

Congenital tuberculosis with multisystem involvement

Arohi Gupta¹, Mala Kumar², SN. Singh², Shalini Tripathi³

From ¹Senior Resident, ²Professor, ³Associate Professor, Department of Paediatrics, King George's Medical University, Lucknow, Uttar Pradesh, India

Correspondence to: Dr. Arohi Gupta, King George's Medical University, Lucknow, H No. A 10, Sandesh Nagar, Haridwar, Uttarakhand, India. E-mail: arohirimjhim@gmail.com

Received - 29 December 2018

Initial Review - 27 January 2019

Accepted - 10 April 2019

ABSTRACT

Congenital tuberculosis is an uncommon condition, but in a country like India, where largest tuberculosis burden is found, there should be an eye on early diagnosis and management of this condition so as to prevent the devastating consequences of this disease considering the absence of specific pathogenic signs and symptoms. Here, we present a case of congenital tuberculosis in a newborn who was admitted on the 17th day after birth with the complaint of difficulty in breathing and lethargy for 3 days. On observing the antenatal history, it was found that mother after conception was diagnosed with pulmonary tuberculosis and was inadequately treated. The clinical indexes included no increase in body weight, hepatosplenomegaly, lethargy, and emaciated appearance. The treatment was initiated with antibiotics in intravenous form along with 4-drug antitubercular treatment (ATT). The 4-drug ATT was stopped after 1 week due to negative outcome in the tubercular screening, which leads to respiratory complications. The 4-drug ATT regimen was started again after a week on clinical basis which resulted in significant improvement within a few days. Hence, the present case presents a perspective that congenital tuberculosis can be considered in a newborn when mother has a history of tuberculosis before or during pregnancy.

Key words: *Congenital, Empyema, Newborn, Tuberculosis*

Tuberculosis is a serious health issue in India. Congenital tuberculosis may occur as a result of maternal tuberculosis when it encompasses the placenta or genital tract. There might be cases where mothers are susceptible to tuberculosis pleural effusions, meningitis, or disseminated disease, but they are infrequently diagnosed in the pregnancy, leading to [1-3] an ineffective treatment most of the times. As there are no pathogenic signs or symptoms for congenital tuberculosis, the initial diagnosis and management are required to prevent the devastating consequences [1,4].

Clinical indicators may be lethargy, poor feeding, failure to thrive, cough, respiratory distress, and seizures. Examination discloses hepatosplenomegaly (100%) or abdominal distension (77.8%) [5]. The treatment consists of 4-drug antitubercular treatment (ATT) regimen [6]. Tubercular screening should be done for all family members in close contact with the patient. Mother should also be screened for HIV.

CASE REPORT

A 17-day newborn was admitted with the complaint of difficulty in breathing and lethargy for 3 days. On examination, the baby was tachypnoeic with decreased air entry on the left side of chest and coarse crepitations bilaterally. The baby had hepatosplenomegaly with a liver of 4 cm BCM and a spleen of 1 cm BCM. The baby was lethargic and the sucking ability was

also meager. The antenatal history showed that the baby had tubercular contact with the mother as she was diagnosed with pulmonary tuberculosis after conception. She took four drugs ATT for the same but discontinued the treatment after 2 months and the compliance was poor.

On hospital admission, the baby was investigated thoroughly. The chest X-ray was suggestive of left-sided hemiopacity with blunt costophrenic angle, diagnostic of pleural effusion (Fig. 1). A diagnostic pleural tap was done and purulent fluid was aspirated; sepsis screen was positive. Blood culture was suggestive of *Staphylococcus aureus*; hence, sensitive antibiotics were started. The USG thorax was suggestive of 30 ml pleural collection on the left side with dense echoes. The pleural fluid routine examination was exudative in nature and pus culture was sterile. We also did a tubercular workup in the form of three consecutive early morning gastric aspirates for acid-fast bacilli (AFB) and gene expert on gastric aspirate as well as pleural fluid. The tubercular workup came out to be negative. HIV test was non-reactive and TORCH titer of the mother and baby was also negative. CSF examination was done and was suggestive of meningitis. Cytology was lymphocytic and protein was high with low sugar.

Since the respiratory distress was significant and the effusion was purulent, so intercostal tube drainage was done in the fifth intercostal space with an underwater seal, on the day of admission. The baby initially was treated with intravenous antibiotics covering *S. aureus* (Amoxclav and amikacin). In the view of

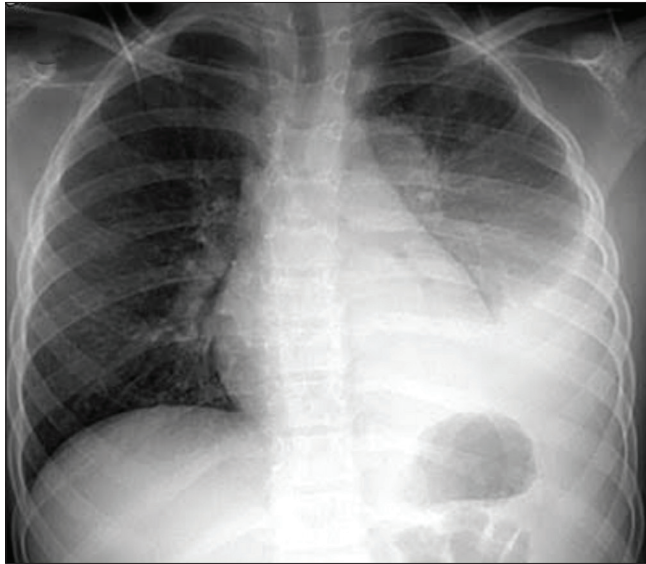


Figure 1: Chest X-ray was suggestive of the left-sided hemiopacity with blunt costophrenic angle, diagnostic of pleural effusion

tubercular contact, ATT was started but was stopped after 1 week when the tubercular workup came out to be negative. Following it, baby's general condition deteriorated and his respiratory distress worsened. Furthermore, the baby was not gaining weight, had a significant hepatosplenomegaly, and was lethargic; hence, 4-drug ATT was restarted on the basis on his clinical presentation. It resulted in remarkable improvement over a period of 2 weeks. The pleural collection became minimal after 3 weeks; the baby started gaining weight and accepting feeds.

DISCUSSION

The present case report highlights the importance of considering congenital tuberculosis through examination and investigation of a newborn with such clinical features and maternal tubercular contact history. The transmission of AFB during pregnancy by hematogenous route may occur but frequently through aspiration of amniotic fluid through placenta or umbilical vessels from a mother with primary tuberculosis. This is known as congenital tuberculosis [7]. Furthermore, it may be acquired shortly after birth and may lead to serious complications [8].

Cantwell *et al.* described the median age of presentation of congenital tuberculosis as being 24 days (range: 1–84 days) [9]. Our case had pleural effusion, difficulty in breathing, and failure to thrive failing to respond to conventional treatment. Early onset and multisystemic involvement reinforced the diagnosis and an important clue was the positive tubercular contact history with the mother during the antenatal period. The most frequent signs are hepatosplenomegaly and respiratory distress [10]. Hageman *et al.* showed that 50% of infants with congenital tuberculosis presented with miliary pattern of pulmonary involvement, but in our case, the patient had left-sided pleural effusion.

Laboratory investigations include the analysis of AFB, gene expert, and biopsies of specimens such as placenta, liver, lymph nodes, and mycobacterial culture. PPD is initially negative but converts to positive result a month later [4]. AFB analysis is rarely positive. The treatment consists of 3–4-drug ATT preferably for sensitive organisms followed by isoniazid and rifampicin for another 6–9 months.

CONCLUSION

A Rare case of congenital tuberculosis in a neonate with dissemination leading to pleural effusion, failure to thrive, hepatomegaly and tubercular meningitis. There was a positive history of tubercular contact with the mother during the antenatal period. She was diagnosed with pulmonary koch's but was not adequately treated and had a poor compliance. It is pertinent to consider congenital tuberculosis in such cases as delayed diagnosis can lead to devastating sequelae. The present case report was supported with multisystem involvement. On starting the ATT, the baby showed remarkable improvement within a few days while was unresponsive to the conventional treatment with antibiotics. Hence, it is pertinent to suspect congenital tuberculosis in such cases and to treat the disease in the newborn period itself to prevent the complications in later life.

REFERENCES

1. Centeno RS, Winter J, Bentson JR. Central nervous system tuberculosis related to pregnancy. *J Comput Tomogr* 1982;6:141-5.
2. Golditch IM. Tuberculous meningitis and pregnancy. *Am J Obstet Gynecol* 1971;110:1144-6.
3. Nemir RL, O'Hare D. Congenital tuberculosis. Review and diagnostic guidelines. *Am J Dis Child* 1985;139:284-7.
4. Bahera D. *Pulmonary Medicine*. 1st ed. New Delhi: Jaypee Brothers Publishers; 1995. p. 233-86.
5. Mittal H, Das S, Faridi MM. Management of newborn infant born to mother suffering from tuberculosis: Current recommendations and gaps in knowledge. *Indian J Med Res* 2014;140:32-9.
6. Ray M, Dixit A, Vaipei K, Singhi PD. Congenital tuberculosis. *Indian Pediatr* 2002;39:1167-8.
7. Bor O, Dinleyici EC, Koçak K, Ozkan R. Congenital tuberculosis with multisystem involvement: A case report. *Text Res J* 2007;8:36-8.
8. Stahelin-Massik J, Carrel T, Duppenhaler A, Zeilinger G, Gnehm HE. Congenital tuberculosis in a premature infant. *Swiss Med Wkly* 2002;132:598-602.
9. Cantwell MF, Shehab ZM, Costello AM, Sands L, Green WF, Ewing EJ, *et al.* Brief report: Congenital tuberculosis. *N Engl J Med* 1994;330:1051-4.
10. Berk DR, Sylvester KG. Congenital tuberculosis presenting as progressive liver dysfunction. *Pediatr Infect Dis J* 2004;23:78-80.

Funding: None; Conflict of Interest: None Stated.

How to cite this article: Gupta A, Kumar M, Singh SN, Tripathi S. Congenital tuberculosis with multisystem involvement. *Indian J Child Health*. 2019; 6(5):257-258.

Doi: 10.32677/IJCH.2019.v06.i05.017