Section: Obstetrics and Gynaecology

Case Series

MYCOBACTERIUM MEETS MOTHERHOOD: TURNING CHALLENGES INTO JOYOUS BIRTH – A CASE SERIES

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ABSTRACT

Tuberculosis (TB) during pregnancy poses significant risks to both maternal and foetal health, particularly in high-burden countries such as India. This case series presents four pregnant women diagnosed with different forms of TB at a tertiary care hospital. Diagnoses were confirmed through microbiological and histopathological evaluations, and each patient underwent comprehensive clinical assessments, relevant imaging studies, and close monitoring throughout pregnancy. All patients were treated with standard antitubercular therapy and received multidisciplinary care tailored to their specific clinical needs. These cases highlight the importance of timely diagnosis and coordinated care in improving outcomes for both mothers and babies. The findings also highlight the need to incorporate routine TB screening into antenatal care and follow established treatment protocols to ensure the best possible prognosis for pregnant women affected by TB.

INTRODUCTION

Tuberculosis (TB) remains a significant global health concern, with an estimated 10.6 million new cases and 1.3 million deaths reported in 2022. The disease continues to disproportionately affect low- and middle-income countries, including India.[1] Global estimates presented during an annual global conference on TB and lung diseases suggested that approximately 200 000 pregnant or postpartum women develop TB annually (151 000 during pregnancy and 49 000 in the postpartum period), mostly in the WHO African and South-East Asia Regions.[2] Pregnant women are especially vulnerable due to physiological and immunological changes during pregnancy, which can obscure typical signs such as persistent cough, fever, and sweating. This often leads to delays in diagnosis and increases the risk of complications for both mother and baby.[3] Pregnancy induces immune modulation, particularly a shift toward Th2-mediated immunity, which may increase susceptibility to EPTB (especially TB lymphadenitis, TB meningitis, or abdominal TB). Maternal TB has been linked to adverse outcomes such as preterm birth, low birth weight, intrauterine growth restriction, and perinatal mortality.[4,5] Diagnosing TB during pregnancy can be particularly difficult because its symptoms often resemble normal gestational changes. The absence of routine TB screening during antenatal care and the persistence of social stigma further contribute to underdiagnosis.[6]

To overcome TB underdiagnosis during pregnancy, routine TB screening should be integrated into antenatal care using safe diagnostic methods, and providers should be trained to recognise atypical presentations. Address stigma through community awareness and ensure confidential, supportive care pathways.[7]

While pulmonary TB is the most commonly encountered form, extrapulmonary TB, including lymph node, abdominal, and disseminated types, adds to the diagnostic complexity.[8] The World Health Organization recommends initiating first-line antitubercular therapy promptly in pregnant women, as early treatment has been shown to improve both maternal and neonatal health outcomes.[9] However, despite the availability of effective treatment regimens, challenges such as poor adherence to therapy and insufficient multidisciplinary support can compromise recovery.[10]

There is a pressing need to enhance antenatal screening practices, ensure timely diagnosis, and implement coordinated and individualised care strategies to improve outcomes for mothers and their infants in regions where TB is endemic.

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CASE PRESENTATION

We have followed up 100 TB patients during their antenatal periods out of which 95 patients have already had TB got ATT and post TB sequelae. Out of that 95 patients, 45 patients underwent LSCS for obstetric indication and postpartum period is uneventful and 36 delivered by normal vaginal delivery and 4 delivered by operative vaginal delivery and their postpartum period was uneventful. 5 extrapulmonary TB cases with active lesion got treated and their antenatal and postnatal period was described separately This case series describes five pregnant women diagnosed with tuberculosis at a tertiary care centre, the Government Kilpauk Medical College, Chennai. Data collection included patient interviews, clinical examinations, diagnostic evaluations (such as MRI, sputum AFB testing, and fine-needle aspiration cytology (FNAC), and follow-up throughout pregnancy. All cases were confirmed by microbiological and histopathological analyses. Each patient received standard first-line antitubercular therapy (ATT: HRZE regimen) and tailored multidisciplinary care. Regular antenatal and neurological assessments were performed throughout the pregnancies.

Case 1

At 12 weeks of pregnancy, a 20-year-old primigravida complained of bilateral lower limb weakness. on clinical examination, the patient had reduced sensation up to both knees and decreased muscle strength (3/5). MRI revealed spinal cord compression caused by a pre- and paravertebral abscess, along with spondylodiscitis at the D10-D12 vertebral levels. Spinal tuberculosis was diagnosed early in pregnancy and managed with physiotherapy and antitubercular therapy (ATT) using a fixed-dose combination (FDC 4-0-0). At 36 weeks of gestation, the patient, who had been on ATT for six months and was also diagnosed with gestational hypertension (GHTN), presented with leaking per vaginam. Due to severe preeclampsia (blood pressure: 160/96 mmHg) and minor cephalopelvic disproportion, an emergency lower-segment caesarean section (LSCS) was performed with the use of a prophylactic SR cannula. The patient showed significant clinical improvement within two months postpartum.

Case 2

After 36 weeks of pregnancy, a 24-year-old primigravida reported a two-day history of increasing numbness in both lower limbs. Neurological examination revealed reduced sensation and muscle strength graded at 4/5 in both legs. Magnetic resonance imaging (MRI) confirmed a diagnosis of spondylodiscitis due to tuberculosis. The patient underwent an emergency lower-segment caesarean section (LSCS) for cephalopelvic disproportion (CPD) and Pott's spine. On the third postoperative day, she developed acute weakness in both lower limbs, prompting an emergency decompressive laminectomy. ATT was initiated on postoperative day (POD) 4. Subsequently, on POD 9, the patient underwent posterior stabilisation and fixation with rods and screws at D8, D12, and L1. The patient exhibited gradual neurological recovery.

Figure 1: MRI of the spine

Case 3

A 21-year-old primigravida presented at 5 weeks of gestation with a persistent cough for 2 weeks, chronic fever, night sweats, and a poor appetite. On examination, her respiratory rate was 20 breaths per minute, temperature was 36.7 °C, and SpO_2 was 97% on room air. The patient was underweight (42 kg) and had diffuse fine crepitations throughout the lung field on auscultation. Sputum examination was positive for acid-fast bacilli (AFB), confirming pulmonary tuberculosis. The patient was initiated on ATT FDC 4-0-0, and the treatment continued for 6 months. The pregnancy progressed uneventfully, with good maternal weight gain and foetal growth. At term, she delivered a healthy 2.5 kg appropriate-for-gestational-age (AGA) baby.

Case 4

A 22-year-old primigravida at 34 weeks of gestation presented with a painless right neck (supraclavicular) swelling (5×4 cm). Fine-needle aspiration cytology (FNAC) revealed chronic granulomatous inflammation consistent with TB. Diagnosed with TB cervical lymphadenitis, patient began ATT FDC 4-0-0. The neck swelling reduced away throughout the treatment's continuing phase, and the patient gave birth at term.

Case 5

26 years old G2P1L1 at 18 weeks of gestation presented with vague abdominal pain, persistent low grade fever for 2 months. She had significant weight loss and loss of appetite. She was Mantoux test positive (17 mm induration), omental thickening and thickened bowel loops noted in USG abdomen and pelvis, MRI abdomen showed multiple mesenteric lymph nodes and omental caking. Laparoscopy was performed and multiple tubercles on peritoneum with caseating mesenteric lymph nodes were found. Peritoneal biopsy revealed caseating granulomatous inflammation confirming abdominal tuberculosis. Patient started with ATT FDC 4-0-0. Patient tolerated ATT well with improvement in appetite and

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resolution of abdominal symptoms and delivered a healthy male infant via spontaneous vaginal delivery at 38 weeks, 2.8 kg birth weight.

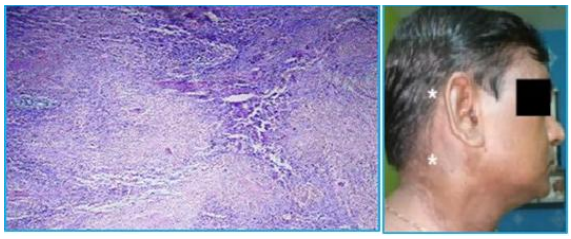

Figure 2: Cytology

DISCUSSION

Our case series illustrates the clinical and diagnostic challenges associated with tuberculosis (TB) during pregnancy. To ensure the best outcomes for both mother and child, these cases highlight the importance of early diagnosis, coordinated multidisciplinary care, and individualised treatment. The examples in this series demonstrate the different forms tuberculosis (TB) can take during pregnancy, including cervical lymph node TB, pulmonary TB, and spinal TB (Pott's spine). These findings are consistent with earlier studies reporting that extrapulmonary TB accounts for 62% of TB cases in pregnant women in India.[8,11-14]

Two patients in this series experienced neurological symptoms, including sensory disturbances and limb weakness, due to spinal tuberculosis. Early detection played a key role in their outcomes. One patient responded well to antitubercular therapy (ATT) alone and did not require surgery, while the other needed surgical intervention. Timely diagnosis of spinal TB is crucial, as it enables prompt clinical decisions and helps determine whether conservative treatment or surgery is the best course, depending on the severity and progression of the disease.[11] The early neurological improvements observed in these patients further underline the importance of early detection.

The patient with pulmonary tuberculosis experienced constitutional symptoms such as weight loss, low-grade fever, and a persistent cough. Despite these issues, patient vital signs remained stable, and patient showed a good response to medical treatment. This case underscores the importance of maintaining a high level of clinical suspicion in pregnant women with nonspecific systemic symptoms. As reported by Mathad and Gupta, pulmonary TB diagnosed and treated early in pregnancy does not appear to increase the risk of teratogenicity or maternal complications.[3]

In the fourth case, TB of the cervical lymph nodes presented as painless neck swelling without systemic symptoms. FNAC confirmed the diagnosis, and the patient improved with ATT alone, without the need for surgical intervention. This case supports existing evidence that lymph node TB can generally be managed conservatively during pregnancy, unless complicated by abscess formation or lack of treatment response.[12]

Abdominal tuberculosis (TB), particularly peritoneal TB, is a rare and often underdiagnosed condition during pregnancy due to its nonspecific symptoms like abdominal pain, fever, and weight loss—many of which can mimic normal pregnancy-related changes. In this case, a 26-year-old antenatal woman presented with persistent low-grade fever, abdominal pain, and significant weight loss during her second trimester, prompting further evaluation.

Ultrasound and MRI findings suggested ascites, omental thickening, and lymphadenopathy—features typical of abdominal TB. Laparoscopy, safely performed in the second trimester, revealed classical tubercles on the peritoneum. Histopathology confirmed the diagnosis through the presence of caseating granulomas. Early initiation of ATT led to clinical improvement and a favorable pregnancy outcome, highlighting that with timely diagnosis and a multidisciplinary approach, TB can be effectively managed during pregnancy without compromising maternal or fetal health.

All five patients received WHO-recommended first-line ATT following a comprehensive multidisciplinary evaluation and monitoring. None of the women experienced drug-related side effects, congenital anomalies or adverse neonatal outcomes. These results add to the growing body of studies suggesting that standard ATT regimens are safe for use during pregnancy when administered under coordinated care involving obstetrics, neurology, and infectious disease specialists.[13,15] Integration of TB management into routine antenatal care in these cases also facilitated consistent follow-up and enhanced adherence to treatment.

The maternal and neonatal outcomes in this series were favourable. All women delivered live newborns with appropriate birth weights and Apgar scores, and no cases of congenital TB were identified. Similar findings were noted in a systematic review by Sugarman et al., which linked early initiation of ATT with lower maternal and neonatal morbidity.[14]

Although this study included only a small number of cases, it reinforces the need for routine TB screening during antenatal care, particularly in regions with high TB prevalence. It also emphasises how crucial it is to coordinate obstetric care with neurosurgery teams, infectious disease specialists, and TB services in order to guarantee prompt and comprehensive management of TB during pregnancy.

CONCLUSION

This case series explores the diverse ways tuberculosis (TB) can present during pregnancy, based on four cases from a high-burden region in India. Two women were diagnosed with spinal TB, one with pulmonary TB, and one with cervical lymphadenitis. The diagnoses were made at various stages of pregnancy, and all patients were treated

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with standard first-line medications and received care from a multidisciplinary team. Both mothers and babies had positive outcomes. In cases of spinal TB, neurological symptoms improved with medical treatment, and surgery was performed when necessary. Pulmonary and lymph node TB responded well to medication alone. These cases underscore the need for timely diagnosis, personalized treatment, and coordinated care. In regions where TB is common, routine screening during antenatal visits is crucial to protect the health of both mother and child.

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