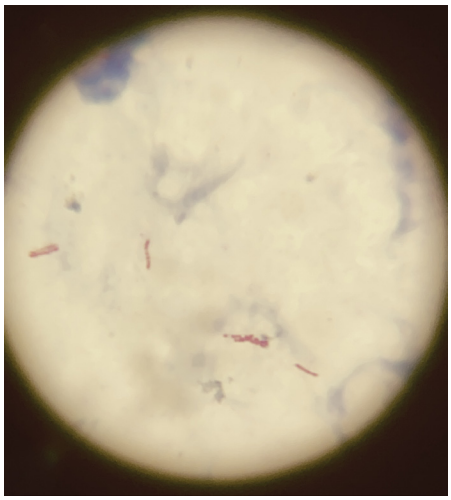

Fig.3: *Acid-fast bacilli demonstrated in Ziehl-Neelsen staining.*

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common presentation of tuberculosis. Involvement of biliary system remains uncommon [3].

Levine classified hepatic tuberculosis as: (i) miliary tuberculosis; (ii) primary pulmonary tuberculosis with lung involvement; (iii) primary hepatic tuberculosis; (iv) tuberculoma and (v) tubercular cholangitis [5]. Clinical features are usually fever, abdominal pain, hepatomegaly with or without jaundice, loss of appetite and asthenia [6]. Though liver function test abnormalities are non-specific, few studies have shown raised serum alkaline phosphatase. Some have also yielded elevated aspartate aminotransferase and alanine aminotransferase in 70% cases [7]. In tubercular liver abscess, liver enzyme abnormalities were associated with jaundiced patients in 91-94% cases and with non-jaundiced patients in 5% cases [8].

Chest skiagram findings are seen in 65-78% cases of hepatic tuberculosis and 25% of cases of chronic hepatic tuberculosis; while almost all chest radiographs in primary hepatic tuberculosis were unremarkable [5]. The hypoechoic lesions and complex masses in liver ultrasound fail to distinguish liver abscess from carcinoma [9]. Sometimes hyperechoic lesions instead of the expected hypoechoic ones may pose a radio-diagnostic dilemma [10]. Acid fast bacilli in Ziehl-Neelsen staining, growth by culture or histological examination of the abscess wall tissue confirms the diagnosis. However, in high tuberculosis prevalence country like India, the absence of acid-fast bacilli doesn't rule out the diagnosis. Polymerase chain reaction has been proven to be diagnostically superior over other conventional test and is less time consuming [11]. As is evident in our report, our patient was initially managed for amebic liver abscess owing to its endemicity. Once suspected or diagnosed, the best management settled for so far is a combination of percutaneous drainage of abscess and systemic use of anti-tubercular drugs [12,13]. Some tubercular liver abscesses have shown to respond to percutaneous drainage with trans-catheter infusion of anti-tubercular drugs

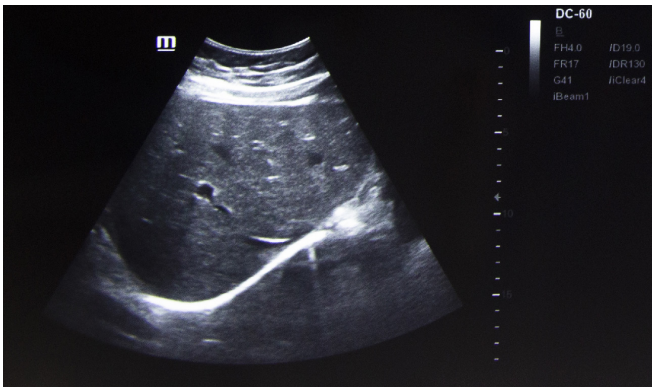

Fig.4: *Ultrasonographic image showing complete resolution of tubercular liver abscess.*

[14]. Standard quadruple regime is offered for 1 year. Our patient however improved to treatment when called for follow up at 4 weeks of initiating the regimen.

Conclusion

Tubercular liver abscess is rare. Thus, needs high degree of clinical suspicion for diagnosis. This case highlights the need of investigating tuberculosis in a case of pyrexia of unknown origin with abscess in endemic areas after other infective sources are excluded. The treatment of tuberculosis yields excellent prognosis.

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