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DISSEMINATED TUBERCULOSIS WITH A NEAR ASYMPTOMATIC PRESENTATION IN A TODDLER

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ABSTRACT:
A toddler was referred to us with complaints of poor weight gain and appetite since 2 months. A routine evaluation was done at nearby hospital which showed right middle zone infiltrates in Chest X ray, for which child was given antibiotics for two weeks. GeneXpert of gastric lavage sent was negative. Child was referred in view of persisting radiological changes. At our tertiary care centre, CT Chest with abdomen done showed right upper lobe consolidation, multiple necrotic lymph nodes in mediastinal, retroperitoneal region and multiple hypo-enhancing lesions in liver. Laparoscopic biopsy of the lesion with GeneXpert confirmed Tuberculosis. Child was started on Antitubercular treatment. Presentation of a child with disseminated tuberculosis with nonspecific symptoms like poor weight gain is rare. Such cases pose diagnostic dilemma due to lack of overt clinical symptoms. Potential delay in treatment can cause significant complications. Hence, early detection is vital in management of Tuberculosis

INTRODUCTION

Tuberculosis is re-emerging as the worlds leading cause of death from a single infectious agent. Children have increased vulnerability to tuberculosis due to their immature immune system. TB usually presents with prolonged cough, chest pain, weakness, fatigue, weight loss, fever and night sweats. TB in children often presents with nonspecific or atypical symptoms, complicating early detection. But completely asymptomatic cases are very rare. If disseminated TB goes undiagnosed, the child could later present with complications like miliary tuberculosis or meningitis. This case report focuses on a near asymptomatic presentation of disseminated tuberculosis to improve physician awareness and clinical outcomes.

Case Presentation

A toddler was referred to our tertiary care unit with complaints of poor weight gain and appetite for past 2 months. Child was initially evaluated at a nearby hospital for the same complaints. A baseline evaluation was done which showed right middle lobe infiltrates in Chest Xray. Child was treated with IV Amoxycillin Clavulanic acid. Mantoux done was positive. Gene Xpert of gastric lavage sent was negative. Child was referred in view of persisting middle lobe infiltrates radiologically even after IV antibiotics

Child was delivered by LSCS in view of previous LSCS. Birth weight was 3.3 Kg with Neonatal ICU observation for few hours in view of weak cry at birth. Child was developmentally normal and immunised up to age according to National immunisation schedule. There was no history of fever, cough or similar complaints in family members. No history of contact with known cases of tuberculosis.

On examination vitals were stable, child was afebrile. Pallor was present. Respiratory system showed bilateral equal air entry with no added sounds.

Investigations If Relevant

Baseline investigations done at the referral hospital showed anemia with normal total counts. Mantoux test was positive. Chest Xray showed right middle zone infiltrates which persisted in the Chest Xray taken on admission at our centre (figure1). Blood counts done showed Hemoglobin 9, total count 19500 with polymorph predominance. Peripheral smear showed microcytic hypochromic anemia with thrombocytosis.

CECT chest with abdomen reported Patchy subsegmental consolidation in anterior segment of right upper lobe with multiple peripherally enhancing necrotic lymph nodes in mediastinal and retroperitoneal area. Multiple hypo enhancing lesions in both lobes of liver were also present (figure2). Bronchoalveolar lavage done was GeneXpert negative.

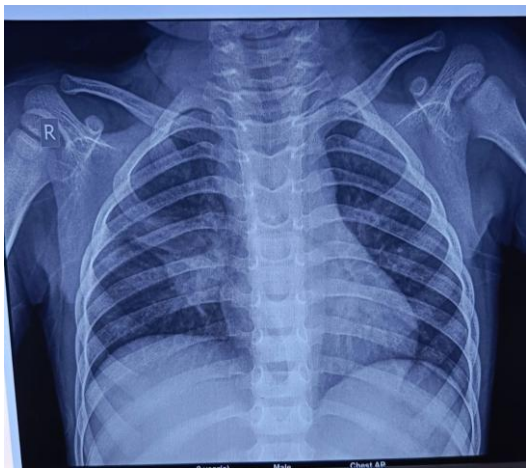

Figure:1 Chest Xray In Pa View Showing Right Middle Zone Haziness

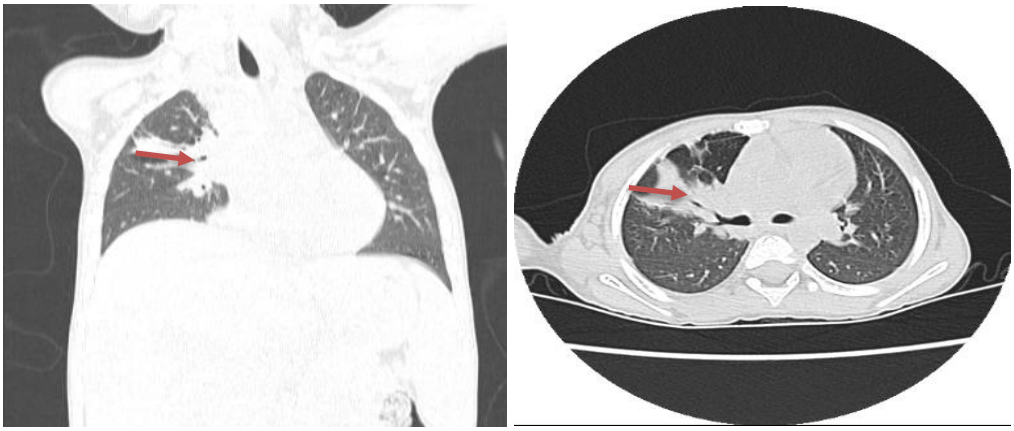

Figure 2: CECT Thorax and Abdomen A:Patchy subsegmental consolidation, B: Peripherally enhancing necrotic lymph nodes

Differential Diagnosis If Relevant

As the child had history of poor weight gain with clinical picture of anemia and CT showing multiple enlarged lymph nodes, one of our differential was hematological malignancies. LDH and uric acid levels were normal. Histopathology confirmed infectious etiology. Another possibility was immune deficiency. But all immunological parameters like absolute neutrophil and lymphocyte counts were within normal limits and the child did not have any history of recurrent infections. Tuberculosis was considered as diagnosis as Mantoux was positive. Gene expert from lymphnode confirmed the diagnosis.

Treatment If Relevant

As the majority of necrotic lymphnodes were in abdomen, laproscopic biopsy was planned for a better yield.

Laproscopic Node With Liver Biopsy Under General Anesthesia

Suprapubic supraumbilical and left lumbar ports created. Sample of conglomerate node in mesentery was taken. Liver nodules from left lobe of liver were resected. GeneXpert sent from lymph node biopsy came positive for Mycobacterium tuberculosis sensitive to rifampicin. Child was started on ATT appropriate for weight band

Outcome And Follow-Up

- Parents were advised about contact tracing and continuing medication for six months
- Child was tolerating ATT well, and hence was discharged
- On follow-up child had 3kg weight gain over 2 months, was tolerating ATT well.

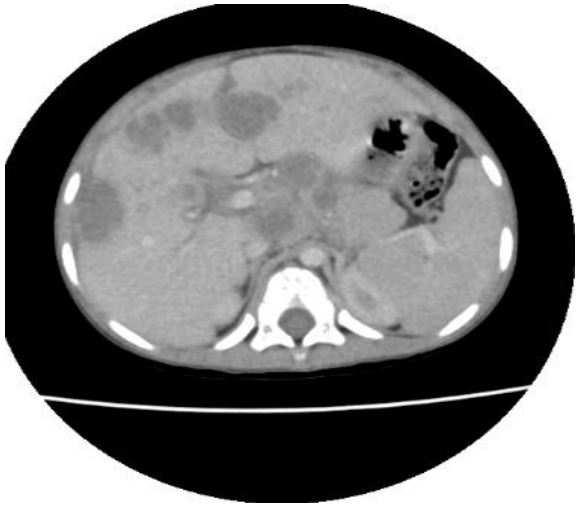

Figure 3: CECT Abdomen: Hypo enhancing lesions in both lobes of liver

Patient's Perspective

My son was not gaining weight like other children. We took him to many hospitals near our home, did so many tests, but nobody could find an exact reason. It was very stressful for us as parents,so we kept wondering what we were missing. I felt helpless seeing him eat so poorly and stay weak.

When we came to this hospital, the doctors listened to us patiently and did some new tests. Finally, they found that he had tuberculosis affecting his lungs, liver and lymphnodes. I was shocked because we never thought a small child could get TB like this. We were scared in the beginning, but the doctors explained the treatment clearly and gave us hope.

He started his medicines and gradually we saw improvement. He started eating better, playing more, and slowly gained weight. Now he looks much healthier and more active. We are very thankful for the correct diagnosis and treatment. As a mother, I feel so relieved to see him healthy and growing well again. I hope other parents don't ignore poor weight gain, and get the right help on time.

DISCUSSION

Disseminated tuberculosis in young children can be difficult to recognise, especially when symptoms are subtle or nearly absent. In young infants, the disease may present with very mild signs such as lethargy or poor growth before more typical features emerge. This has been shown in case series where infants with disseminated TB were initially asymptomatic or had non-specific complaints but were later found to have systemic TB after detailed evaluation and follow-up imaging and microbiology. [1]

This aligns with our case where the toddler had minimal clinical signs, reminding clinicians that systemic spread can occur without prominent respiratory symptoms.

Reports also exist of disseminated TB in children who were otherwise thought to be healthy and immunocompetent. In a recent case of a 15-year-old male with non-specific symptoms, the diagnosis was delayed because early clinical signs were subtle. This case demonstrates that even in patients without obvious immune compromise, disseminated TB can appear with mild, non-specific features before progression. [2] Like in our case, the lack of pronounced symptoms does not exclude extensive disease.

Another relevant example is congenital and neonatal disseminated TB, where newborns exhibited fever and systemic involvement early in life, but diagnosis was initially confused with sepsis-like syndromes. These cases showed that disseminated TB in very young children can mimic other common illnesses and may not be suspected until specific investigations such as GeneXpert or imaging confirm TB. [3] These reports emphasise the importance of high clinical suspicion and appropriate diagnostic testing in toddlers with unexplained systemic signs, even if they seem mild.

Additionally, rare reports of disseminated mycobacterial disease beyond Mycobacterium tuberculosis — such as disseminated BCG infection in infants with underlying immunodeficiencies — underline how systemic mycobacterial spread can present subtly and evolve over time. [4] Although our patient is not reported to have immunodeficiency, the existence of such cases reinforces the need to consider disseminated mycobacterial infection in a broad differential diagnosis when systemic symptoms persist.

Diagnosing TB in toddlers requires a high index of suspicion because conventional tests like sputum collection are difficult in this age group, and bacteriological confirmation is often hard due to the paucibacillary nature of childhood TB. [5][6] Young children with exposed household contacts or with unexplained fevers, poor growth, or hepatosplenomegaly should be evaluated with gastric aspirates, tuberculin skin tests (TST), interferon-gamma release assays (IGRA), and chest imaging. [6]

Timely recognition and treatment are essential for good outcomes in disseminated TB. Standard anti-tuberculosis therapy (ATT) regimens, adjusted for age and weight, are effective when started early, and adjunctive care can address complications such as meningitis or organ dysfunction. [7] Early contact tracing, preventive therapy after exposure, and BCG vaccination remain important tools in reducing the risk of severe TB in young children. [8]

Learning Points/Take Home Messages 3-5 Bullet Points

- TB exists on a clinical spectrum
- Asymptomatic and subclinical TB are underdiagnosed
- Children are particularly vulnerable to disseminated and can rarely presents non-specifically, making diagnosis difficult. Hence a child with poor weight gain should also raise a suspicion of tuberculosis
- Establishing standardized diagnostic criteria is essential for effective identification and treatment.
- A shift in public health focus is needed to eliminate TB, diagnostic and treatment efforts must extend beyond symptomatic individuals.

During the preparation of this work the author(s) used CHATGPT in order to CORRECT GRAMMATICAL ERRORS. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the published article.

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