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Original Research Paper

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DISSEMINATED TUBERCULOSIS-A MULTIFACETED DIAGNOSTIC DILEMMA: A CASE REPORT

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ABSTRACT

Background: Disseminated tuberculosis is a disease caused by the dissemination of mycobacterium tuberculosis via lymphatic and hematogenous routes. The clinical manifestation in younger children is different as compared to adults. therefore causing diagnostic dilemmas for physicians **Clinical Description:** A 3-year-old child presenting with symptoms of chronic fever, cough, and loss of weight, with a history of admission with neurological complaints in the past requiring a prolonged hospital stay. The child was investigated on lines of tuberculosis as the child had a significant contact history and features suggesting respiratory and neurological involvement. **Management & Outcome:** Tuberculosis was microbiologically confirmed and therefore antitubercular therapy was initiated after which the child improved considerably well. **Conclusion:** Thus reaffirming that tuberculosis may be considered one of the differentials in any kind of clinical presentation, especially in the pediatric age group.

KEYWORDS : Disseminated tuberculosis, Antitubercular drugs, Tuberculoma

INTRODUCTION:

Disseminated Tuberculosis is an infection caused by mycobacterium tuberculosis in which the infection spreads from a focus to other parts of the body through the blood or the lymphatic system. The disease manifests substantially differently in children as compared to adults. Therefore children aged less than 4 years have a higher susceptibility to contact with the disease which manifests itself in a disseminated manner.

The radiographic and clinical manifestations are different in children as compared to adults, and are often confused with cases of bacterial pneumonia. Disseminated tuberculosis may have an array of presentations clinically and may pose diagnostic dilemmas. Here we will be presenting a case of a 3-year-old girl, immunized for age presenting with chronic fever, cough, and decreased appetite for the past 2 months, with a positive history of contact with tuberculosis; past history was significant as there was a history of admission in past one month with history of fever, seizures and decreased urine output treated as uraemic encephalopathy. The child was found to have a history of contact with tuberculosis for the past year but had not received any form of preventive therapy. On investigations, the child was found to have microbiologically confirmed tuberculosis with dissemination in the lungs and brain and was started on an Antitubercular regimen. The child improved post-initiation of therapy.

Clinical Description:

A 3-year-old girl, immunized for age presented with chronic fever, cough, and significant weight loss for 2 months, with a positive history of contact with tuberculosis. There was a significant past history in which the child was admitted with complaints of high-grade fever for 20 days, seizures for 5 days, decreased urine output for 5 days, and altered sensorium for 3 days, 2 months back for which the child was admitted in a tertiary health center. On further evaluation and investigation in the previous admission, the child was diagnosed with acute kidney injury with dengue serology positive, with uremic encephalopathy and left diaphragmatic palsy. She was discharged after a prolonged hospital stay. At discharge Physiotherapy, Antiepileptic drugs, and multivitamins were advised at discharge. However, the symptoms of fever persisted and the child presented with the above complaints. On examination was found to have pallor, clubbing grade II in all digits, severe wasting with bilateral vesicular breath sounds with prolonged expiration with signs of meningeal irritation. The possibility of disseminated tuberculosis involving the Central Nervous System and the respiratory system was kept.

Management and Outcome:

The child had respiratory distress at presentation for which appropriate supportive therapy was initiated in form of continuous positive airway pressure (CPAP). Investigations were done on lines of tuberculosis Gastric Lavage for GeneXpert was positive and Rifampicin sensitive. CXR was suggestive of military nodules. An ophthalmology review was done to rule out papilloedema which revealed grade I papilloedema in the left eye with healed choroidal granuloma. Tubercular. An MRI of the brain and spinal cord was done which showed multiple ring-enhancing lesions but no meningeal exudates. Therefore on basis of neurological and respiratory involvement child was initiated on ATT with steroids as per protocol after which the child improved.

DISCUSSION:

Disseminated tuberculosis is a diagnostic challenge as it can masquerade as any symptom complex at presentation. As in the above case, the prolonged fever could be attributed to viral, bacterial, or any other causative organism as was the case in the previous admission where tuberculosis could not have been kept as a possibility given an acute presentation and quick response to the then therapy. However as the symptoms were persistent other possibilities had to be thought of, which directed toward disseminated tuberculosis. The latter was then microbiologically confirmed in CBNAAT (Cartridge-based nucleic acid amplification test). The positive response to therapy and improvement after therapy was satisfactorily achieved. The child is under follow-up and has improved post-treatment.

CONCLUSION:

The above case describes the importance of considering disseminated tuberculosis as a differential diagnosis in cases of multiorgan involvement in the pediatric age group. The case presented with neurological manifestation initially followed by respiratory involvement which was gradually progressive. Given the positive history of contact, the possibility of tuberculosis could be co-related well. The microbiological confirmation and neurological imaging were helpful, also simple procedures such as fundus examination should also be considered. We would also emphasize the importance of preventive therapy when available to prevent the dissemination considering the susceptibility to infection in children

Lessons learnt

- Children can present with clinical symptoms which differ from adults and progress rapidly.
- Neurological symptoms may be an initial presentation in the pediatric age group followed by respiratory involvement.
- In symptoms not responding to normal antibiotic regimens, prolonged persistence of symptoms of tuberculosis should be kept as a differential

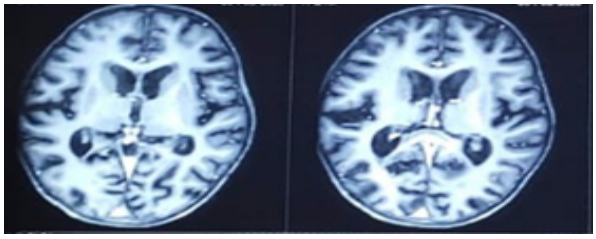

Fig 1: multiple tuberculomas on MRI (magnetic resonance imaging)

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