



Congenital Tuberculosis -A Rare Form of Tuberculosis

Authors

Dr Garima Biyani, Dr Syed M Azad, Dr Hriday De, Dr Rohit Kapoor

Post Graduate Trainee, ICH, Kolkata

Email: garimabiyani04@gmail.com

ABSTRACT

Congenital tuberculosis is a rare but fatal condition if left untreated. Considering the high incidence of maternal TB, cases of congenital TB have been largely under-reported. This may be because TB in the neonate more often has nonspecific or unusual presentations and their mothers are seldom symptomatic. In the absence of an associated history of maternal TB, it is difficult to diagnose clinically and commence timely treatment. This is the case report of infant with congenital tuberculosis with secondary bacterial infection which is diagnosed very early at the age of 1 month and treated accordingly with ATD and antibiotics. Our case also highlights the importance of taking a detailed history from patients.

INTRODUCTION

Congenital tuberculosis is a rare but fatal condition if left untreated. Congenital tuberculosis is defined as the tuberculosis infection developing as a result of the encounter between the infant and *Mycobacterium tuberculosis* bacilli during the intrauterine period or during normal birth.

The diagnosis of congenital tuberculosis (TB) is often difficult as clinical signs are nonspecific. The maternal history of TB therefore remains an important tool in the diagnosis of congenital TB. In this case report, we present a patient with congenital TB, whose diagnosis was made very early because the mother was symptomatic and there was no delay in eliciting a family history of TB. This highlights the importance of obtaining a detailed history on admission. In the absence of an associated history of maternal TB, it is difficult to diagnose clinically and commence timely treatment.

Considering the high incidence of maternal TB, cases of congenital TB have been largely under-reported.¹ The rarity of acquisition of congenital tuberculosis, delay in diagnosis and association with high mortality rate makes this case unusual.

CASE REPORT

A 30 days old female baby had presented with fever with mild respiratory distress for 2 wks with no other complaints of abdominal distension, poor feeding, vomiting and convulsion. She had received multiple antibiotics from outside but there was no improvement. The baby was febrile, there was mild pallor. There was b/l crepitations on both the lungs with subcostal suction and there was massive hepatosplenomegaly.

Her mother had intermittent fever in her last 2 months of pregnancy, but she never consulted with any physician otherwise birth history was uneventful. Though she is separated from her

mother postnatally due to extreme sick condition of mother (continuous fever, malaise, loss of appetite)

Keeping in mind of sepsis we sent the routine investigations and started inj Cefotaxim and Ampicillin-Cloxacillin. Initial investigation showed Hb-9.4 , WBC-37900, N47L52, Platelet-5,65,000, CRP-117. Bactec and Urine c/s- no growth, CSF study-normal, Chest X ray- bilateral patchy opacities (figure 1).

She was not showing any signs of improvement. We also had her mother's chest X ray done which showed bilateral military mottling (figure 2). She was advised HRCT thorax which showed features of military tuberculosis and was started on Anti Tubercular Drugs (ATD) by general physician. Then, we started working up for tuberculosis in baby. Gastric aspirate for AFB (3 consecutive days)- 1st and 2nd day- negative and 3rd day- 6 AFB found per hpf, Gene Xpert revealed RIFAMPICIN sensitive TUBERCULOSIS.

We started ATD after 5 days of admission and inj Cefotaxim and Ampicillin-Cloxacillin were stopped after giving total 7 days. Even after 1 wk of starting of ATD, fever was persisting and baby had developed vomiting and loss of appetite. WBC count and CRP were also increased. But she gradually showed improvement and fever subsided after 2 weeks of starting of ATD. We were planning for discharge of the baby. Then contrary to our expectations, baby again had fever associated with rigor. Her chest X ray deteriorated showing features of aspiration. WBC count and CRP were also increased. Inj Meropenem and Fluconazole were added empirically. BACTEC revealed the growth of KLEBSIELLA PNEUMONIAE sensitive to Colistin. So, iv Colistin was given for 14 days in conjunction with Meropenem. Clinically, she got improved, her feed and weight had increased , though her chest X ray was persistently same.

But after 1 month of starting of ATD, she had developed jaundice. LFT was sent which showed total bilirubin-3.9 with conjugated-3.2 mg/dl. We followed the IAP protocols: Rifampicin, Isoniazid

and Pyrizinamide were stopped, im Streptomycin was added and Ethambutol was being continued. After 7 days, we again sent bilirubin which showed declining trend. So, Rifampicin was added. Within 1 week, Isoniazid and Pyrizinamide were also added..Chest X ray was also repeated which started clearing. (figure 3)

Patient was discharged and she was followed up in OPD. After 3 months, her chest X ray showed clearing of b/l lung fields.



Figure 1

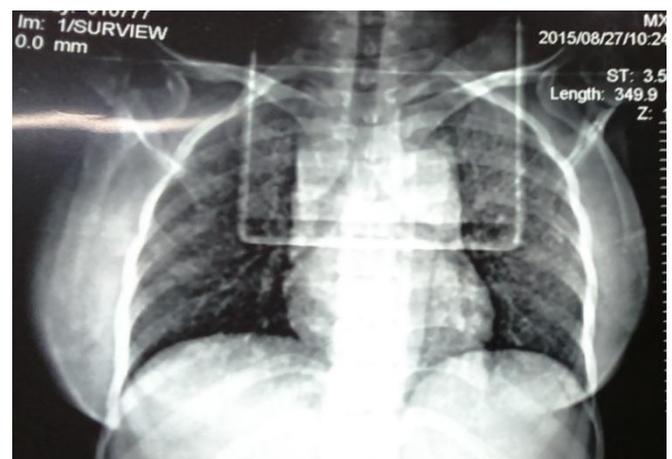


Figure 2



Figure 3

DISCUSSION

Transmission of TB to the fetus can be either hematological (transplacental) or by aspiration and/or ingestion of infected amniotic fluid (*in utero* or intrapartum).² Diagnosis of congenital TB is suspected in an infant with signs suggestive of congenital TB and a maternal history of TB and/or whose mother shows signs suggestive of TB. However, up to 60 to 70% of mothers are asymptomatic.^{2, 3} The clinical manifestations of this disease in the neonates are often nonspecific.^{2,3,4}

The diagnosis of congenital TB is based on Cantwell's revision of Beitzki's criteria, which include the presence of primary lesion in the first week of life, primary complex in the liver and maternal genital tract or placental TB and exclusion of postnatal transmission after contact investigation.² Singh *et al.*⁵ reported laboratory and clinical findings that may suggest congenital TB, which include a newborn from a TB endemic area with unresponsive worsening pneumonia; a mother with TB and a baby with nonspecific symptoms and the presence of hepatosplenomegaly and fever. Our case, from a TB endemic region, having an unresponsive worsening pneumonia associated with hepatomegaly, with a positive history of TB in mother meets the above criteria. Our case also highlights the importance of taking a detailed history from patients. Even in

the absence of a positive maternal history, TB should not be excluded in these infants.

Signs and symptoms of congenital TB appear after the first 3 weeks of life at a median age of 28 days (range: 1 to 84 days).² The common pre-diagnosis signs are fever(100%), failure to gain weight (100%), respiratory distress (77%) and hepatic and/or splenic enlargement (60%).^{2,3,4,6} . Other symptoms of congenital tuberculosis are varied and non-specific.^{8,9} Lymphadenopathy (38%), abdominal distention (77.8%), lethargy, papular skin lesions(14%), irritability (21%) and ear discharge (21%) are other signs. Nasal discharge, vomiting, apnoea, cyanosis and seizures (10%) may be seen immediately after birth.^{8,9} However, none of them is pathognomonic of TB.

In developing countries, the Mantoux test is positive in about 30–35% of children with TB, but it is usually negative in neonates <6 weeks of age and can remain unreactive even until 6 months of age.⁵⁻⁸ Gastric or tracheal aspirates are positive for TB in 80% of cases.^{2,6} Liver biopsy can have a sensitivity of 100%.⁶ The neonatal mortality from congenital TB is 10 to 50%.^{2,3,6} Infants who present after 4 weeks of age have a 77% survival rate compared with 44% survival in those who present before 4 weeks.⁶

Despite TB being a sizeable health problem in India, including in pregnant women, up to 2012, only about 25 cases of congenital TB had been reported so far, the first case having been reported in 2002.¹⁰⁻²² Despite having features suggestive of congenital TB, such infants immediately are often labelled as septicaemic or as having a respiratory infection and the true diagnosis is delayed.

The diagnosis of perinatal TB requires a high degree of suspicion and thorough evaluation of both mother and infant is necessary to establish the diagnosis.

REFERENCES

1. Connolly M, Nunn P. Women and tuberculosis. *World Health Stat Q.* 1996;49:115–19.

2. Cantwell MF, Sehab ZM, Costello AM, Sands L, Green WF, Ewing EP et al. Congenital tuberculosis. *N Engl J Med* 1994; 330:1051-1054. | [Article](#) | [PubMed](#) | [ChemPort](#) |
3. Hassan G, Qureshi W, Kadri SM. Congenital tuberculosis: mini review. *JK Sci* 2006; 8: 193–194.
4. Adhikari M, Pillay T, Pillay DG. Tuberculosis in the newborn: an emerging disease. *Pediatr Infect Dis J* 1997;16: 1108-1112. | [Article](#) | [PubMed](#) | [ChemPort](#) |
5. Singh M, Kothur K, Dayal D, Kusuma S. Perinatal tuberculosis: a case series. *J Trop Pediatr* 2007; 53: 135–138. | [Article](#) | [PubMed](#) |
6. Hageman J, Shulman S, Schreiber M, Luck S, Yogev R. Congenital tuberculosis: critical reappraisal of clinical findings and diagnostic procedures. *Pediatrics* 1980; 66: 980–984. | [PubMed](#) | [ChemPort](#) |
7. Bate TW, Sinclair RE, Robinson MJ. Neonatal tuberculosis. *Arch Dis Child*. 1986;61:512–14
8. Vijayasekaran D, Kumar RA, Gowrishankar NC, Nedunchelian K, Sethuraman S. Mantoux and contact positivity in tuberculosis. *Indian J Pediatr*. 2006;73:989–93.
9. Smith KC. Congenital tuberculosis: a rare manifestation of a common infection. *Current Opin Infec Dis*. 2002;15:269–7
10. Parakh A, Saxena R, Thapa R, Sethi GR, Jain S. Perinatal tuberculosis: four cases and use of bronchoalveolar lavage. *Ann Trop Paediatr*. 2011;31:75–80.
11. Balasubramanian S, Shivram R, Padmasani LN, Nagaraju. Congenital tuberculosis. *Indian J Pediatr*. 1999; 66:148–50.
12. Thapa R, Mallick D, Biswas B. Perinatal malaria and tuberculosis co-infection: a case report. *Int J Infect Dis*. 2010;14:e254–6.
13. Wanjari K, Mathur M, Baradkar VP, Kumar S. Congenital tuberculosis with candidal sepsis in a neonate. *Indian J Pathol Microbiol*. 2008;51:289–91.
14. Das A, Arora J, Rana T, Porwal C, Kaushik A, Gaur G, et al. Congenital tuberculosis: the value of laboratory investigations in diagnosis. *Ann Trop Paediatr*. 2008;28:137–41.
15. Bhat RY, Rao A, Altaf, Prakashini K. An evolved diagnosis of congenital tuberculosis in a very low birth weight premature neonate. *Int J Tuberc Lung Dis*. 2008;12:344–5.
16. Premkumar M, Anumakonda V, Cormican L, Ruiz G, Greenough A. Feeding intolerance due to congenital tuberculosis in a prematurely born infant. *Eur J Pediatr*. 2008;167:955–6.
17. Singh M, Kothur K, Dayal D, Kusuma S. Perinatal tuberculosis a case series. *J Trop Pediatr*. 2007;53:135–8.
18. Surve TY, Malkani M, Mhatre A, Samdani VP. Congenital TB associated with asymptomatic maternal endometrial TB. *Trop Doct*. 2006;36:59–61.
19. Kumar R, Gupta N, Sabharwal A, Shalini. Congenital tuberculosis. *Indian J Pediatr*. 2005;72:631–3.
20. Grover SB, Pati NK, Mehta R, Mahajan H. Congenital spine tuberculosis: early diagnosis by imaging studies. *Am J Perinatol*. 2003;20:147–52.
21. Ray M, Dixit A, Vaipai K, Singhi PD. Congenital tuberculosis. *Indian Pediatr*. 2002;39:1167–8.
22. Pal P, Ghosh A. Congenital tuberculosis: late manifestation of the maternal infection. *Indian J Pediatr*. 2008;75:516–18.