

Isolated Tubercular Liver Abscess In Pediatric Age Group

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Citation

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Abstract

We report about two patients, the first 7 years and the second 10 years old presenting in our outpatient clinic with history of pain in right upper abdomen, high fever, anorexia and weight loss. A detailed search failed to identify any other focus of tubercular infection. Laparotomy was carried out in the first patient as the abscess was multiloculated and inaccessible to percutaneous aspiration. Antitubercular therapy was begun in the postoperative period when high fever persisted and polymerase chain reaction came out positive for Mycobacterium Tuberculosis. In the second patient diagnosis was made by enzyme linked immunosorbant assay but surgical drainage was done because percutaneous aspiration failed to drain the multiloculated abscess. Both the patients showed dramatic response with antitubercular therapy and gradually hepatomegaly regressed. Isolated hepatic tubercular liver abscess, though a very rare diagnosis should always be considered when signs and symptoms fail to improve with antiamoebic, antibacterial therapy and conventional surgical management.

INTRODUCTION

Isolated tubercular abscess of liver is very uncommon in pediatric age group. We present 2 patients aged 7 years and 10 years respectively, presenting with isolated tubercular liver abscess. In the first patient the clinical and peroperative diagnosis was pyogenic abscess but the condition kept deteriorating after surgery and broad spectrum anti-bacterial coverage. Polymerase chain reaction (PCR) and enzyme linked immunosorbant assay (ELISA) came out to be positive for Mycobacterium Tuberculosis. Antitubercular therapy (ATT) was started, which showed dramatic response. In the second patient preoperative diagnosis was established by ELISA and ATT was started. Both patients were followed for 1 year and are alive and well.

CASE REPORT

Two patients were admitted in the department of pediatric surgery between Jan 2002 to Mar 2003 with complaint of pain in right upper abdomen, high grade fever, anorexia and weight loss for 3 months and 2 months respectively. Clinical examination revealed tender hepatomegaly and the intercostal spaces overlying liver were tender in both. There was no jaundice, both children were anaemic (hemoglobin 7gm% and 8gm% respectively) and showed lymphocytosis. Erythrocyte sedimentation rate was elevated in 1st hour (Westergren method). The liver function tests were within normal limits and Montoux test was positive in both the patients. Screening for HIV and HBsAg was negative. Chest

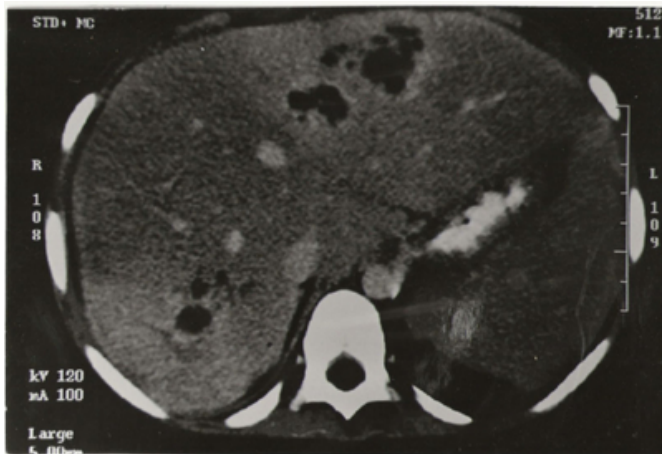
X-ray showed elevation of the right dome of diaphragm in both and basal infiltrates in one patient. There was no evidence of pulmonary tuberculosis on chest X-ray. Ultrasound and CT scan of the abdomen were done in both the patients. In first child (7 years old) the abscess was located in the posterosuperior aspect of right lobe and was multiloculated. The abscess being very close to inferior vena cava was not amenable to percutaneous aspiration. Laparotomy was performed and a large multiseptate abscess having very thick fibrous wall was identified. About 350ml of thick white pus was removed after breaking the loculi. Abdomen was closed after putting a wide bore drain in the abscess cavity. The diagnosis of pyogenic liver abscess was made peroperatively and the patient was put on broad spectrum intravenous antibiotics (cephalosporin, aminoglycoside and metronidazole). This child showed no signs of improvement and from 2nd postoperative day started running high fever. In addition he developed right sided pleural effusion with respiratory distress and required transfer to pediatric ICU. During investigation in ICU, ELISA and PCR were performed and both came out positive for Mycobacterium Tuberculosis. ATT was started and the child showed dramatic response. The child was discharged from hospital on four drug ATT (Rifampicin, Isoniazid, Ethambutol and Pyrazinamide) continued for total of 8 weeks. At four weeks follow up he was asymptomatic and the hepatomegaly had regressed. The child was under follow up for 2 years and was well.

The second patient (10 years old) also presented with the same symptoms and on imaging the abscess was multiseptate and localized in the left lobe very close to the ventral capsule of the liver. With high index of suspicion based on the previous patient ELISA was done, which came out positive for *Mycobacterium Tuberculosis*. Percutaneous aspiration failed to drain the pus and finally laparotomy was performed and 600 ml of pus was removed, which was sent for culture. After surgery the patient was put on four drug antitubercular therapy which was continued for 8 months. Culture (BACTEC-460 media) report was available after 2 weeks and revealed *Mycobacteria*. The child was in follow up for 1 year after completing the course of ATT and is healthy.

The diagnosis of tubercular liver abscess could only be sought on the basis of exclusion in the first patient. In the second child keeping a high index of suspicion based on previous experience diagnosis was established by ELISA. Culture was successful in growing *Mycobacterium Tuberculosis*. Both the patients showed dramatic response to anti-tubercular chemotherapy and are alive and healthy.

Figure 1

Figure 1: CT- Scan (abdomen) of first patient showing multiloculated tubercular liver abscess.



DISCUSSION

The first description of tubercular liver abscess was given by Bestowe in 1858¹. Very few cases have been described in the pediatric age group. The symptoms and signs of tubercular liver abscess are non-specific; the diagnosis is often made at laparotomy or autopsy². Tubercular liver abscess is usually secondary to pulmonary or gastrointestinal involvement³. In our patients there was no evidence of any pulmonary or gastrointestinal tuberculosis. Jaundice is seldom encountered⁴. Ultrasonography and CT scan are very helpful

in delineating the site and multiseptate nature of the abscess^{5,6}. Confirmation of the diagnosis depends on demonstration of acid-fast bacilli in the aspirated pus, pus culture showing *Mycobacterium Tuberculosis*, positive ELISA and PCR for *Mycobacterium Tuberculosis* and histological examination of the abscess wall. The large size and thick fibrous wall of the abscess may prevent the antibiotic from reaching the target⁷. Anti tubercular therapy alone or percutaneous aspiration along with antitubercular therapy are the preferred therapeutic options². Surgery is reserved for the cases in which percutaneous aspiration is not successful or not possible because of site and multiseptate nature of the abscess. In our first patient decision to operate was taken after CT scan because of the abscess being multiseptate and very close to inferior vena cava, and not accessible to percutaneous aspiration. In the second patient the diagnosis of tubercular liver abscess was made on the basis of ELISA and laprotomy was done when percutaneous aspiration failed to drain the pus. The diagnosis of tubercular liver abscess in our first patient was discovered when ELISA and were performed in ICU. In this child the Montoux test was positive however there was no indication of pulmonary or gastrointestinal tuberculosis on investigation. Due to the rarity of hepatic tuberculosis this was not our preoperative or peroperative diagnosis. In the second patient however we performed ELISA preoperatively and started anti tubercular therapy immediately after surgery and the child had an uneventful post operative course. Both the patients were followed for 1 year and are alive and healthy.

Isolated hepatic tubercular liver abscess, though very rare in pediatric age group should always considered in the differential diagnosis of multiloculated liver abscess. Positive Montoux, ELISA test, rapid AFB culture on Bactec medium and PCR will confirm the diagnosis. Anti tubercular treatment should be started on the basis of positive ELISA test and can be continued once the pus culture is positive. The prognosis with antitubercular treatment is good.

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