Case Report

DOI: 10.7860/JCDR/2018/31570.11283

Tubercular Retropharyngeal Abscess in Early Infancy-Rare Presentation of a Common Infection: A Case Report

Ear, Nose and Throat Section

DIVYA GUPTA[1], ISHWAR SINGH[2], GAURAV JAREDA[3], DIVYA VAID[4], PURODHA PRASAD[5]

ABSTRACT

Retropharyngeal abscesses in children are acute-infectious and non tubercular in nature. We present a rare case of tubercular retropharyngeal abscess presenting in early infancy. Patient was born to a mother who was diagnosed within four weeks of delivery with tubercular meningitis. Within six weeks of being born, the child developed fever and tubercular lymphadenopathy, possibly a manifestation of latent tubercular hematogenous infection transmitted to the child from mother in utero.

Keywords: Infants, Perinatal tuberculosis, Retropharyngeal abscess, Tuberculosis

CASE REPORT

A girl weighing 1900 grams was born vaginally at full term to a 26 years old second gravida female. No maternal illness had been recorded during pregnancy and there was no history of any Tuberculosis (TB) contact in the family or neighbourhood. The mother and the child were negative for Human Immunodeficiency Virus (HIV). One month after delivery, the mother developed 105° F temperature and altered sensorium and was diagnosed to be having tubercular meningitis after demonstration of Acid-Fast Bacilli (AFB) in cerebrospinal fluid and was started on Anti-Tubercular Therapy (ATT). Child was fully immunised for age. She started running low grade fever (100°F) and developed bilateral cervical lymphadenopathy at 45 days age and was started empirically on the basis of high suspicion of TB on 3-drug ATT comprising Isoniazid (H), Rifampicin (R) and Pyrazinamide (Z) by a private practitioner. The fever and swelling persisted but the latter became a little fluctuant. Pus aspirated from lymph node revealed no AFB but came positive for mycobacterium TB on Cartridge Based Nucleic Acid Amplification Test (CBNAAT). Contrast enhanced computed tomography of chest revealed mediastinal lymph node but no parenchymal lesion. There was no hepatosplenomegaly. The child was kept on HRZ and Ethambutol (E) and Streptomycin (S) for two months followed by one month of HRZE followed by continuation phase (HRE) of ATT. She was recuperating well and had started gaining weight but after two months of HRE (almost five months from starting of ATT), she developed noisy and difficult breathing and had to be tracheotomised in view of retropharyngeal abscess on X-ray [Table/Fig-1].

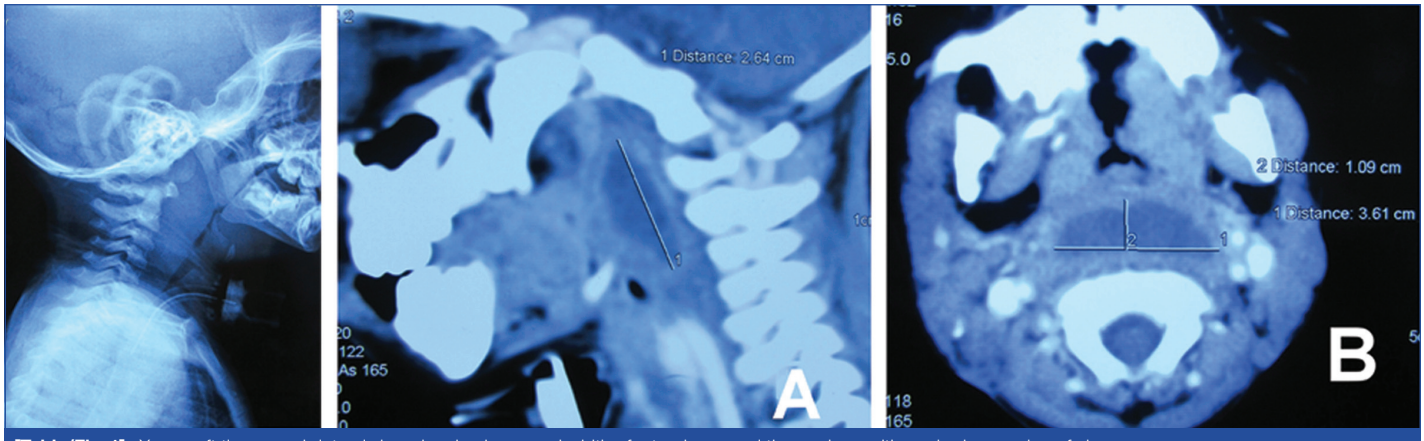
Pus was aspirated and it demonstrated AFB and was positive for TB on CBNAAT. CECT neck demonstrated hypodense collection in retropharyngeal space extending from C1-C3 vertebrae causing anterior bulge and marked narrowing of oropharyngeal airway [Table/Fig-2]. ATT was re-started from the intensive phase in view of apparently inadequate dosing previously. The pus was regularly aspirated for two months. Minerva cast was applied to externally stabilise the spine. The bulge disappeared after two months of ATT and the child has regained appetite and started gaining weight. She is currently in her fourth month of ATT (continuation phase).

DISCUSSION

The worldwide prevalence of TB has rapidly increased and the classic age distribution of TB has also seen a shift from 50s to a median age of 30 years with the result that the proportion of females in the child-bearing age with TB has seen a significant rise [1].

Approximately 900 million females worldwide are afflicted with latent mycobacterial TB infection and pregnant women are more likely to progress to an active TB than men [2]. Since most countries neither routinely screen for TB in pregnancy and nor do they report pregnant females with TB, no mention has been made on the prevalence of TB in pregnancy in WHO TB report for 2017 [3].

The term ‘congenital TB’ has gone into dormancy because of the varying controversies in its definition. It has now been replaced with ‘perinatal TB’ which refers to the TB acquired in utero, intrapartum or during the early newborn period. It is not essential to distinguish



[Table/Fig-1]: X-ray soft tissue neck-lateral view showing increased width of retropharyngeal tissue along with marked narrowing of airway.
[Table/Fig-2]: Contrast enhanced computed tomography scan (A) sagittal and (B) axial cuts of head and neck showing abscess in retropharyngeal space extending from C1-C3 vertebrae.

between the different time frames of infection acquisition since the presentation, diagnosis, management and prognosis of the disease are similar [4]. It may be difficult to differentiate symptoms of TB in newborn from other congenital or neonatal infections since most of them like TB arise in second to third week of life and present as hepatosplenomegaly, respiratory distress, fever, lymphadenopathy [5].

Tubercular bacillemia during pregnancy may infect placenta or female genital tract by hematogeneous route and can result very rarely in TB of the newborn [6]. The most common mode of spread of perinatal TB is by haematogeneous route in utero through the umbilical vein. It may also occur antenatally by ingestion of infected amniotic fluid. The intrapartum spread of TB may occur by aspiration or ingestion of amniotic fluid or direct contact with infected cervix/endometrium and postpartum, infection can be transmitted by inhalation or ingestion from an infectious source [6]. Our patient's only tuberculous contact was her mother, who did not have open disease to cause postnatal TB in the child. She manifested tubercular meningitis soon after her delivery. Possibly, the infection lay dormant in her body during pregnancy and also in the child for the first few weeks of postnatal life.

Children are at higher risk of developing active TB than adults and the risk is particularly higher in infants and those below two years of age. The risk of infants developing extrapulmonary TB is to the extent of 10-20% [7]. Tubercular lymphadenopathy has been a mode of presentation in 38% cases of congenital TB [6] and more rare is the occurrence of tubercular retropharyngeal abscess at such an early age. In the literature reviewed, our patient is the youngest child to be having the same without any adjoining spine involvement to the best of our knowledge.

Microscopy and culture are the mainstays of TB diagnosis. However, none of them has good sensitivity in paediatric microbiology laboratories because of a considerably lower bacterial load in childhood TB [8]. The newer tests based on molecular biology, mycobacterial genomics include Nucleic Acid Amplification Tests (NAATs) and Interferon Gamma Release Assays (IGRA) have higher sensitivities and specificities than conventional methods.

No evidence exists in literature regarding the activation of TB in pregnancy or puerperium. However, given the possible implications of the same in the mother and the child and the increasing prevalence of latent TB in women of child bearing age, some have suggested active screening and prophylactic treatment with isoniazid in highly TB endemic regions [4].

CONCLUSION

The relative rarity and varied non specific presentation of TB in pregnancy and infancy may pose diagnostic difficulty. Traditional methods for the laboratory diagnosis of TB are unsatisfactory, especially in children where the load of mycobacteria in samples is relatively sparse. However, advances have been made in terms of diagnostic technology and treatment recommendations that enable us to diagnose and treat TB.

REFERENCES

[1] Ormerod P. Tuberculosis in pregnancy and the puerperium. Thorax. 2001;56:494-99.
[2] Bates M, Ahmed Y, Kapata N, Maeurer M, Mwaba P, Zumla A. Perspectives on tuberculosis in pregnancy. Int J Infect Dis. 2015;32:124-27.
[3] Global tuberculosis report 2017. Geneva: World Health Organization; 2017.
[4] Whittaker E, Kampmann B. Perinatal tuberculosis: new challenges in the diagnosis and treatment of tuberculosis in infants and the newborn. Early Hum Dev. 2008;84(12):795-99.
[5] Chotpitayasunondh T, Sangtawesin V. Congenital tuberculosis. J Med Ass Thailand. 2013;86(3):S689-S695.
[6] Cantwell MF, Shehab ZM, Costello AM, Sands L, Green WF, Ewing EP, et al. Brief report: congenital tuberculosis. N Engl J Med. 1994;330(15):1051-54.
[7] Newton SM, Brent AJ, Anderson S, Whittaker E, Kampmann B. Paediatric tuberculosis. Lancet Infect Dis. 2008;8:498-510.
[8] Gray JW. Childhood tuberculosis and its early diagnosis. Clin Biochem. 2004;37:450-55.

PARTICULARS OF CONTRIBUTORS:
1. Divisional Medical Officer, Department of ENT, Northern Railway Central Hospital, Delhi, New Delhi, India.
2. Director Professor, Department of ENT, Maulana Azad Medical College, Delhi, India.
3. Junior Resident, Department of ENT, Maulana Azad Medical College, Delhi, India.
4. Junior Resident, Department of ENT, Maulana Azad Medical College, Delhi, India.
5. Junior Resident, Department of ENT, Maulana Azad Medical College, Delhi, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Divya Gupta,
66, Raj Nagar, Pitam Pura, Delhi-110034, India.
E-mail: divyagupta.leo@gmail.com

FINANCIAL OR OTHER COMPETING INTERESTS: None.

Date of Submission: **Oct 12, 2017**
Date of Peer Review: **Nov 08, 2017**
Date of Acceptance: **Dec 15, 2017**
Date of Publishing: **Mar 01, 2018**