EJPMR, 2025, 12(11), 81-83 **Case Study** **Impact Factor 7.065**

EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.ejpmr.com

ISSN (O): 2394-3211
ISSN (P): 3051-2573
Coden USA: EJPMAG

CONGENITAL TUBERCULOSIS IN A NEONATE PRESENTING AS SEPSIS: A CASE REPORT FROM HIMACHAL PRADESH

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DOI: https://doi.org/10.5281/zenodo.17471084

How to cite this Article: Dr. Shagun Kaushal*, Dr. Jatin Chauhan. (2025). Congenital Tuberculosis In A Neonate Presenting As Sepsis: A Case Report From Himachal Pradesh. European Journal of Pharmaceutical and Medical Research, 12(11), 81–83.

Article Received on 02/10/2025 **Article Revised on 23/10/2025** **Article Published on 01/11/2025**

ABSTRACT

Congenital tuberculosis (CTB) is a rare yet severe condition that carries a high risk of mortality. It should be considered in newborns presenting with sepsis, particularly if they do not improve with broad-spectrum antibiotics. We report a case of a 26-day-old full-term female neonate from India who showed symptoms of fever, respiratory distress, and abdominal issues. Despite receiving antibiotics and supportive care, her condition failed to improve, leading to further investigation for CTB. Imaging revealed widespread lesions in the lungs, liver, and spleen, along with abdominal lymphadenopathy. A Genexpert CB-NAAT test on a tracheal aspirate confirmed the presence of Mycobacterium tuberculosis (MTB) DNA. Fortunately, the neonate responded positively to antitubercular therapy (ATT). Despite thorough investigations, including evaluations of close contacts such as the mother, we could not determine the source of the infection. We conclude that CTB should be considered in neonates with sepsis who do not adequately respond to antimicrobial treatment, especially in regions where tuberculosis is prevalent. Diagnostic methods should include gastric aspirate samples for MTB DNA detection through PCR and a comprehensive assessment of the mother.

CASE DESCRIPTION

A 26-day-old female neonate, exclusively breastfed, was brought to the Pediatric Emergency Department with a three-day history of fever, respiratory distress, refusal to feed, and abdominal distension. She was born in a hospital via full-term vaginal delivery, cried immediately after birth, weighed 3000 g, and was discharged the following day. At birth, she received the anti-hepatitis B and BCG vaccines. On examination, the neonate appeared lethargic and was in respiratory distress, with a respiratory rate of 68 breaths per minute and an SpO2 of 82% on room air. The systemic examination showed diffuse lung crepitations, a tympanic abdomen, and hepatosplenomegaly. A presumptive diagnosis of sepsis was made, and broad-spectrum antibiotics were initiated, along with supportive care, including oxygen therapy.

She required increasing respiratory support including intubation and assisted ventilation.

Normal hemoglobin (15g/dl), Normal TLC (10X109/L), Normal platelet count (2.73lacs), with elevated CRP (46mg/L) with raised ferritin >2000 with normal LFTs and RFTs and Blood culture suggestive of E.coli. CSF examination was suggestive of 18 cells predominantly lymphocytes. Gastric lavage was sent for CBNAAT and was negative. CXRAY s/o B/L opaque lesions. (Fig.1) CT Lungs shows multiple nodular diffusely scattered soft tissue lesions.(Fig.2) Abdominal ultrasonography revealed hepatosplenomegaly, heterogeneous echotexture, and multiple diffuse hypoechoic lesions, Urine as well as serology testing for CMV, Rubella, Toxoplasma and Herpes Simples was reported negative. Patient's clinical status was not improving even after antibiotic treatment and was deteriorating. However, due to strong suspicion of tuberculosis Tracheal aspiratewas sent for Genexpert CBNAAT and MTB was detected which was Rifampicin sensitive. The Sample was sent for LPA(Line Probe Assay) and was Isoniazid sensitive.

To determine the source of infection for the index case, the mother underwent a comprehensive evaluation, but all her test results, including chest X-rays and ultrasounds, came back normal. All the contacts

including father and siblings were screened and they had negative cxray, negative tuberculin sensitivity test.

Finally the patient was started on ATT according to National Tuberculosis Elimination Program of government.[1] Infant made good recovery, although developed atelectatic changes. On follow up child is thriving well.

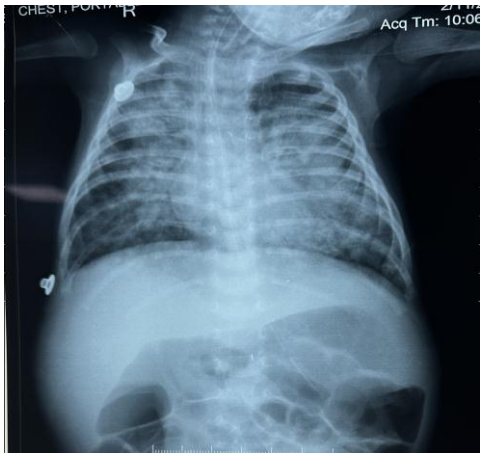

Fig.1

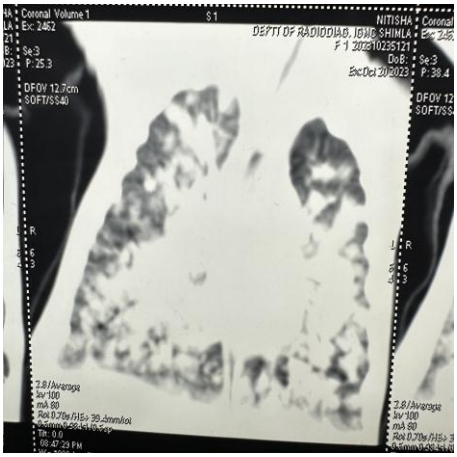

Fig.2

DISCUSSION

Tuberculosis (TB) remains as one of the deadliest communicable diseases accounted for 9 million infections in 2013. Although it is more common in man than woman, an estimated 510,000 women died as a result of TB in 2013.[6] Perinatal TB refers to an infection with MT that occurs in utero, at birth, or during the early newborn period.[4] In 1994, Cantwell and collaborators, defined the diagnostic criteria of "congenital TB". These criteria required at least one of the following: onset of symptoms in the first week of life, a primary liver lesion or a caseous liver granuloma, tuberculous infection of the placenta or of the maternal genital tract.[2]

Congenital TB is rare and can be easily misdiagnosed. Early diagnosis is critical but challenging because of nonspecific symptoms. Congenital TB has rarely been reported, with only 358 cases reported in the literature up to 1995 and another 110 cases reported between 1996 and 2009.[4] Congenital TB can be transmitted during the intrauterine period or during birth. The transmission of congenital TB can be transplacental, where the primary complex is in the liver, or through the aspiration of the infected amniotic fluid or infected material, where the primary complex is in the lung or gut.[2]

Clinical manifestations include hepatosplenomegaly (65-100 %), respiratory distress (70 %), fever (50-100 %), lymphadenopathy (38 %), poor weight gain, irritability and lethargy (20-40 %).[3]

TB should be considered in all cases of infants presenting with progressive pneumonia and poor response to conventional antibiotic treatment. Congenital TB is treatable if diagnosed and treated early. In areas where it is endemic, it should be taken into consideration, even if a neonate's only symptom is fever. Forty-three percent of the mothers had no clinical manifestations of TB.[4]

Our case presents a rare instance of perinatal tuberculosis, with symptoms emerging at 26 days old. This aligns with the typical onset age, which ranges from 14 to 28 days.[2]

Diagnosing congenital tuberculosis early can be challenging. It should be suspected in infants under the following conditions: (i) experiencing respiratory distress, hepatosplenomegaly, and fever within the first three months after birth; (ii) when symptoms do not improve despite several rounds of antibiotic treatment and after ruling out congenital viral infections; (iii) if chest imaging shows signs of miliary tuberculosis after four weeks of life.[5] Screening the source is crucial; however, we were unable to detect any latent or active MTB infection in the mother. In a review of 32 congenital tuberculosis cases, 24 mothers were also asymptomatic.[5]

Early diagnosis is critical but challenging because of nonspecific symptoms.[4] Clinicians need to be aware of the symptoms, as prompt detection and treatment can prevent fatalities.

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