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Tuberculous liver abscess- An unusual presentation

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Abstract: Hepatic tuberculosis is one of the rarest forms of extra-pulmonary tuberculosis. The focal or nodular form presenting as tuberculoma or abscess is uncommon.The diagnosis is most often delayed or missed because of nonspecific symptomatology and rare occurrence. A-70-year-old male alcoholic who was admitted in emergency ward with history of fever since two months, pain right upper abdomen and lower chest and loss of appetite since one month is evaluated and was diagnosed as having Tuberculous liver abscess. Ultrasonography (USG) showed an abscess with thick walls in right lobe of liver and USG guided needle aspirate was found to be positive for Acid Fast Bacilli (AFB) on Ziehl-Nelsen staining and Mycobacterium Tuberculosis DNA PCR. The present case highlights that tuberculous nature of liver abscess though rare, should be ruled out in cases of suspected pyogenic/amoebic liver abscess so as to avoid delay in treatment as the prognosis of tubercular liver abscess is good.
Keywords: Tuberculosis, Liver Abscess, Ziehl-Nelsen staining, Mycobacterium Tuberculosis DNA PCR..

INTRODUCTION

Hepatic tuberculosis is one of the rarest forms of extra-pulmonary tuberculosis [1, 2]. Most cases of hepatic tuberculosis are associated with miliary tuberculosis, in which there is diffuse involvement of liver. It may also be secondary to pulmonary or gastrointestinal tuberculosis. The focal or nodular form presenting as tuberculoma or abscess is uncommon [3]. Isolated hepatic tuberculoma without involvement of lungs or any other organ is perhaps the rarest form of tuberculosis. The diagnosis is most often delayed or missed because of nonspecific symptomatology and rare occurrence.

CASE REPORT

A-70-year-old male alcoholic who was admitted in emergency ward with history of fever since two months, pain right upper abdomen and lower chest and loss of appetite since one month. Initially fever was high grade and was associated with rigors and chills but later on it was low grade and intermittent in nature. Pain in the right hypochondrium was dull in nature and there was no radiation to any other site. Abdominal examination revealed tenderness in right hypochondrium on palpation. Liver was enlarged three cm below the right costal margin. It was tender with sharp margins and a smooth and soft surface. The spleen was not palpable and there was no ascities or any other palpable mass in abdomen.

Chest radiograph showed elevation of the right dome of diaphragm with blunting of right costophrenic angle. Chest radiograph shows no parenchymal abnormality. Ultrasonography of abdomen which showed an abscess with thick walls in right lobe of liver. The patient was treated as a case of amoebic liver abscess by the general practitioner for about two months but without any relief.USG guided needle aspiration of the lesion was done and chocolate coloured pus was aspirated. The pus was subjected to Ultrasonography of abdomen which showed an abscess with thick walls in right lobe of liver and Ziehl-Nelsen staining, cytological examination and culture. Pus was found to be positive for Acid Fast Bacilli (AFB) on Ziehl- Nelsen staining and Mycobacterium Tuberculosis DNA PCR, Negative for trophozoites of *Entamoeba histolytica*. Gram staining and culture for pyogenic organism was also negative. Patient was started on Anti Tuberculous Treatment (ATT) Category-I under Revised National Tuberculosis Control Programme, to which patient responded well.

RESULTS

Routine Blood Investigations are as follows:
Hb- 58%
Total Leucocyte count—10,800cells/mm^3
Differential count—Polymorphs -54%, Leucoctyes –40%, Eosinophils—6%.
ESR—70mm/hr
Random Blood Sugar—110mg/dl

Renal function tests- Normal
Liver function tests- Normal
Bleeding time (BT), Clotting time (CT), Prothrombin time (PT)- Normal
Blood grouping and Typing –B positive
HBsAg and HIV I and II –Non reactive

Chest Radiograph showed elevation of the right dome of diaphragm with blunting of right costophrenic angle.

Ultrasonography of abdomen showed an abscess with thick walls in right lobe of liver measuring approxiamately 8 cm x 7 cm. Pancreas, Kidneys, Omentum, Intestines and Spleen were normal and there were no significant lymph nodes/free fluid in the abdomen.

Ultrasonography of chest showed minimal right sided pleural effusion.

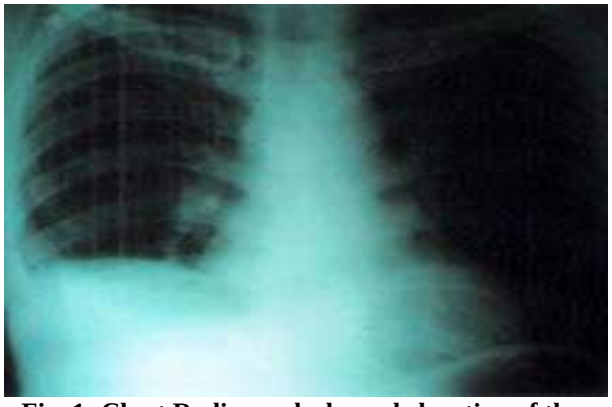

Fig. 1: Chest Radiograph showed elevation of the right dome of diaphragm with blunting of right costophrenic angle

Fig. 2: Ultrasonography of abdomen showed an abscess with thick walls in right lobe of liver

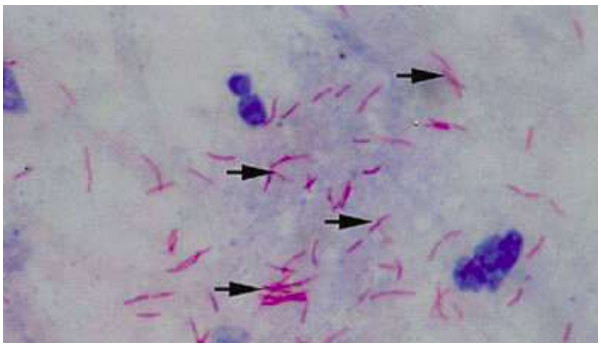

Fig. 3: Ziehl- Nelsen staining positive for Acid Fast Bacilli (AFB).

USG Guided aspirated Pus

Gram Staining: Negative.
Pyogenic culture & Sensitivity: Negative
Trophozoites of Entamoeba histolytica: Negative
DNA PCR for Entamoeba histolytica: Negative

Ziehl- Nelsen staining for Acid Fast Bacilli (AFB): Positive

DNA PCR for Mycobacterium Tuberculosis: Positive

DISCUSSION

Hepatic involvement is reported in 10 to 15% of patients with pulmonary tuberculosis and it is a common finding in patients with disseminated tuberculosis/Cryptic miliary tuberculosis. Tuberculous liver abscess was first described by Bestowe in 1858 [4].The prevalence of tuberculous liver abscess in patients with hepatic tuberculosis is 0.34%.In the literature approximately about 100 cases of tuberculous liver abscess have been described [5]. Primary hepatic Tuberculosis with out involvement oher organ is very rare, with fewer than 15 cases reported in the literature [6].

Reed *et al*. classified hepatic Tuberculosis as: (a) miliary Tuberculosis of liver associated with generalized miliary tuberculosis, (b) primary miliary Tuberculosis of liver without involvement of other organs, and (c) primary tuberculous granuloma or abscess of liver [6].

Levine *et al*. described five morphological forms of hepatic Tuberculosis as; (a) miliary tuberculosis, (b) pulmonary tuberculosis with liver involvement, (c) primary liver tuberculosis, (d) Tuberculoma and (e) Tuberculous cholangitis [7].

Hepatic tuberculosis is usually secondary to pulmonary or intestinal tuberculosis. Mycobacterium tuberculosis reaches the liver by hematogenous

dissemination: the portal of entry in the case of miliary tuberculosis of liver is through the hepatic artery, whereas in the case of focal tuberculosis of liver it is via the portal vein. Irrespective of the mode of entry, the liver responds by granuloma/ tuberculoma formation. Secondary re-activation of the Mycobacterium tuberculosis after hematogenous dissemination during primary infection of lung is another mechanism by which the liver is affected. The clinical diagnosis of tuberculous liver abscess had always been difficult. Usually symptoms and signs in this condition are non-specific. Constitutional symptoms in the form of fever, anorexia and weight loss are present in 55%-90% of the patients. Abdominal pain is present in 65%- 87% of patients. Jaundice is uncommon in tuberculous liver abscess being present in 20%-35% of patients and may be caused by extra or intra- hepatic obstruction [8].

Ultrasonographic findings of tuberculous liver abscess include a hypoechoic mass lesion in liver. The definitive diagnosis of tuberculous liver abscess needs microbiological/pathological examination of the specimen from the abscess as the clinical and radiological features are non-specific and may mimic pyogenic or amoebic liver abscess. Using needle biopsy specimen, epithelioid granuloma formation can be demonstrated in liver tuberculosis in 80% -100% of cases; caseation necrosis in 30% -83% and AFB on smear examination in 0%-59% of cases. The present case was initially simulating amoebic liver abscess and it was only after aspiration that the diagnosis of tuberculosis was made possible by smear examination and DNA PCR of the aspirated pus.

CONCLUSION

The present case highlights that tuberculous nature of liver abscess though rare, should be ruled out in cases of suspected pyogenic/amoebic liver abscess so as to avoid delay in treatment as the prognosis of tuberculous liver abscess is good.

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