

## An Isolated Tuberculous Liver Abscess in a Non-Immunocompromised Patient

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### ABSTRACT

A liver abscess is an uncommon extra-pulmonary manifestation of a common disease that is tuberculosis. It usually follows primary infection in the lung or the gut. Tuberculous liver abscess in a non-immunocompromised patient in the absence of primary disease elsewhere is an extremely rare occurrence. We report here a case of a tuberculous liver abscess in a 30 years old female who presented a considerable diagnostic challenge.

**Key Words:** *Tuberculosis. Extrapulmonary tuberculosis. Tuberculous liver abscess.*

### INTRODUCTION

Hepatic involvement in tuberculosis is usually noted in conjunction with pulmonary disease or miliary tuberculosis. Isolated hepatic tuberculosis in the absence of any other organ involvement, however, is extremely uncommon. Tuberculous liver abscess (TLA) is rare even among patients with hepatic tuberculosis, with a prevalence of only 0.34% in large series.<sup>1</sup> In extremely uncommon situations, a primary TLA without involvement of other organs has been noted.

We describe this uncommon condition in a young lady.

### CASE REPORT

A 30-year-old female, presented to the general medical unit of our hospital with 3 weeks history of intermittent fever and chills not responding to regular treatment. She also had a history of episodic dry cough and loss of weight but no loss of appetite. The physical examination was unremarkable, except for the non-tender hepatomegaly.

A complete blood count revealed evidence of moderate iron deficiency anaemia (Hb 9.2 g/dl), with normal leucocyte and platelet counts. ESR (100 Hgmm after 1<sup>st</sup> hour) and CRP (82 mg/dl) were elevated. The hepatic aminotransferase levels were marginally elevated but alkaline phosphatase levels were high (470 U/L). Serum proteins estimation showed a reversed albumin - globulin ratio (0.8). A Mantoux test and sputum examination for AFB was negative. The chest X-ray was normal.

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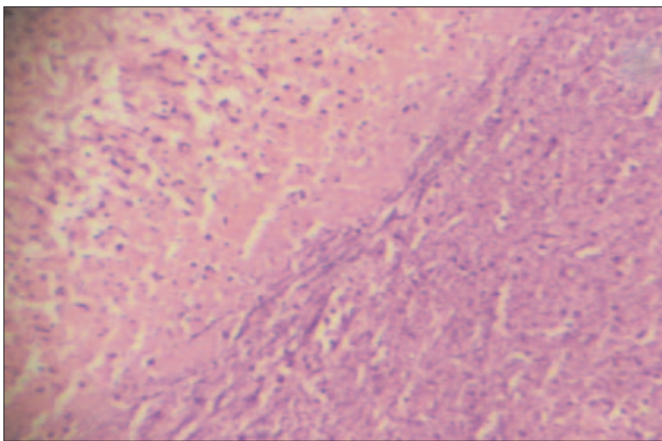
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An ultrasound scan revealed an abnormal echogenicity in segments III and IV of liver measuring 5.6 x 5 x 6 cm showing multiple well defined low echogenic lesions causing mild dilatation of peripheral bile ducts of left lobe of liver. Two lymph nodes were noted, one beneath the first part of the duodenum and the second one at the porta hepatis. The appearance was suspicious of a neoplastic lesion of liver, either hepatoma or cholangiocarcinoma with metastasis or an infective lesion. Alpha fetoprotein level was normal at 1 IU/L and at 3.3 IU/L when repeated. A contrast enhanced CT scan of the abdomen demonstrated a large 10 x 9 cm solid low density area in the left lobe of the liver involving segments 4a/3 and 2 with enhancement (Figure 1). The appearances were suggestive of a liver abscess. An enlarged lymph node was noted in the hilum. USS guided aspiration of the lesion was performed twice, and in both attempts samples showed only few red cells and cultures remained sterile.

An ERCP demonstrated a normal CBD with free bile flow excluding the possibility of cholangiocarcinoma. A diagnostic laparoscopy followed by an exploratory laparotomy was performed at which firm irregular area was identified in the visceral surface of the left lobe of the liver and slough like material drained from the lesion. Tissue from the edge of the lesion and lymph node in hilar area sent for histology which revealed granulomatous inflammation consisting of tuberculoid type granulomata with caseous necrosis (Figure 2). There was no tumour and the biopsied lymph node showed marked reactive hyperplasia. The final diagnosis was that of a tuberculous liver abscess. She was treated with Streptomycin 1 g/day, INH 300 mg/day, Ethambutol 900 mg/day in the first two months. After that INH and Ethambutol same doses were continued. Patient responded to anti-tuberculous treatment and after 7 months of treatment, repeat ultrasound scan showed almost completely resolved liver abscess.



**Figure 1:** CT scan of the abdomen demonstrated a large 10 x 9 cm solid low density area in the left lobe of the liver involving segments 4a/3 and 2.



**Figure 2:** Histology revealed granulomatous inflammation consisting of tuberculoid type granulomata with caseous necrosis.

## DISCUSSION

There are three forms of hepatic involvement noted in TB: firstly, a diffuse hepatic involvement seen along with pulmonary or miliary tuberculosis. Next is a diffuse hepatic infiltration without recognizable pulmonary involvement (granulomatous hepatitis) and a third much rarer form presents as a focal tuberculoma or abscess.<sup>2</sup>

Since the first description of TLA in 1858 by Bestowe, nearly 100 cases have been reported till date<sup>3</sup> and with an age range of 6 months to 72 years.<sup>1</sup> In most cases, TLA was a finding in immunocompromised individuals with AIDS, diabetes mellitus, chronic renal failure and steroid treatment.<sup>4</sup> But in this patient, we failed to identify an immunocompromised state.

The delay in diagnosis is mainly due to the non-specific nature of its clinical picture. Vague abdominal pain, low-grade fever, anorexia, fatigue, night sweats and loss of weight were some of these reported clinical features. In many cases, hepatomegaly was a common presentation. Even the radiological appearance of the TLA can be easily confused with hepatoma or amoebic or pyogenic

liver abscess.<sup>5</sup> Thus, the specificity of USS and CT is low in detecting TLA but in defining the site, size and the nature of the abscess, their value is indispensable.<sup>6</sup>

Biochemical investigations are highly variable in TLA but in many instances a marginal elevation of liver transaminases with a disproportionate rise in ALP, prolonged prothrombin time, hyponatraemia and a reversed albumin globulin ratio were significant findings.<sup>7</sup>

In this case, AST was marginally elevated with a normal ALT level, but the ALP was elevated (510 U/L). Albumin to globulin ratio was also reversed (0.8) but her prothrombin time and serum sodium levels were normal. Apart from that, this patient had significantly high ESR and CRP values.

Caseous necrotic material in TLA may contain Acid Fast Bacilli (AFB), therefore, aspirated material or a biopsy of the abscess wall can be used for direct demonstration of AFB and for culture. However, in this case, the ultrasound guided aspirate was negative for AFB and the diagnosis was only suggested by the biopsy of the abscess wall. ELISA and PCR may also be valuable techniques in detecting *Mycobacterium tuberculosis* in these specimens.<sup>5</sup>

Treatment of TLA is the subject of some controversy. As for general management of any other abscess, the necessity of surgical drainage parallel to antibiotic therapy has been stressed by some authors, challenging the concept of mere antibiotic therapy described in some cases.<sup>8</sup> Some authors have suggested that surgical drainage is needed only in failure of percutaneous aspiration of the abscess.<sup>9</sup> Another successful treatment modality would be transcatheter infusion of antituberculous agents directly into the lesion after percutaneous aspiration of TLA, which according to some reports was effective than systemic anti-TB therapy.<sup>10</sup>

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