Isolated hepatic tuberculosis

A. K. Bangroo, Amit Singh Malhotra*

Department of Pediatric Surgery and *General Surgery, St. Stephens Hospital, Tis Hazari, Delhi, India
Correspondence: Dr. A. K. Bangroo, 103, Administrative block, St. Stephens Hospital, Tis Hazari, Delhi - 110054, India.
E-mail: abangroo@yahoo.com

ABSTRACT

Hepatic tuberculosis is usually associated with an active pulmonary or miliary tuberculosis, but rarely localizes as a liver tumor mass. The clinical presentation of isolated liver tuberculosis is so rare and atypical that it challenges the clinical acumen of the treating physician. Diagnostic modalities like ultrasound and computed tomography can miss the diagnosis. Ultimately, the diagnosis is confirmed by demonstrating an acid fast Mycobacterium in aspirated pus or necrotic material.

KEY WORDS: Focal hepatic tuberculosis, isolated hepatic tuberculosis, tubercular granuloma, tubercular liver abscess

Tubercular liver abscess, when present, is usually associated with the focus of infection in the lung or in the gastrointestinal tract,[12] or is associated with an immunocompromised state. Tuberculosis presenting as an isolated liver tumor, without active pulmonary or miliary tuberculosis, or other clinical evidence of tuberculosis, is distinctly rare.[2] In this report, we describe a rare case of isolated tuberculous liver abscess in a 2-year-old female patient. A greater awareness of this rare clinical entity may prevent needless surgical intervention.

CASE REPORT

A 2-year-old female child, weighing 8 kg, was admitted with upper abdominal pain, persistent low-grade fever and weight loss for 2 months. There was no history of exposure to tuberculosis. On examination, she was diagnosed with fever (100°F) and pallor. There was no icterus or lymphadenopathy. The liver was enlarged (7 cm below the right costal margin), nontender and firm in consistency. The surface was smooth except for a diffuse swelling palpable in epigastrium and the right hypochondrium. No other organomegaly or free fluid was present. Hematological investigations revealed a serum hemoglobin level of 7.2 gm% and total leukocyte count of 23 000/mm³. The erythrocyte sedimentation rate, liver and renal functions, coagulation profile and tumor markers (alpha-fetoprotein and beta-human chorionic gonadotrophin) were normal. The Mantoux test was negative and chest radiograph normal. Ultrasound of the abdomen revealed a large cystic lesion in the left lobe of the liver. No other pathology was detected. Ultrasound-guided aspiration of liver abscess was done and 40 ml of blood-stained thick pus aspirated. Culture sensitivity and Gram staining revealed no growth and no organism seen, respectively. The patient was put on IV Cefotaxim, Metronidazole, and Amikacin. In 5 days, the patient improved symptomatically and was discharged, on oral antibiotics and with an advice to have a follow-up ultrasound of the abscess cavity after 2 weeks. A week later, the patient reported with the recurrence of symptoms, and ultrasound evaluation revealed refilling and increase in size of the abscess cavity, which measured 7.5 × 5.5 cm. Ultrasound-guided aspiration was repeated and 60 ml of thick yellow fluid aspirated and sent for AFB culture, Zeihl-Neelson staining and polymerase chain reaction (PCR) assay. Zeihl-Neelson staining showed acid fast bacilli and AFB culture confirmed tuberculosis. Polymerase chain reaction assay of the aspirate was positive for Mycobacterium tuberculosis DNA sequence. The patient was put on four-drug antitubercular regimen (INH, Ethambutol, Rifampcin, and Pyrazinamide). On follow up after 6 weeks, the patient was asymptomatic, liver size had decreased and ultrasound revealed resolution of the abscess cavity [Figure 2].

DISCUSSION

Hepatic tuberculosis is usually associated with an active pulmonary or miliary tuberculosis, but rarely localizes as a liver tumor mass. Tubercular bacilli reach the liver by way
of hematogenous dissemination: the portal of entry in the case of miliary tuberculosis is through the hepatic artery, whereas, in the case of focal liver tuberculosis it is via portal vein. Irrespective of the mode of entry, the liver responds by granuloma formation. Tuberculous granulomas are most frequently found in the perportal areas (Zone1 of Rappaport) but may occasionally occur in Zone 3.[3] Both cæsaeating and noncaseating granulomas are seen.[3] In focal tuberculosis, various granulomas may coalesce to form a large tumor-like tuberculosis. A tuberculosis that has undergone extensive cæsation and liquefaction necrosis forms a tuberculoma.

Three forms of tuberculous liver involvement are described; diffuse involvement associated with miliary or pulmonary tuberculosis; diffuse parenchymal involvement without any evidence of existing tuberculosis anywhere; focal or nodular lesion in the liver, which may be multiple or solitary and present as tuberculosis or abscess.

Isolated hepatic tuberculosis is the rarest form of local hepatic tuberculosis and has mostly been reported from South Africa and the Phillipines.[4,5] Bestowe was the first to describe tuberculous liver abscess in 1858.[6] Tuberculous liver abscess is usually secondary to primary pulmonary or gastrointestinal involvement. The tubercle bacilli gain access to the portal vein, from a microscopic or small tubercular focus in the bowel. Subsequent healing at the site of entry leaves behind no trace of lesion whatsoever.[4,7,8]

High fever, weight loss, right hypochondriac pain and hepatomegaly are the most frequently observed clinical findings.[9] Jaundice is a very rare manifestation of tuberculous liver abscess and may be caused by extra or intrahepatic obstruction.[9]

The clinical presentation of isolated liver tuberculosis is so rare and atypical that it challenges the clinical acumen of the treating physician.[10] Tuberculous liver abscess is frequently confused with hepatoma, pyogenic liver abscess, and amoebic liver abscess and is to be considered as a differential diagnosis. Establishing the diagnosis is not easy, especially if there is no history of previous exposure to tuberculosis and the Mantoux test is negative. Even a radiologist equipped with diagnostic modalities like ultrasound and computed tomography can miss the diagnosis.

Ultimately, the diagnosis is confirmed by demonstrating an acid fast Mycobacterium in the aspirated pus or necrotic material.[11] Acid fast bacillus is most easily found in caseous necrosis. The absence of AFB should not detract from diagnosis, particularly in endemic areas of tuberculosis.[12] Sometimes a histopathology examination or culture of the scrapings from the abscess wall may be required to be obtained by minilaparotomy to rapidly settle the diagnosis and expedite treatment.[10] Recently, the PCR has been used for the detection of M. tuberculosis DNA.[13] Polymerase chain reaction, a useful diagnostic tool for hepatic tuberculosis, enables the rapid identification of M. tuberculosis. Diaz et al. found that at least 57% of hepatic granulomas caused by tuberculosis gave positive PCR test results.[13] Another advantage is that PCR analysis can distinguish M. tuberculosis from other species of Mycobacterium.[13]

Computed tomography and ultrasound-guided drainage has been found to be good for the successful drainage of tuberculous abscess, although surgical drainage may occasionally be required.[10] Since the prognosis remains excellent with appropriate antitubercular treatment, a high index of suspicion should always be kept while evaluating a space occupying lesion within the liver.

REFERENCES


Subscription form

Kindly enter my subscription to “Journal of Indian Association of Pediatric Surgeons”

Name of the subscriber ........................................................................................................................................

Current institutional attachment ........................................................................................................................

Designation .....................................................................................................................................................

Delivery address ............................................................................................................................................

.................................................................................................................................................................

.................................................................................................................................................................

City .................................. Pin code ..................................

State .................................. Country .................................

Phone no. (with STD/ISD code) ........................................................................................................................

E-mail address ..............................................................................................................................................

**Subscription details**

Subscription period One year / 5 years / 15 years

Subscription type India / SAARC / Foreign

Subscription starts from January ............. (year)

**Payment details**

Cheque No. .................. Dated ......................

Drawn on .................. Amount ......................

Signature .................. Date: ..............................