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Case Report

Isolated Tubercular Liver Abscess: A Rare Case Report

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Abstract:

Background: Tuberculosis (TB) continues to be a global public health problem, particularly in the developing countries [1]. It usually involves organs like lungs and/or gastrointestinal (GI) tract [2]. Hepatic involvement is usually associated with miliary tuberculosis which is one of the most characteristic manifestations of tuberculosis. Isolated liver abscess without any primary infection is a rare clinical entity. It is more difficult for a clinician to diagnose as in most cases it is frequently confused with pyogenic or amoebic liver abscess or a hepatoma [3]. Only a few cases have been reported in Bangladesh till date [4-7]. Recently we came across tubercular liver abscess in an immunocompromised patient without any primary foci of infection which was really a diagnostic challenge for us.

Objectives: The objective of reporting this case is to aware clinicians about the uncommon presentation of a common disease like tuberculosis. This will be an eye-opening experience for clinicians and help in formulating differentials in the workup of patient with pyrexia due to non-resolving liver abscess.

Key words: tuberculosis, isolated liver abscess

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Case Report

A 55-years-old diabetic, hypertensive female was admitted to a private tertiary level hospital with right upper abdominal pain associated with intermittent fever for 15 days. She had no history of cough, hemoptysis or altered bowel habit. No history of TB or contact with any patient having TB in past. On admission patient was febrile (temperature 100°F) with a pulse rate 102/min, blood pressure was 110/70mmHg, mildly anemic, non-icteric, non-edematous and had no lymphadenopathy. Abdominal examination revealed tenderness at right hypochondriac region. But there was no hepatosplenomegaly, ascites, or any other palpable mass in her abdomen. Other system examination revealed no significant abnormality. These information were collected from discharge paper of the hospital.

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Blood parameters were as follows: Hb% 10.4 gm/dl, neutrophilic (86%) leukocytosis (24,000/cmm), ESR 120 mm in 1st hour, CRP was raised (196mg/dl), AST 47 U/L; ALP 280 U/L. Chest X-ray was normal. Ultrasonogram(USG) of whole abdomen showed SOLs in liver possibly liver abscess 6.9 cm x 6.0 cm in right lobe (**Figure-1**) and 12.4 cm x 8.6 cm in left lobe of liver (**Figure-2**), CT scan of hepatobiliary system showed inflammatory mass/abscess at left lobe of liver about 10 cm x 7 cm and suspected focal lesion in right lobe of liver at inferior aspect with no contrast enhancement. She was diagnosed as a case of liver abscess and treated with injectable antibiotics (combination of Amoxicillin and Clavulanic acid, 1.2 gm 8 hourly) for 3 weeks and oral Metronidazole 800mg 8 hourly for 10 days. Initially patient's condition was improving with resolution of fever, abdominal pain and her follow up USG report showed decreased size of the liver abscess (5.7 cm x 5.0 cm in left lobe and 3.4 cm x 3.5 cm in right lobe).

But after a few days her condition again deteriorated and she got admitted in Sylhet M.A.G. Osmani medical college hospital with right upper abdominal pain, anorexia, and weight loss for 2 weeks. On examination the patient was mildly anaemic and tender hepatomegaly (3 cm from right costal margin)

was found. The patient was again evaluated. Repeat CBC showed WBC-16,000/cmm, neutrophil count was 75%, Hb% 10.1 gm/dl, ESR 55 mm in 1st hour, CXR was normal, CT scan of hepatobiliary system was done which revealed multiple hepatic abscess largest one measuring about 9.1 cm x 7.2 cm in left lobe of liver (**Figure-3**)**.** Serum alpha fetoprotein (AFP) was normal.

For further evaluation a CT guided needle aspiration cytology was done from the abscess and about 100 ml pus was drained which was dark brown in color and sent for various examinations. Cytology showed RBC 80-100/HPF, WBC plenty/HPF, TLC >10,000/cmm, 90% cells are neutrophil, GeneXpert ULTRA revealed mycobacterium tuberculosis (MTB) and Adenosine deaminase (ADA) was raised (>200 IU/l). No gram-stained organism or AFB was seen. Aspirated pus was sent to Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh for bacteriological (including B. Pseudomallei) and fungal culture but revealed no growth.

So finally, patient was diagnosed as a case of isolated tubercular liver abscess. We started anti TB drugs 4FDC (Isoniazid, Rifampicin, Pyrazinamide, Ethambutol) for 2 months followed by 2FDC (Isoniazid, Rifampicin) for next 4 months. Patient got improved and follow up USG of hepatobiliary system was done after 3 months which showed small SOL in liver about 3.7 cm x 3.3 cm in left lobe. About 5 months after getting systemic anti tubercular drugs USG of hepatobiliary system revealed normal size of liver with homogenous parenchyma without any focal or diffuse lesion (**Figure-4**)**.** There was gradual resolution of symptoms and follow up was continued. Now she is still healthy.

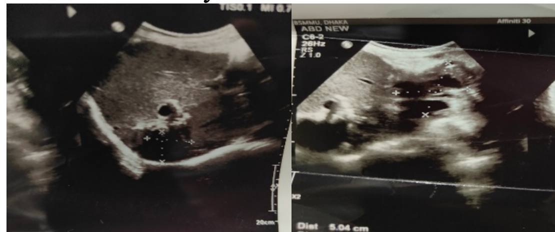
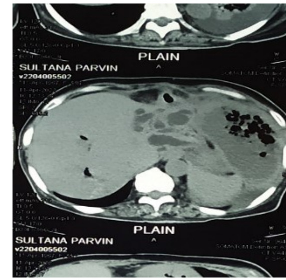


Figure-1 **Figure-2**



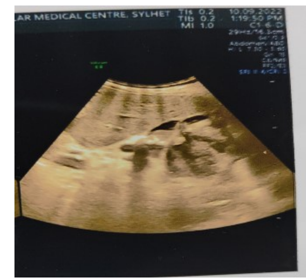


Figure-3 **Figure-4**

Discussion

Among extra pulmonary TB isolated tubercular liver abscess is a rare form. First tubercular liver abscess was described in the year of 1858 by Bristowe [8]. Three forms of hepatic tuberculosis have been described. The first is diffuse hepatic involvement seen along with miliary or pulmonary TB. The second form is diffuse hepatic infiltration without pulmonary involvement which was previously called primary miliary tuberculosis of liver. The third one is focal liver abscess or tuberculoma [9].

Tubercular liver abscess is frequently confused with hepatoma, amoebic or pyogenic liver abscess as seen in our patient. Symptoms of the disease are commonly non-specific and include fever, diffuse abdominal pain, anorexia and weight loss. Common physical finding is hepatomegaly and jaundice is a rare manifestation. Because of non-specific clinical presentation diagnosis is usually made at autopsy or occasionally after laparotomy has been performed [10].

The radiological findings of tubercular liver abscess have a low specificity [11]. Therefore, the definitive diagnosis needs demonstration of tubercular bacilli in aspirated pus or in liver biopsy sample by AFB staining, culture, or PCR for mycobacterium tuberculosis [3]. Our patient was first treated in a private tertiary level hospital as a case of pyogenic liver abscess as isolated tubercular liver abscess is a rare possibility. Aspiration of pus was not done before antibiotic administration though it was indicated. Initial clinical and radiological improvement was probably due to partial anti TB action of Amoxycillin and Clavulanic acid. Failure in persistent improvement of patient's

condition compelled us to repeat some investigations including aspiration of pus from liver. Cultures of aspirated material for bacteria and fungi were sterile. Ashdown's medium was used to grow B. pseudomallei and it was negative. Finally positive GeneXpert ULTRA and high ADA of aspirated pus along with patient's non resolving clinical symptoms helped us to make the diagnosis of tubercular liver abscess. Systemic anti TB drugs were started and patient was clinically and radiologically improved with ultimate resolution of abscess. Strict glycemic control was achieved by insulin.

Conclusion

Tubercular liver abscess is a rare clinical presentation and a bit challenging to diagnose for a physician. Bangladesh is a high endemic zone among Southeast Asian countries for TB. So high index of suspicion should be kept in mind when dealing with a non-resolving liver abscess as tuberculosis is a possibility and it is treatable if timely diagnosed.

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