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Case Report

Tubercular splenic abscess in an immunocompetent child: an unusual manifestation of abdominal tuberculosis

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ABSTRACT

Tuberculosis remains one of the most common infectious diseases worldwide with significant morbidity due to its varied pulmonary and extrapulmonary presentation. An extremely uncommon and rare manifestation of gastrointestinal tuberculosis in children is tubercular splenic abscess especially in an immunocompetent child. A nine year old immunocompetent girl presented with fever, weight loss and abdominal pain for two months. She had a strong positive history of tubercular contact. Examination revealed body mass index below the third percentile, pallor, hepatosplenomegaly with left upper quadrant tenderness. While gastric aspirate for acid fast bacilli (GA For AFB) and GeneXpert was negative, she had a strong ulcerative reaction to Tuberculin test with 15mm induration. Contrast enhanced computed tomography (CECT) of abdomen was suggestive of extensive lymphadenopathy and a splenic abscess measuring 57×42×69 mm. GeneXpert of aspirated pus reported detection of Mycobacterium tubercular bacilli (MTB) confirming splenic abscess as tubercular. The patient received antitubercular therapy and underwent percutaneous drainage with good clinical and radiological response. Splenic abscess is itself very rarely encountered in children, making tubercular splenic abscess extremely rare. But lack of awareness regarding the same and delay in diagnosis may lead to serious morbidity and mortality.

Keywords: GeneXpert, Paediatric abdominal tuberculosis, Splenic abscess

INTRODUCTION

Splenic tuberculosis in isolation, without extra splenic involvement in immune competent individuals is a very rare form of abdominal tuberculosis.[1] Splenic tuberculosis is extremely rare, with only a few cases reported in the literature, especially in immunocompetent children even in countries with a high prevalence of tuberculosis. Splenic abscess in the paediatric population is a rare but serious condition. Its incidence is reported to be between 0.05% and 0.7%.[2] Although common in the adult population, it can be life-threatening in paediatric patients.[3-5] Here we report a case of 9 year old female immunocompetent child diagnosed as abdominal tuberculosis with an associated tubercular splenic abscess successfully managed with antitubercular therapy and percutaneous drainage.

CASE REPORT

A nine - year -old female child presented with a history of vague abdominal discomfort, high grade fever, loss of appetite and weight loss since two months, with a positive history of tubercular contact from mother three years back for which she received six months of isoniazid preventive therapy. She had no history of previous recurrent infections or hospitalizations.

On examination child was of moderate built with a body mass index below the 3rd percentile and febrile. Abdomen was soft, with tenderness over left hypochondrium region on superficial palpation. On deep palpation hepatosplenomegaly present, with liver size: 4.5 cm; span 8.5 cm, and spleen 2.5 cm below costal margin, both having smooth surface and sharp margins. Respiratory

and CVS including 2D echocardiography was within normal limits. On investigation blood parameters showed-total leucocyte count-5200 cells/mm^3, polymorphs-68%, lymphocytes-26%, Hb-10 gm/dL, packed cell volume-29.8%, normocytic normochromic anemia. Liver function test was suggestive of (S/O)-S. bilirubin-0.34 mg/dL, SGOT-93.3 IU/L, SGPT- 33.9 IU/L, S. albumin-3.6 g/dl. Renal profile, urine examination and blood culture was normal. Chest X-Ray within normal limits. In view of tuberculosis tubercular workup was done-Mantoux test was highly positive with 15 mm ulcerative induration (Figure 1).

Figure 1: Arrow showing ulcerative tuberculin reaction. Also, pigtail catheter inserted for drainage of splenic abscess.

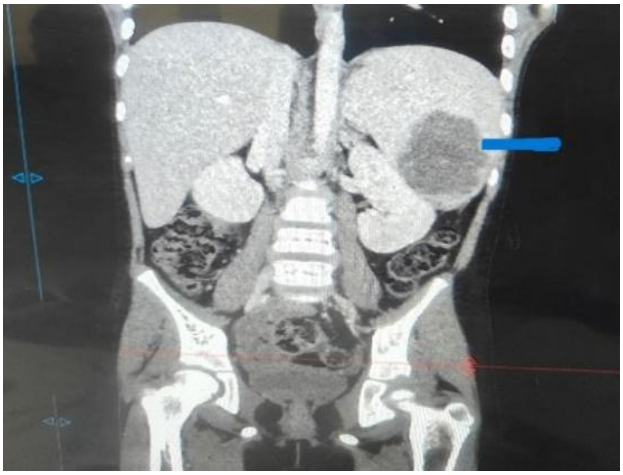

Figure 2: CECT abdomen showing splenic abscess (57×42×69 mm) with arrow marking the lesion.

GA for AFB and GeneXpert was negative. Ultrasonography of abdomen showed multiple enlarged lymph nodes in periportal, paraaortic and mesenteric region, few with loss of hila and few were conglomerated largest measuring 40×30 mm in paraaortic region. To our surprise it also revealed heterogenous, hypodense pocket of collection in spleen around 130 cc with thick internal echoes suggestive of splenic abscess. For confirmation CECT abdomen done which showed-hypodense lesion of 57×42×69 mm (Figure 2) with peripheral rim enhancement suggestive of splenic abscess.

Management and outcome

USG guided pus aspiration was done and was sent for Gram stain, Ziehl Neelsen (ZN) staining, bacterial and fungal culture. ZN smear of pus was negative for AFB. Routine microscopy of pus revealed nonpyogenic features with a reddish, turbid appearance, with glucose-10 mg/dL, protein-0.6 g/dL, albumin 0.4 g/dL with degenerated cells seen in a background of necrotic debris, with negative fungal culture. The aspirated pus from spleen was subjected to GeneXpert, which showed low level of MTB which was sensitive to rifampicin. Patient was diagnosed as Abdominal tuberculosis with tuberculous splenic abscess, which is an uncommon entity and rarely seen in our clinical practice. Patient was started on antibiotics and antitubercular therapy (ATT) as per National tuberculosis elimination programme (NTEP) guidelines for extra-pulmonary tuberculosis. Due to poor response to initial medical therapy and persistent fever surgical drainage was considered necessary. She underwent spleen conserving approach in form of percutaneous drainage of the abscess via pigtail catheter insertion. She responded well and pigtail catheter was removed after 10 days, with repeat USG showing radiological improvement. The patient showed sustained recovery and splenectomy was successfully avoided. On follow up patient had weight gain of 2 kg, with no fever and repeat USG abdomen with no abscess.

DISCUSSION

Splenic abscess is an infectious suppurative process with an appreciable filling defect in the subcapsular space or splenic parenchyma. Etiology varies from bacterial infection via hematogenous spread or locoregional extension from the gastrointestinal tract, septic emboli, trauma, sickle cell anemia, malarial infestation, infective endocarditis, and very rarely tuberculosis that too mainly in immunocompromised children.[2]

Pathophysiology of splenic tubercular abscess involves the hematogenous spread of MTB to the spleen from a primary site of infection like miliary tuberculosis, which leads to formation of tuberculomas. With time, these tuberculomas undergo caseation necrosis, leading to formation of a pus-filled abscess. Splenic tuberculosis was first described in the literature by Cooley in 1846. Tubercular splenic abscess is one amongst the five pathomorphological forms of splenic tuberculosis, others being, miliary, nodular, calcific and mixed type. Isolated splenic tuberculosis is exceedingly rare, with few cases reported in the literature, especially among immunocompetent children.[6] Splenic involvement in tuberculosis mainly occurs in the context of miliary tuberculosis in immunocompromised patients.[7] In our

case patient was immunocompetent, as she had no history of previous hospitalizations or repeated infections. Diagnosis of splenic tuberculosis is usually delayed because of nonspecific symptoms.[8] Pain is usually reported as uncommon symptom while more common symptoms include fever followed by fatigue with weight loss and splenomegaly.[8] Our case also presented with classical constitutional symptoms and splenomegaly, but the absence of pulmonary involvement and negative initial microbiological tests made the diagnosis challenging. Splenic tuberculosis is associated commonly with leucopenia and anemia which is mostly normocytic and normochromic.[9] Our patient also had normocytic normochromic anemia.

The diagnosis of tubercular splenic abscess is 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 miliary tuberculosis. As in our patient chest X-ray was normal which ruled out a primary pulmonary focus. USG and CECT abdomen are useful for diagnosing splenic abscesses, but CECT is considered the gold standard because of its high sensitivity and specificity.[10] In our case also USG was helpful in diagnosis of splenic enlargement and abscess formation which was further confirmed by CECT abdomen emphasising the importance of early diagnosis with help of imaging studies.

Management of splenic abscess has evolved over time. It depends on various factors like location, size and number of lesions, immune status of patient and the etiology. In older days total splenectomy was considered as the standard surgical treatment, but now spleen-preserving approach in form of partial septectomy or percutaneous drainage are the preferred options especially in children in order to save the immunological and phagocytic functions of spleen.[11] In our case also we opted for USG guided percutaneous drainage of the abscess along with anti-tuberculous drugs to which patient responded well.

Splenic abscess carries high mortality in children if diagnosed late and mostly responds to splenectomy, which further justifies the importance of timely diagnosis as in our case we managed the patient conservatively and surgical intervention could be deferred.

CONCLUSION

The case highlights the importance of thorough clinical and radiological examination of a patient presenting with tuberculosis. Diagnosis of tubercular splenic abscess is challenging and often delayed, with high mortality rate if left untreated. But early diagnosis and appropriate treatment leads to excellent outcome and prevents unnecessary splenectomy.

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