Tuberculous Liver Abscess Not Associated with Lung Involvement

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Abstract

Hepatic tuberculosis is one of the uncommon forms of extrapulmonary tuberculosis. We report a 78-year-old woman who developed tuberculous liver abscesses with splenic abscess not associated with pulmonary foci. Ultrasonography and computed tomography of the abdomen showed the low-density lesions in the liver and spleen. Histopathology of specimens obtained by percutaneous needle biopsy revealed coagulation necrosis and epithelioid cells but not tumor cells, suggesting tuberculosis infection in the liver and spleen. Systemic chemotherapy with anti-tuberculous agents led to the improvement of the lesions in the liver as well as spleen. Although tuberculous liver abscess is a very rare case, it should be included in the differential diagnosis of unknown hepatic mass lesions.


Key words: tuberculous liver abscess

Introduction

Hepatic tuberculosis is one of the uncommon forms of extrapulmonary tuberculosis and it is usually a disseminated disease associated with miliary tuberculosis that is one of the most characteristic manifestations of tuberculosis (1). Most of the cases of hepatic tuberculosis reported are in the form of miliary tuberculosis of the liver. In this report, we describe a rare case of tuberculous liver abscess with no evidence of infection in the lung or gastrointestinal tract.

Case Report

A 78-year-old woman was admitted to our hospital with one month history of fever on November 9, 2001. The patient had collagen disease treated with oral steroid until seventy-four years old. Physical examination showed neither hepatosplenomegaly nor cervical lymphadenopathy. On admission, chest radiography was unremarkable and laboratory tests showed an elevation of CRP (2.90 mg/ml) and erythrocyte sedimentation rate (91 mm/h). Purified protein derivate skin test was strongly positive (15×14 mm/25×24 mm). A hypoechoic lesion measuring 2.1×2.0 cm at medial segment of the liver was shown on an ultrasonography (US) of abdomen on November 1, 2001 (Fig. 1A). This lesion showed peripheral enhancement with central hypodensity on computed tomographic (CT) scan of abdomen taken on October 31, 2001 (Fig. 1B). In addition, hypodense mass lesions were detected in the anterior superior segment of the liver and spleen. The lungs, the pancreas, the kidneys, the gastrointestinal tracts and the colon appeared no abnormality. For the histological diagnosis, US-guided percutaneous biopsy of the lesion of medial segment was performed on November 16, 2001. Histological examination showed coagulation necrosis and epithelial spindle cells but not any tumor cells (Fig. 2). Langhans’ giant cells were not seen. The polymerase chain reaction (PCR) and Ziehl-Neelsen stain of the specimen for Mycobacterium tuberculosis was negative. The culture of Mycobacterium tuberculosis using the specimen was not performed. Based on the clinical appearances, imaging findings and pathological findings, we suspected a hepatic tuberculosis and splenic abscess without pulmonary involvement. Administration of anti-tuberculous agents (isoniazid 300 mg/day, rifampicin 450 mg/day, ethanbutol 750 mg/day) alone was given without any side effect. After the initial four weeks treatment, CT scan of the abdomen revealed the reduction of lesions in the liver and the spleen. It was demonstrated that tuberculous liver abscess had improved much greater on the CT of abdomen on May 10, 2002 (Fig. 3).
Among extrapulmonary tuberculosis, hepatic tuberculosis has been regarded as rare form of tuberculosis. Most of cases usually occurred in association with miliary lung tuberculosis, mainly through haematogeneous dissemination (2). The gastrointestinal tract was also the major source of infection. Levine et al have classified hepatic tuberculosis as: (1) miliary tuberculosis, (2) pulmonary tuberculosis with liver involvement, (3) primary liver tuberculosis, (4) tuberculoma,
and (5) tuberculous cholangitis (3). Reed et al have described three morphologic types of hepatic tuberculosis: (1) miliary tuberculosis of the liver associated with generalized miliary tuberculosis, (2) primary miliary tuberculosis of the liver without involvement of other organs, and (3) primary tuberculous granuloma or abscess of the liver (2). The prevalence of tuberculous liver abscess was 0.34% in patients with hepatic tuberculosis (4). Patient age has ranged from 6 months to 72 years, with an average of 39.2 years. Interestingly, there was no associated with active pulmonary or miliary tuberculosis in half of the cases (5). In the present case, we could finally make a diagnosis of primary tuberculous liver abscess and splenic abscess because no tuberculous lesions in the lung, gastrointestinal tract or colon were detected.

US and CT findings of liver tuberculosis reflect different stages of disease, varying from granulomatous tubercles with or without caseation necrosis to fibrosis and calcification in the healing stage (6). US findings of hepatic tuberculosis usually show hypoechoic lesion (7). Recently, hepatic tuberculosis presenting as a hyperechoic mass was reported (8). CT findings show hypodense nodular lesions (6). Contrast enhancement occurs in the peripheral granulomatous tissues and the central low density of caseation necrosis shows less enhancement (9). However, the radiological findings of tuberculous liver abscess have a low specificity. Therefore, the microbiological or pathological examinations of specimens are needed to make a diagnosis and to distinguish from the abscesses or the neoplasm of the liver. Microbiological diagnosis cannot be reached at all and the diagnosis can only be made on histological examination of abscess wall (10). Recently, PCR assay was demonstrated to be useful in a diagnosis of hepatic tuberculosis (11, 12). Although we first considered the primary or secondary liver neoplasm or pyogenic abscess as a cause of fever in the present case, the histological examination of the liver and the specific treatment with anti-tuberculous agents led to the final diagnosis of tuberculous liver abscess.

In summary, we have presented a rare case of tuberculous liver abscess and splenic abscess without pulmonary and gastrointestinal foci. A clinical diagnosis of tuberculous liver abscess is difficult owing to the rarity of the disease and consequent low clinical index of suspicion. However, we should be aware of the possibility of tuberculous liver abscess because the prognosis of tuberculous liver abscess is usually good.

References