Original Research Paper

Volume - 11 | Issue - 11 | November - 2021 | PRINT ISSN No. 2249 - 555X | DOI : 10.36106/ijar

Microbiology

TUBERCULOUS SPLENIC ABSCESS IN AN IMMUNOCOMPETENT CHILD: A CASE REPORT

Dr. Swati Salila*	Sr, Microbiology, AIIMS, Raipur. *Corresponding Author
Prof. Dr. Anima Xess	Ex. Professor, IGIMS, Patna
Dr. Rakesh Kumar	Asso. Professor, IGIMS, Patna
Dr. Shailesh Kumar	Professor, IGIMS, Patna
Dr. Namrata Kumari	Professor, IGIMS, Patna

ABSTRACT Abdominal TB comprises of 3% of all Extra-Pulmonary tuberculosis (EPTB). Splenic tuberculosis with abscess formation is an uncommon manifestation and occurs primarily in immune-compromised patients. The clinical presentation is varied and diagnosis in most cases are difficult and it was diagnosed following splenectomy in the past. Here we report a case of tuberculous splenic abscess in a fourteen years old boy of Bihar, the only symptom was mild fever and abdominal discomfort, the diagnosis of which was difficult and was made by use of CBNAAT.

KEYWORDS : EPTB, splenic abscess, immune-competent, CBNAAT

INTRODUCTION

Tuberculosis (TB) continues to be a major health problem in developing countries like India, despite health authorities' effort to control it. Extra-Pulmonary tuberculosis (EPTB) constitutes 15-20% of all cases. Abdominal TB comprises of 3% of all EPTB.[1] Splenic tuberculosis with abscess formation is an uncommon manifestation and occurs primarily in immune-compromised patients. In HIV infected patients *M. tuberculosis* may cause splenic abscess as an opportunistic pathogen. Splenic involvement is extremely rare in immune-competent person.[2] The clinical presentation is varied and a diagnosis in most cases is made post-operative following splenectomy.[3] We report a case of Tubercular splenic abscess in a fourteen years immune-competent child, the only symptom was mild fever and abdominal discomfort, diagnosis of which was difficult and established by use of CBNAAT.

CASE STUDY

A fourteen-year-old boy from Banka district of Bihar presented with a history of mild fever off and on for the past one year. He also had abdominal discomfort for the last six months. He had progressive loss of appetite and marked weight loss. He had no history of cough, vomiting, jaundice and alteration of bowel habits. There was no family history of tuberculosis. He was treated by local doctors with various antibiotics but didn't improve.

On examination - the child was emaciated and febrile. Abdomen was soft and mild tenderness felt below left costal margin with a palpable lump of about five centimeters of spleen. Chest was clear and CVS was within normal limits. On investigation Blood parameters showed – Total Leucocyte count -12,000/cumm of blood, polymorphs – 64%. Lymphocytes – 28%, Hemoglobin -8.7gm/dl. PCV – 29.3%, normocytic hypochromic anemia, ESR was raised -116mm at the end of two hours. Mantoux test was negative. Chest X-Ray was within normal limits. Ultrasonography (USG) of abdomen showed matted bowel loops and multiple loculated peritoneal fluid pockets. Multiple enlarged mesenteric nodes were seen with largest node measuring 13mm of diameter. There was mild enlargement of liver with homogenous texture. Spleen was moderately enlarged with multiple well-defined hypodense lesion with fluid suggestive of splenic abscess. USG guided pus aspiration was done and was sent for Gram stain, Z.N. Staining, bacterial culture, fungal culture and CBNAAT. Z. N. smear from pus was negative for Acid Fast Bacilli. Routine culture of the pus showed negative for bacterial culture. The aspirated pus from spleen was subjected to CBNAAT, which showed low level of *Mycobacterium tuberculosis* which was sensitive for Rifampicin. Patient was diagnosed as tuberculous splenic abscess. Patient was administered anti tuberculous drugs as per RNTCP guidelines for extra-pulmonary tuberculosis. Patient responded well to the therapy. The aspirated pus was sent for MTB culture in solid as well as liquid medium which were positive for *Mycobacterium tuberculosis*. CBNAAT plays important role in rapid diagnosis of MTB specially in EPTB.

DISCUSSION

Tuberculosis is a systemic disease involving almost all organs and can be divided mainly into Pulmonary (PTB) and Extra- pulmonary Tuberculosis TB (EPTB). EPTB comprises of 15% -20% in HIV negative patients and 40-50% in HIV positive cases.

Abdominal organ involvement was observed in 3% cases of extra-pulmonary TB.[1] Abdominal TB comprises of involvement of gastro-intestinal tract, peritoneum, omentum, mesentery, regional lymph nodes and solid organs like liver, spleen and pancreas. Tubercular involvement of liver, pancreas and spleen usually occurs in miliary or disseminated tuberculosis and commonly affect immune-compromised individuals. Isolated abdominal solid organ TB is rare in immune-competent individuals. The incidence of splenic TB is 0.14-0.7% as per autopsy-based studies. [3,4] The symptoms for splenic TB are usually non-specific and deceptive, including fever, malaise, night sweat, diarrhea, abdominal pain, weight loss and anorexia. It can be asymptomatic as well.[5] Anemia is also seen in some cases, either as microcytic or normocytic and elevated ESR may also be an indicator.[6] In our case ESR was markedly raised and also there was normocytic hypochromic anemia. Splenic TB can present as splenomegaly, hyper-splenism, solitary splenic lesion or splenic abscess.[7] Multiple abscesses in splenic parenchyma are usually seen in patients with HIV infection but is a rare entity in patients with preserved immunity.[7,8,9,10] The diagnosis may be difficult due to the absence of tuberculous lesions in other organs, especially in the lungs, from where there is a possibility of hematogenous spread to the spleen, as in milliary tuberculosis.

In our case, the patient had history of fever for long duration, but it was mild and came off and on, therefore not noticed earlier. But due to loss of appetite there was marked weight loss and vague mild abdominal discomfort which were not sufficient for any clinical diagnosis. Patient gave a negative response to the Mantoux test. Chest X-ray was within normal limits, which denies the presence of primary focus in the lung. Ultrasonography is helpful in diagnosis of splenic enlargement and abscess formation within, but not the TB of the organ. Aspirated pus was negative for AFB on Z-N staining. Finally, CBNAAT showed low level of MTB, which was considered as earliest test for diagnosis of tuberculous splenic abscess, which was further confirmed by liquid culture. According to Sahoo et.al. the aspirate from splenic abscess clinched the diagnosis of tuberculosis by CBNAAT.[1] The child was also immune-competent, which is rarely associated with primary splenic tuberculosis.[9,10] The patient was administered anti-tuberculous drugs to which patient responded well.

Diagnosis of tubercular splenic abscess has usually been made following splenectomy in the past.[3] In spite of the progress in modern

imaging and cytology; a preoperative diagnosis of tubercular splenic abscess is difficult in the absence of tubercular foci in any organ. [11,12] Management of splenic abscess options are varied. [3,5,9] Percutaneous aspiration of pus for culture and AFB staining followed by antitubercular therapy has been reported effective. In case there is clinical improvement a splenectomy can be avoided. A treatment similar to that for other extra-pulmonary sites is recommended. A few controlled studies suggest a 12-month course of anti-tuberculous treatment to be appropriate for the treatment of patients with splenic TB. However, if there is no clinical improvement with the above option, splenectomy is required. [10,12] In our case patient responded well to anti-tuberculous therapy.

CONCLUSION

Tuberculous splenic abscess is difficult to diagnose due to vague clinical presentation. Long duration of fever with loss of appetite and marked weight loss may be due to tubercular origin, but exact location of involvement is difficult to detect. Modern non-invasive modalities like ultrasonography and CT scan can detect the organ involved, but can't detect the organism responsible. CBNAAT is the diagnostic modality which helps in the early diagnosis of MTB, so that treatment can be established earliest.

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