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**Original Research Paper** 



# **PERIPARTUM MENINGEAL TUBERCULOSIS: A MATERNAL NEAR MISS**

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A 24 year old G2A1 with MCDA Twins at 35 weeks underwent Emergency LSCS for fetal distress under spinal ABSTRACT anaesthesia . On 5th postoperative day she had thrown one episode of GTCS and was diagnosed as Postpartum eclampsia and treated with Magnesium sulphate. She developed high fever spikes the next day and deasaturated. She was diagnosed to have PPCM with LVEF of 40%. She was treated with cardiotonics and braodspectrum antibiotics and ventilated for 2 days. Abdominal USG revealed mild hepatospleenomegaly with normal puerperal uterus without any free fluid. . Her cervical swab grown E.Coli and Klebsiella and was treated with Magnex and Amikacin. Her chest X-ray was suggestive of pulmonary edema. CT brain showed features of PRESS and GCS was E1V1M 4. MRI was undertaken which was reported as patchy meningeal thickening with distended transverse venous sinus .Her fever spikes did not respond to higher specific antibiotics and was planned to start empirical ATT. DTCD opinion was taken to institute ATT and her MRI review revealed focal meningeal thickening and findings were consistent with meningeal tuberculosis and hence she was started on ATT. Her fever subsided within 48 hrs. A lumbar puncture was undertaken as per the advice of Neurologist and CSF was subjected to TB PCR which was negative. She was continued on ATT under DOTS and was discharged after a month in good health and was adviced to continue Category I ATT from a nearby center.

KEYWORDS : Maternal near miss, Meningeal TB, High spiking temperature

### **INTRODUCTION:**

Diagnosis of tuberculosis with atypical presentation is a challenge. The prevalence during pregnancy and postpartum varies due to many factors and latent tuberculosis often manifests due to decrease in immune status. Mortality is high in pregnant and postpartum women compared to non-pregnant women with Tuberculosis whether it is pulmonary or extra pulmonary. Peripartum TB is to be considered as an important differential diagnosis for puerperal fever and and it was reported that CNS involvement is common (69%) in a cohort of peripartum tuberculosis1. Diagnostic delays are common and sometimes it is a maternal near miss and hence this case is reported.

CASE: A 24 year old G2 A1 was admitted through our Emergency services at 35 weeks of gestation with PROM and twins the presenting fetus in breech. She was normotensive and not anaemic. She was taken up for emergency LSCS in view of fetal distress of the second of the twin after delivery of the first twin. Her post-operative period was normal till 4 th day when she had temperature of 1020 F while she was on antibiotics . On 5th day she suddenly developed GTCS and was diagnosed as post-partum eclampsia as her BP was 180/120 mmHg and was managed as eclampsia. Her general condition deteriorated and her Glasgow coma scale was E1 V1 M4. She was tachypneic with a respiratory rate of 36/min Her SP02 was 80% and Respiratory system revealed fine crepitations and X-Ray chest P/A was reported as Pulmonary edema.(Fig 1) ECHO reported as Peripartum cardiomyopathy with Left ventricular ejection fraction of 40%. She was on ventilator for 48 hours.

CT brain showed features suggestive PRESS (Fig 2). She had continuous high spiking fever reaching 1050F inspite of higher antibiotic therapy. Investigations for Pyrexia were negative for parasites on blood peripheral smear, Widal,, Dengue, H1N1. Sputum culture was negative for pyogenic organisms and smear was negative for AFB. MRI brain reported patchy meningeal thickening with dilated transeverse sinus (Fig 3) Cervical swab culture reported klebsiella pneumonia and E.coli which were sensitive to Magnex, Amikacin and ciprofloxacin and she was treated with Magnex and amikacin for 10 days.

Lumbar puncture undertaken revealed clear acellular fluid with a glucose level of 57 mg% and chloride 124 meq/l; protein 55 mg/dl and TB PCR was negative. Her fever spikes persisted (fig 4 A) and it was decided to start ATT empirically and DTCD opinion was sought regarding the same. DTCD Physician reviewed the case with all investigations including MRI brain and a diagnosis of meningeal TB was made (Fig 3) because of meningeal thickening and ATT was instituted. The patient became afebrile within the next 48 hours (Fig 4B) and remained so later. She was given Category 1 ATT in the form of DOTs and was discharged home with advice to continue ATT for 6 months from nearby PHC.

## DISCUSSION:

Peripartum Tuberculosis forms an important differential diagnosis of postpartum fever. Latent Tuberculosis may manifest for the first time in the immediate post-partum period and there is a 10% risk of re-activation.2 Pregnancy suppresses the T - helper (Th-1) proinflammatory response which masks the symptoms. This increases the susceptibility to new infection and also reactivation of Tuberculosis occurs. After delivery, Th-1 response reverses and symptoms get exagerated3 Tuberculosis can be transmitted thorugh haematogenous route during pregnancy and infect the placenta and rarely the fetus resulting in congenital tuberculosis. Two case series of infection of placenta were reported by Cheng, VCC and collegues<sup>1</sup>

CNS is involved in 10% of Tuberculosis and it is difficult to diagnose early because of varied clinical symptoms3. The clinical symptoms include fever and headache of more than 14 days duration, vomiting, altered sensorium and focal neurological deficit. Tuberculous encephalopathy presents as convulsions, stupor, coma without signs of meningeal irritation or focal neurological deficit.4, This woman had sudden onset of high grade fever while on antibiotics and had convulsions on postpartum day 5 and could not be differentiated from eclampsia.

The most sensitive radiological finding of tubercular meningitis is meningeal enhancement (90%) which is seen in this woman. TB meningitis can damage the brain tissue due to surface exduates and also affect the vasculature of brain causing ischaemia and necrosis. The other radiological findings in CNS Tuberculosis include exudates in cysterns, sylvian fissures, gyral enhancement, hydrocephalous and tuberculoma formation4. CSF analysis can be normal in CNS tuberculosis though lymphocytes and high protein are the common findings 5 The British guidelines recommend to do Nucleicacid amplification tests (NAAT) on all suspected CNS

tuberculosis though a negative test can not rule out Tuberculosis as NAAT has a sensitivity of 56% only6. In the present case the CSF analysis was negative but the clinical features, non-responsiveness to higher antibiotics made us to suspect postpartum exacerbation of latent Tuberculosis and radiological findings were confirmatory.

If undiagnosed Tuberculosis during pregnancy results in a mortality of 30-40%7. The British infection Society guidelines for the diagnosis and treatment of tuberculosis of the central nervous system in adults and children recommend to start empirical antitubercular therapy in patients with suspected tubercular meningitis as it is strongly associated with death and is considered as an emergency.

Routine screening for latent TB during pregnancy is to be undertaken in high risk population like HIV infected women, contacts with active tuberculosis and in population of countries with high burden of Tuberculosis (> 50-60 /100000) and not recommended routinely for all. Tuberculin sensitivity test (TST) and Quanti FERON-TB Gold InTube (QIFN) test are used as screening tests in Australia and if screen positive an X ray chest with abdominal shielding after 12 weeks of pregnancy is the policy8.CDC recommends X-Ray chest with shielding in symptomatic and asymptomatic pregnant women and if positive sputum culture to be done.9. Misdiagnosed and untreated TB results in four fold increase in maternal morbidity due to increased pregnancy complications such as abortion, pre-eclampsia, PPH.10. A systematic review on Tuberculosis care for pregnant women revealed that diagnostic delays were common in pregnant women because of the atypical symptoms 11. The present case illustrates the atypical presentation of CNS tuberculosis during pregnancy.

Conclusion: Meningeal thickening may be the only finding in peripartum CNS tuberculosis and is one of the important maternal near-miss condition.



FIG 1- X-Ray Chest P/A Pulmonary Oedema





FIG -3 MRI Brain - Patchy Meningeal thickening



FIG 4A: Temperature Chart : Postpartum and Prior to ATT



FIG 4 B: Temperature Chart : Postpartum after starting ATT and up to discharge

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