



Case report

Child with hard calcified abdomen

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ABSTRACT

A young child with unsuspected tuberculosis (TB) presented with chronic pain abdomen along with off and on fever. He was admitted as case of lymphoma.

X ray of the chest and abdomen showed diffuse miliary calcified lymph nodes and omental nodules. Aspiration yielded dry tap and hence Cartridge Based Nucleic Acid Amplification Test (CBNAAT) was not done. Omental biopsy revealed occasional mature lymphocytes, epithelioid histiocytes forming ill-defined granuloma. Ziehl Neelsen stain was non-contributory.

The patient responded to anti tubercular drugs (prescribed for six months) and his abdomen softened. He was put on nutritional support which helped him regain health.

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Background

Maximum number of Tuberculosis cases are clinically confined to respiratory system. Extrapulmonary tuberculosis generally results from lymphogenous or hematogenous spread [1] (Fig. 1).

Patients with peritoneal tuberculosis are usually immunocompromised and suffer from comorbidities like cirrhosis, renal failure and diabetes mellitus [2]. However, there were neither pulmonary complaints nor comorbidity in this case. The only significant findings were cachexia and abdominal swelling. The importance of accurate and timely diagnosis of tuberculosis in various organ systems cannot be over emphasised.

Case presentation

A 6-year-old male presented to Paediatrics department with on & off fever for last six months, reduced appetite, altered bowel habits and gradually increasing painful abdominal swelling for the last three months. There was no history of tubercular contact, primary Koch's, co morbidity, surgical intervention, or prolonged drug intake. General and physical examination revealed cachexia, wasted limb muscles, hard, non ballotable, non-tender abdomen on palpation. Blood investigations revealed increased Erythrocyte sedimentation rate of 60 mm after first hour, haemoglobin of 6.5 g/dl, and total leucocyte count of 11,500 cells/cubic millilitre with relative leucocytosis. Peripheral blood smear examination did not

reveal immature cell forms. Biochemical parameters including liver function test were within normal limits.

Investigations

FNAC resulted in dry tap. X ray chest and abdomen showed diffuse white dot like tuberculous lymph nodes (mesenteric, aortic and para-aortic) with the characteristic low-attenuation centre and peripheral rim enhancement.

Omental biopsy was performed which showed diffusely calcified and necrosed fibro fatty tissue infiltrated by few granuloma comprising of lymphocytes, epithelioid cells and plasma cells. Diagnosis of tubercular peritonitis was proposed.

Treatment

Anti tubercular treatment was started and patient started responded well.

Outcome and follow up

Patient regained good appetite and normal muscle strength. Contradiction to initial clinical possibility of lymphoma boosted the child as well as parents.

Discussion

As assessed by World Health Organisation in 2018, 10 million individuals got infected with *Mycobacterium tuberculosis* worldwide, out of which 1.1 million were children. Of these, 205 000 children capitulated to tuberculosis (counting those with HIV).

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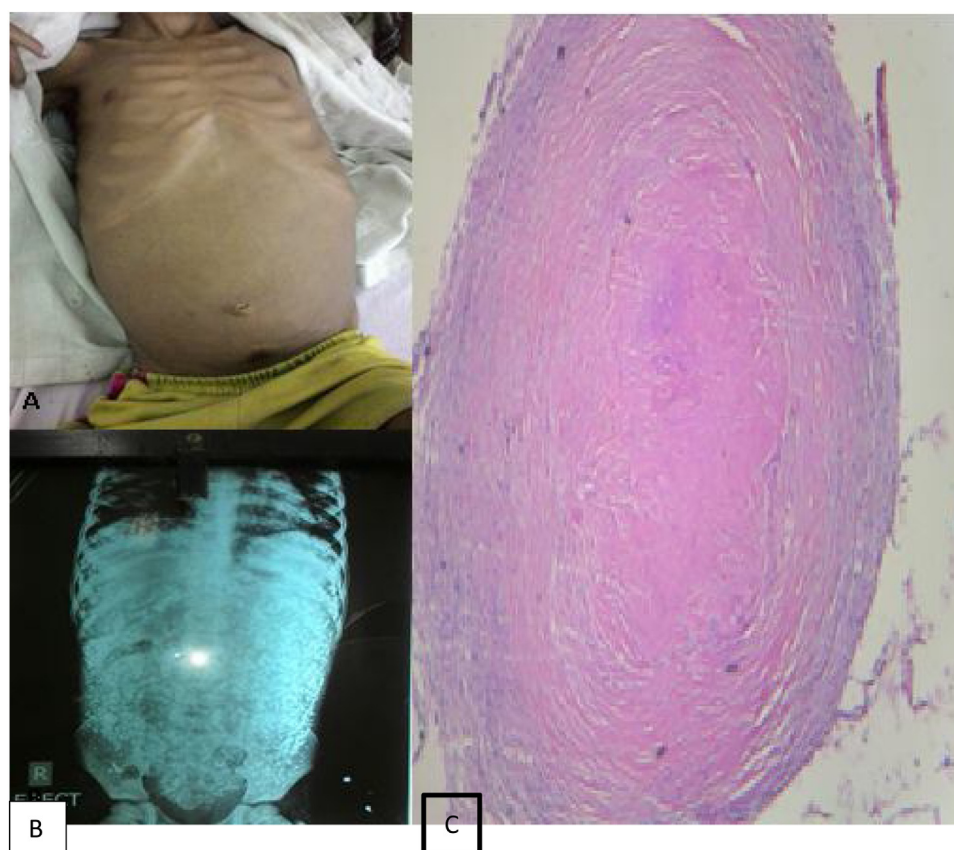


Fig. 1. A. Clinical photograph showing emaciated patient with swollen abdomen. B. Radiograph showing diffuse calcified tubercles. C. Microphotograph showing caseous necrosis with surrounding inflammation and fibro-fatty tissue (H & E, 40 X).

In 2019, 87,869 pediatric patients were detected in India itself.

Tuberculosis causes significant morbidity and mortality in children in tuberculosis -endemic territories [3]. Albeit pulmonary tuberculosis is the most prevalent type of tuberculosis, children experience the ill effects of extrapulmonary forms [4].

Primary tuberculosis is generally self-restricting while post primary tuberculosis is progressive and results in cavitation [5]. Diagnosing childhood tuberculosis is additionally testing because of variable and vague symptoms compounded by all the more disturbing issues like pneumonia, malnutrition or meningitis [6]. Chest radiography remains the pillar of diagnosis which uncovers the four fundamental entities: parenchymal disease, lymphadenopathy, pleural effusion and miliary disease. Clinically significant miliary tuberculosis influences 1–7 % of patients with weak immunity where 2–3 mm calcified lymph nodes are evident as diffuse nodes. Common presenting complaints include reduced playfulness and failure to gain weight. Evening rise in temperature is uncommon in this age group [7]. Only when the airways are affected, youngsters present with tenacious non-remitting cough or wheeze, inert to traditional treatment [8].

Abdominal tuberculosis includes the gastrointestinal tract, lymph nodes or peritoneum, comprising up to 12 % of extrapulmonary tuberculosis and 1 %–3 % of the total cases [9]. It mimics conditions like malignancy or inflammatory bowel disease. Abdominal lymphadenopathy being the most well-known sign of abdominal tuberculosis, is evident in about 55 %–66 % of patients [10]. Peritonitis influencing 33 % of patients is thought to start fundamentally via haematogenous spread or secondary to a ruptured lymph node. The condition is primarily of three

types—wet, fibrotic, and dry/plastic [11]. Omental involvement in tuberculous peritonitis is of "fibrotic-fixed" type which manifests as an irregular mass [12]. On imaging, omentum appears thickened, caked, or smudged. Peritoneal thickening with associated enhancement; nodular implants with irregular thickening are fairly uncommon being more suggestive of peritoneal carcinomatosis [13].

As this child had no constitutional symptoms, performing tissue biopsy was the most suitable strategy to distinguish the illness.

Conclusion

Achieving the World Health Organisation objective of zero tuberculosis requires a joint exertion with more noteworthy duty and assembly of expanded assets. The clinical and radiologic highlights of tuberculosis may mirror those of numerous different infections, consequently a serious level of doubt is required, particularly in high-risk population. Children in tuberculosis-endemic regions like India endure serious tuberculosis-related morbidity and mortality, and an enormous number of cases are analysed distinctly based on clinical history and physical assessment.

Childhood tuberculosis is a decent pointer of the viability of tuberculosis control programs however is rarely recognized, as paediatric population contribute little to transmission [14].

The World Health Organization training toolkit released in 2014 [15], to battle childhood tuberculosis zeroing in on building capacity of health care workers at the primary and secondary level to address, combat and manage tuberculosis in children is a helpful guide.

Sources of funding

Nil.

Authors statement

As the corresponding author, I am resubmitting the case report after incorporating respected reviewer's suggestions.

Learning points

Tuberculosis in children may not be associated with history of tubercular contact.

Cyto/histopathological confirmation remains the main modality of diagnosis in cases with unusual presentation.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request".

Declaration of Competing Interest

The authors report no declarations of interest.

Acknowledgement

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