Primary Isolated Hepatic Tuberculosis

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ABSTRACT

Isolated hepatic tuberculosis without pulmonary or bowel involvement is a diagnostic challenge and can cause considerable morbidity. A young lady from Lahore presented with fever, pain in right hypochondria, nausea and weight loss. CT scan of abdomen showed multiple small hypodense non-enhancing lesions and a heterogeneous texture of liver. Biopsy confirmed the diagnosis of hepatic tuberculosis. It was concluded a case of isolated hepatic tuberculosis without evidence of other primary sites involvement. It is important to consider tuberculosis in the differential diagnosis when suspecting lymphoproliferative or metastatic diseases in a patient with vague symptoms and abnormal hepatic texture on CT.

Key words: Hepatic tuberculosis. Caseating granuloma. Mycobacterium tuberculosis.

INTRODUCTION

Tuberculosis (TB) is one of the most common and well-described infectious diseases, with a worldwide distribution and a vast spectrum of clinical manifestations. Involvement of the liver alone by tuberculosis is uncommon.1 TB disease most often affects the lungs, but can occur anywhere in the body. Liver tuberculosis includes miliary tuberculosis, pulmonary tuberculosis with liver involvement, primary liver tuberculosis, tuberculoma (abscess), and tuberculous cholangitis.2

In this report, we describe a case of isolated hepatic tuberculosis without lung or gastrointestinal involvement.

CASE REPORT

A 30 years old female patient from Lahore, Punjab (Pakistan) presented in June 2009 with high grade fever (104°F) for 4 months. Physical examination showed pallor, local right hypo-gastric tenderness and hepatomegaly with liver being palpable up to 6.5 cm below the costal margin. There was no lymphadenopathy on examination. There was a history of weight loss of about 13 kg over the period of 4 months with no history of exposure to tuberculosis.

Laboratory data revealed low haemoglobin (Hb) level with microcytic hypochromic red cells. The erythrocyte sedimentation rate (ESR) was elevated. Alkaline phosphatase was raised measuring 296 IU/L. A normal white blood cell count, normal liver parenchyma function and renal function tests, and normal coagulation tests were obtained. Alpha-fetoprotein was normal. Chest X-ray was normal. Liver ultrasound showed heterogeneous texture with multiple ill-defined hypo-echoic areas, averaging 1.0 – 1.5 cm. Few lymph nodes (largest measuring 1.5 cm) were noticed at porta hepatis. Computed tomography (Figure 1) of the abdomen confirmed multiple small hypodense non-enhancing lesions in the liver. Bone marrow biopsy did not reveal any abnormality. A percutaneous fine-cut biopsy of the liver was done. Histopathological (Figure 2) examination with hematoxylin and eosin staining showed multiple small enhancing foci.

Figure 1: CT scan of liver showing abscesses as multiple small enhancing foci.

Figure 2: Photomicrograph (20 x H & E) Hepatic granuloma comprised of epithelioid cells (arrow A) multinucleated Langhan’s giant cells and caseation (arrow B) in the portal and perportal areas with fatty changes in surrounding hepatocytes (thick arrow A).
revealed epithelioid cell granulomas with multinucleated Langhan’s giant cells in the portal and periportal areas. The hepatocytes revealed feathery degeneration. There was no feature of malignancy. A diagnosis of isolated tuberculosis of liver was made and the patient was discharged on standard anti-tubercular medication (ATT) of four drugs. On follow-up after 6 weeks, the patient was asymptomatic and clinically improved.

Patient was treated with antituberculous treatment for one year. After 2 months of the ATT, the patient looked improved. Her clinical symptoms completely disappeared. She was quite healthy in a period of one year during the medical treatment. Patient was re-examined after the completion of therapy. CT scan was normal. Laboratory data revealed normal Hb and normocytic normochromic RBC morphology. The ESR was 10 mmHg after one hour. LFTs had also returned to normal level.

DISCUSSION
Liver involvement in tuberculosis is usually clinically silent. Occasionally, local signs and symptoms may be prominent in hepatic tuberculosis, and may constitute the initial or sole presenting feature of the disease. However, even in developing countries, liver tuberculosis accompanied by local symptoms is an uncommon entity. A study from South Africa showed that liver tuberculosis accounted for only 1.2% of all cases of tuberculosis diagnosed at a general hospital. The nomenclature of hepatic tuberculosis is confusing. Multiple terms like tubercular hepatitis, local tuberculosis, secondary tuberculosis, isolated tuberculosis, and atypical tuberculosis have been used by various authors and the same term may have a different connotation when used by different authors.

Broadly speaking, hepatic tuberculosis presents in three forms. The most common form is the diffuse hepatic involvement, seen along with pulmonary or miliary tuberculosis in 50 – 80% of patients dying of pulmonary tuberculosis. Despite the diffuse involvement of the liver, pathologically, symptoms of liver disease are absent. The second form is diffuse hepatic infiltration with small granulomas (less than 2 mm) without recognizable pulmonary involvement (granulomatous liver disease). The third much rarer form presents as a focal/local tuberculosis or abscess. Local hepatic tuberculosis, defined as tubercles > 2 mm in diameter, usually occurs along with a tuberculous focus elsewhere. Isolated hepatic tuberculosis (synonyms nodular hepatic tuberculosis, macronodular hepatic tuberculosis) is perhaps the rarest form of local hepatic tuberculosis.

Making the correct diagnosis is challenging but of utmost importance, since untreated abdominal tuberculosis carries a 50% mortality rate. Radiological findings of hepatic tuberculosis are not specific although multiple hypodense lesions have been described on CT scan in cases of macronodular tuberculoma of the liver. Histopathologic diagnosis is required to distinguish tuberculosis from lymphoproliferative disorder, metastatic deposits and other granulomatous disease like sarcoidosis and fungal infection. Hepatic granulomas have varied aetiology and show considerable geographic variation. Although the occurrence of sarcoidosis, primary biliary cirrhosis and fungal disease is high in the Western hemisphere, the finding of granulomas histologically, even in the absence of caseation, necrosis/AFB is accepted as evidence of tubercular aetiology in most parts of Asia and Africa unless proven otherwise.

A possible source of infection was identified in this patient at 8 weeks after starting treatment. The patient’s sibling was diagnosed with intestinal tuberculosis with a symptomatic period of more than 8 months. A significant exposure history was then given. It supports the mechanism of tubercle bacilli gaining entrance to the portal vein through a microscopic focus in the bowel. This patient was a very interesting case of hepatic tuberculosis without evidence of other primary sites. She responded well to the ATT.

Tuberculosis should be kept on the differential diagnosis of multiple lesions in liver, especially in endemic areas. Laboratory tests and imaging can be challenging and should be analyzed thoroughly supplementing with other data where necessary.

REFERENCES
