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RESEARCH ARTICLE
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TUBERCULOMA IN TWO POSTPARTUM PATIENTS IN A TERTIARY CARE HOSPITAL

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Abstract:
Around one quarter of the world's population has latent TB .The state of pregnancy and postpartum is a double edged sword. Tuberculoma is rarely suspected in pregnancy and peripartum, it may masquerade other conditions, like eclampsia. A state of low immunity and stress along with poor nutritional status may lead to reactivation of tuberculosis. This is a report of two cases of tuberculoma in the postpartum women with the history of stillbirth. The type 1 helper T cells' inflammatory activity decreased, there was a brief drop in immunity, allowing the mother's body to accept the fetus - a foreign body. This immunological reconstitution-induced decrease in immunity during pregnancy and the first few months after giving birth had caused a high level of susceptibility, which is typically marked by a marked escalation of tuberculosis and an adverse course of illness.

Key Words: Tuberculoma; postpartum; Pregnancy

INTRODUCTION

Mycobacterium tuberculosis is the causative agent of tuberculosis, one of the most ancient infectious diseases in human history. In pregnancy and the postpartum period, tuberculoma is rarely diagnosed since its clinical manifestation might mimic that of other prevalent illnesses, like eclampsia[1]. The clinical manifestations of intracranial tuberculomas can include focal neurological impairments, seizures, headaches, vomiting, and meningeal irritation symptoms. Neuroimaging plays a crucial role in the diagnosis process[2]. The differential diagnosis must also examine other illnesses that mimic pregnancy and peripartum, such as brain tumors, bleeding, and infections, before a diagnosis is made based only on the causes of seizures[3]. Malaise and exhaustion, which are often assumed to be typical pregnancy symptoms, can be a sneaky way for TB to manifest during pregnancy. CNS-TB symptoms can be mistaken for those of other pregnancy-related illnesses, including brain tumors, pre-eclampsia, seizure disorders, and hyperemesis[4]. In a tertiary care hospital, we report a case of tuberculoma in two postpartum patients. However, what at first seemed to be a brain tumor turned out to be a tuberculoma.

CASE-1 PRESENTATION

A 29-year-old female presented a few weeks after stillbirth with symptoms of fever, anorexia, and apathy. On examination, she was pale, tachycardia, and tachypneic. Heart sounds were normal. Neurological examination revealed a low Glasgow Coma Scale (GCS) score and right-sided hemiparesis. Sepsis due to pelvic infection and cerebrovascular illness were among the differential diagnosis. Among the investigations were the following: erythrocyte sedimentation rate (ESR), whole blood count, Blood culture, urea and electrolytes, sputum microscopy and culture for bacteria, sputum fungal studies, sputum smear and microscopy CSF for GeneExpert assay for acid-fast bacilli, and chest radiograph HIV screening, urinary pregnancy testing, urine microscopy, culture, and sensitivity.

The cell counts showed increased WBCs and raised ESR, while the rest of the tests were within normal limits. The GeneExpert assay was positive for Mycobacterium tuberculosis, with low MTB detected and rifampicin sensitivity. Axial contrast CT of the brain showed moderate ring contrast enhancement (figure 1a). She was commenced on intravenous fluids and antitubercular drugs, following improvement, was discharged on a 12-month antitubercular regimen.

CASE - 2 PRESENTATION

A 35-year-old female presented a few days after stillbirth with drowsiness. On questioning about her antenatal history, she reported visual difficulties and hypertension. Fundus examination revealed bilateral papilloedema. Investigations included: Cell counts showing increased WBCs, Normal chest X-ray, Microscopy, blood culture, and HIV testing, all of which were negative, GeneXpert assay for CSF and acid-fast stains for *Mycobacterium tuberculosis*, both of which were negative. A contrast-enhanced MRI of the brain showed multiple ring-enhancing lesions scattered throughout the brain parenchyma. Based on the high clinical suspicion and MRI findings, the patient was started on a 12-month anti-tubercular regimen and was subsequently discharged.

DISCUSSION:

The danger of untreated TB during pregnancy is considerable for both the mother and the fetus. By the hematogenous pathway, tuberculomas are frequently found in the periventricular area and corticomedullary junction. Vertical transmission is quite uncommon from an afflicted mother to her fetus during pregnancy. Premature birth and low birth weight are two times more likely, and perinatal mortality is six times higher.

Tuberculoma can manifest as one or more lesions, ranging in size from less than one centimeter to several centimeters. One of the risk factors for cerebral tuberculoma is pregnancy and puerperium. Pregnancy-related immune alterations can lead to reduced cell-mediated immunity and an increased risk of developing a variety of infectious illnesses [2]. The most probable diagnosis may be suggested by MRI characteristics. On T1WI, the majority of TB tumors show up as hypo- or isointense with the brain, while on T2WI, they seem hypointense. The most common pattern is a mild to moderate circular or lobulated ring-like enhancement surrounding a nonenhancing center. Because tuberculomas might exhibit increased relative cerebral blood volume in the cellular, hypervascular, enhancing rim, perfusion may be deceptive in some situations [5-6]. GeneXpert MTB/RIF (Xpert) is a heminested PCR test that can help diagnose tuberculosis (TB). It's a rapid test that can detect rifampicin resistance. One study found that Xpert had an 80.8% sensitivity compared to MTB culture when diagnosing pulmonary TB in patients with complicated pregnancies. However, another study found that Xpert had a sensitivity of 35.63% and a diagnostic accuracy of 66.47%. The study also concluded that Xpert is useful for ruling in TB, but not for ruling it out when negative. Case 1 had a positive GeneXpert test for *Mycobacterium tuberculosis* with rifampicin sensitivity from CSF, whereas Case 2 had a negative assay report, implying that the patients may have a tuberculoma with or without meningeal disease. For a conclusive diagnosis, neurological imaging is necessary. Infectious disorders, neoplasms, some pregnancy-related ailments, and neurovascular abnormalities have all been documented in this patient group[7]. As differential diagnoses, cases with mild imaging abnormalities, like autoimmune encephalitis and

temporal lobe encephaloceles, may be taken into consideration[7]. Intracerebral tuberculomas have ambiguous imaging results that need to be distinguished from other forms of space-occupying lesions, such as brain cancers. The diagnosis is still possible even if chest X-rays show no signs of tuberculosis[8]. The brain's axial contrast CT scan in instance 1 revealed a modest ring contrast enhancement. The most likely diagnosis may be indicated by MRI findings. The CE MRI in Case 2 revealed many bilateral ring-enhancing lesions dispersed throughout the brain parenchyma.
A highly suggestive clinical and radiological scenario may indicate that anti-tuberculous treatment is warranted if the advantages outweigh the dangers. After empirical treatment is started, a positive clinical and imaging response confirms the right diagnosis[9].

CONCLUSION

Tuberculomas are rare in pregnancy but should be considered as differential diagnosis. The clinical manifestations may mimic toxemia of pregnancy and neoplastic lesions. The early diagnosis of tuberculosis by microbiological modalities including GeneXpert and of tuberculomas via imaging with MRI can lead to better outcomes and decrease the mortality in both mother and fetus as these are responsive to antitubercular treatment.

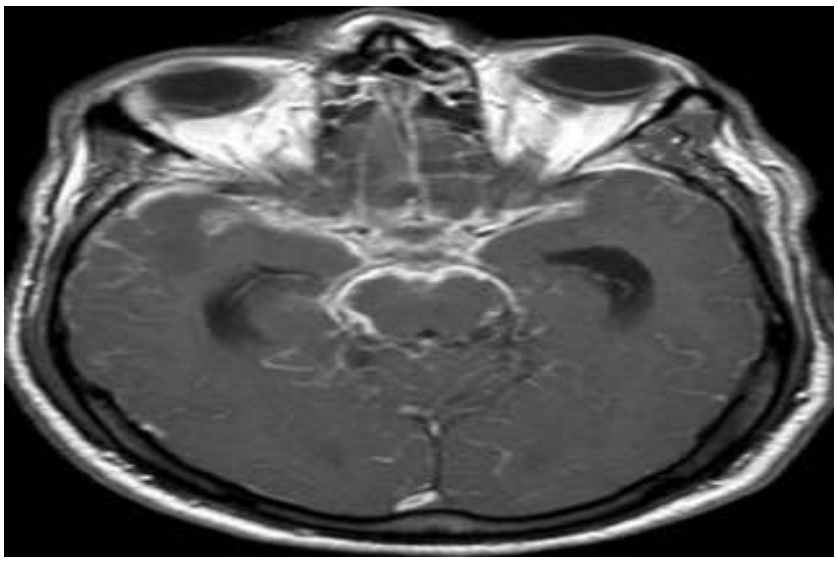
LIMITATIONS:

The author lacked information pertaining to follow up.

Declaration: The Authors declare they do not have any conflict of interest.

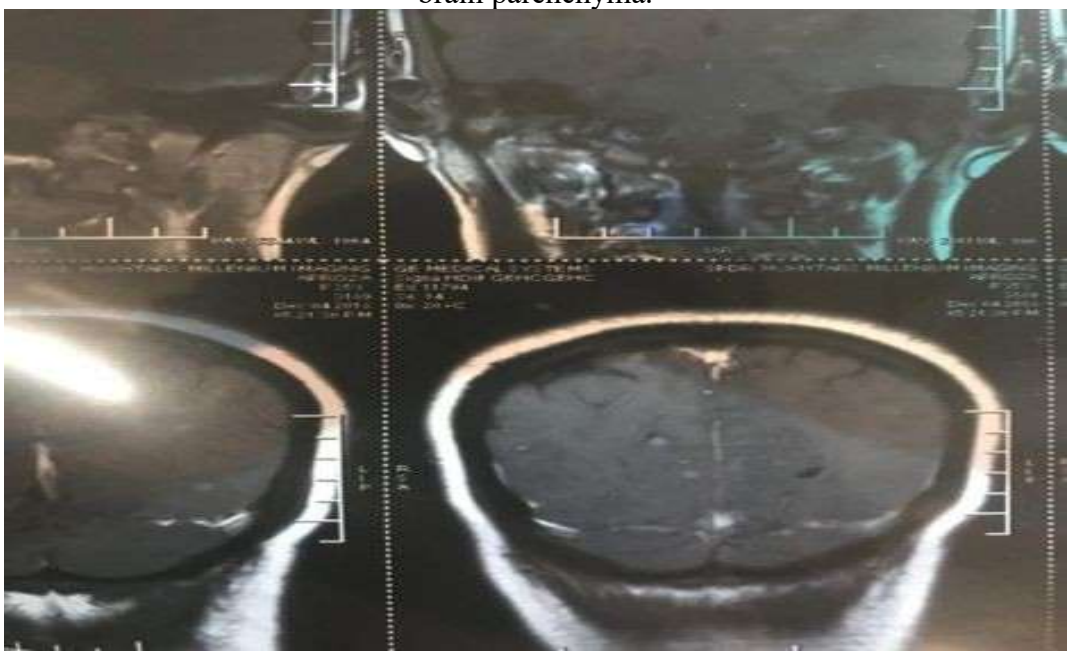
REFERENCES:

1. Tajammul SM, Shabbir AC, Jubariya ME, Nihmatulla M. Postpartum seizures due to tuberculoma in brain. J Anaesthesiol Clin Pharmacol. 2015;31(3):412–413.
2. Zakia H, Iskandar S. Case report: depressive disorder with peripartum onset camouflages suspected intracranial tuberculoma. Front. Psychiatry. 2022;13.
3. Vempati R, Samuganathan P, Raghavan P, Rajpal S, Guralwar C, Padamati B, et al. Intracranial tuberculoma in a pregnant lady: a hitherto unknown case and a successful outcome. Cureus. 2022;14(11).
4. Tuberculosis in pregnancy and the puerperium. Ormerod P. Thorax. 2001;56:494–499.
5. Psimaras D, Bonnet C, Heinzmann A, Cárdenas G, Hernández S, Tungaria A, et al. Solitary tuberculous brain lesions: 24 new cases and a review of the literature. Rev Neurol (Paris) 2014;170(6-7):454–463.
6. Osborn A, Hedlund G, Salzman K. 2nd ed. Elsevier; Salt Lake City, UT: 2017. Osborns brain, imaging, pathology and anatomy.
7. Mortimer AM, Bradley MD, Likeman M, Stoodley NG, Renowden SA. Cranial Neuroimaging in Pregnancy and the Post-Partum Period. Clinical Radiology, 2013; 68(05):500–508.
8. Manjubashini D, Nagarajan K, Amuthabarathi M, Papa D, Wadwekar V, Narayan SK. Magnetic Resonance Imaging in Peripartum Encephalopathy: A Pictorial Review. Journal of Neurosciences in Rural Practice, 2021; 12(2):402–409.
9. Psimaras D, Bonnet C, Heinzmann A, Cárdenas G, Hernández Tungaria A, et al. Solitary Tuberculous Brain Lesions: 24 New Cases and a Review of the Literature. Revue Neurologique (Paris), 2014; 170(6-7):454–463.



CEMRI: Figure 1a

Features suggestive of numerous tuberculomas scattered in brain parenchyma; multiple sub centric ring enhancing lesions with central T2 hypo intensity seen scattered in both supra and infra tentorial brain parenchyma.



CEMRI: Figure 1b

CEMRI showing multiple ring enhancing lesions scattered in the brain parenchyma