A case of auricular tuberculosis - Is it congenital or neonatal tuberculosis?

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ABSTRACT

Tuberculosis (TB) in children is one of the leading infectious diseases worldwide and is still a serious public health problem in many countries. True congenital TB is rare; the greatest threat to the neonate is the acquisition of TB infection shortly before or after birth, which tends to progress rapidly to serious TB disease in a large proportion of untreated infants. The definition of congenital TB is so stringent that some cases of neonatal TB like the one we are reporting here lead to confusion as to whether we should report it as congenital TB or neonatal TB. We report an unusual case of localized auricular TB in a preterm neonate. Neonatal TB is rare but can be severe.

Keywords: *Tuberculosis, Congenital tuberculosis, Auricular tuberculosis.*

The World Health Organization estimates that one-third of the population is infected with tuberculosis (TB) and the infection rate increases nearly 1% per year. In developing countries and certain areas of industrialized countries, rates of TB are highest among women and men of childbearing age. TB among pregnant women is not unusual in India, but documented cases of congenital TB are rare. Diagnosis is often difficult as signs and symptoms in a neonate are non-specific. Maternal history of TB is often missed, as many of them are asymptomatic [1,2].

Latent forms of TB in pregnant women are associated with a high risk of switching to an active form that increases the risk of transmission of the infected mother to the child within the first 3 weeks of life. The demarcation between congenital and neonatal acquired neonatal forms acquired postnatally is still difficult to establish in clinical practice and is only of epidemiological interest. The clinical presentation of congenital TB is not very specific. This makes diagnosis, particularly difficult in this pediatric population [3].

CASE REPORT

We grew mycobacterium bacilli in our case and along with that we saw erosion of the bones with the lesions. Mother received incomplete course of antenatal steroids and intravenous (IV) antibiotics, in view of preterm labor. Antenatal scan had showed mild bilateral cerebral ventriculomegaly. The baby was started on CPAP at birth and received breathing support for 4 days. The baby received 5 days of IV antibiotics at birth and stopped in view of negative blood cultures. On day 34, the baby had an episode of presumed sepsis and received IV antibiotics for 7 days. The baby was discharged around corrected gestational age of 36 weeks. The baby was readmitted around 38 weeks corrected with an episode of possible sepsis/meningitis and received 3 weeks of IV antibiotics. The baby recovered uneventfully. The baby was noticed to have ear discharge at corrected age of 2 weeks. He did not respond to topical and oral antibiotics. Ear, nose, and throat opinion revealed bilateral aural polyp.

Computed tomography (CT) scan was done and showed soft tissue lesion in bilateral external and middle ear cavities with bony erosion, with minimal enhancement on postcontrast study. Hence we feel that this lesion was present for a long time to cause erosion . Biopsy and histopathology revealed caseating granuloma. ZN staining showed numerous acid-fast bacilli. Chest X-ray for the child was normal. Inflammatory markers were normal (hemoglobin 9.6, white blood cell 17,800 N 18% and L 74%, platelets 5.74 lakhs, and C-reactive protein 1.36 mg/l). Cerebrospinal fluid examination was within normal limits. HIV 1 and 2 RNA testing by polymerase chain reaction (PCR) method was normal. The baby passed hearing test by AABR. Culture of the biopsy specimen grew mycobacterium TB with sensitivity to isoniazid (INH - critical concentration 0.1 mcg/ml), rifampicin (RMP - 1 mcg/ml), ethambutol (5 mcg/ml), and streptomycin (1 mcg/ml).

Mother had negative HIV 1 and 2 by qualitative method. Mantoux and Chest X-ray were normal for parents and grandmother. The baby was treated with INH, rifampicin, pyrazinamide, and ethambutol (HRZE regimen) for 2 months, and INH and rifampicin (HR regimen) for 10 months for suspected tubercular meningitis. Halfway through baby's treatment, mother was diagnosed with pulmonary TB and was treated as per the

regimen. 9 months into the treatment, CT head showed significant healing, with partial erosion of ossicles. The baby remains well off treatment.

DISCUSSION

Congenital or neonatal TB usually present in the 2nd or 3rd week of life. They are underreported as they are hard to diagnose, criteria for congenital TB are hard as it requires isolation of bacilli in the 1st week of life and it is difficult to distinguish from other neonatal infections. In spite of difficult diagnosis, clinical suspicion and family history support diagnosis of congenital TB and prompt diagnosis avoids death in infancy period. It is not straightforward to differentiate between congenital and early postnatally acquired TB. Hence, detailed history of maternal health or infection such as notion of latent TB infection and of family contact has to be given particular consideration in the first line to support the early diagnosis of congenital TB, thus preventing death in infancy period [4]. Congenital TB is estimated at 2% in countries with high TB endemic. The mortality rate is high, nearly 50%, which is often due to delayed diagnosis followed by delayed treatment.

In our case, congenital or acquired TB could not be suspected earlier as the baby was preterm and did extremely well to be discharged home at the corrected age of 36 weeks like any other premature baby. It is the recurrent presentation with unusual features which prompted us to suspect and do biopsy and CT scan which made the diagnosis. On that basis we feel it is a congenital tuberculosis rather than acquired neonatal tuberculosis.

CONCLUSION

This case highlights the difficulties in diagnosing the congenital TB in a neonate and also probably considering other modes of investigations available now like PCR and gene testing, and should we be considering revision of criteria for congenital TB?

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