ORIGINAL RESEARCH PAPER
Volume - 14 | Issue - 05 | May - 2025 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

A CASE OF POSTPARTUM SEIZURES AND HEADACHES: DIVING INTO AN EXTREMELY RARE ETIOLOGY

Neurosurgery

Ritankar Patra Department of Neurosurgery, NRSMCH, Kolkata

Kaushik Roy Department of Neurosurgery, NRSMCH, Kolkata

Jiwesh Kumar* Department of Neurosurgery, NRSMCH, Kolkata *Corresponding Author

ABSTRACT

Background: Postpartum seizures can have a variety of underlying causes, both pregnancy-related and non-pregnancy-related. While assessing a postpartum patient with headache and seizures, it is essential to consider a broad differential diagnosis. **Case Report:** A 26-year-old female who developed headache and seizures 28 days postpartum after undergoing emergency lower uterine segment cesarean section (LUCS) with spinal anesthesia. Initially diagnosed as a post-spinal headache, her condition evolved with the onset of generalized tonic-clonic seizures, prompting further investigation. Neuroimaging revealed a right fronto-parietal chronic subdural hematoma and a mass consistent with a fibroblastic meningioma. After craniotomy and excision of the mass, the patient recovered well and HPE revealed fibroblastic meningioma. In this rare case, the meningioma likely contributed to the development of chronic subdural hematoma, complicating the postpartum period. **Conclusion :** This highlights the importance of considering both common and rare causes in the differential diagnosis when managing postpartum seizures. Early neuroimaging, including NCCT and MRI, is recommended for persistent symptoms following spinal anesthesia to rule out serious underlying conditions like brain tumors or chronic subdural hemorrhage.

KEYWORDS

Postpartum seizure, meningioma, chronic subdural hematoma, spinal anesthesia, neuroimaging, pregnancy-related causes.

INTRODUCTION

While assessing a postpartum patient with complaints of headache and seizures , it's important to consider a wide range of possible causes, both related to pregnancy and other factors. Postdural puncture headache and its effects are likely to be labelled in the diagnosis, even if there's no clear history of any leak following dural puncture. Possible causes for postpartum seizures include: obstetric causes like postpartum eclampsia, Sheehan syndrome, and amniotic fluid embolism, anesthetic causes such as postdural puncture headache and air embolism, neurologic causes including primary seizure disorders, brain lesions, stroke, intracranial bleeding, cerebrospinal fluid leaks, and brain tumors metabolic causes like alcohol withdrawal, electrolyte imbalances, uremia, low blood sugar, and thyroid problems, infectious causes like meningitis or encephalitis. Diagnosing seizures in postpartum patients can be difficult. [1] We need to consider both pregnancy-related causes and other conditions. This case shows that when a patient has this combination of symptoms, it's important to look beyond common causes and consider rare conditions, as we did in this case.

Case Report

A 26-year-old female presented at OPD with headache and 1 episode of seizure 28 days after delivery. She underwent emergency LUCS under spinal anesthesia 28 days ago and was complaining of intermittent, holocranial, mild to moderately severe headache with no postural, diurnal variation and was not associated with vomiting. The headache had no aggravating factor and was relieved momentarily on taking NSAIDs. Initially it was being treated as post spinal headache, however, following the episode of seizure(GTCS) , she was taken to local hospital .The neurological examination revealed no gross abnormality. Her NCCT brain (Fig 1) revealed right frontal parietal crescent shaped hypodense bleed probably chronic subdural hemorrhage and a mixed density mass at right frontal convexity with midline shift of approx. 1 mm. CEMRI (Fig 2) was done subsequently. T1 weighted image shows hypointense crescent shaped area in right fronto parietal area and an iso to hypointense heterogenous globular mass attached to right frontal convexity of size approx. 3cm X 2cm X 2cm with no intervening hemorrhage and calcification. T2 weighted images(Fig 3) corroborated with T1 weighted images (showing hyperintense crescent in right fronto parietal area and iso to hypointense mass lesion with no intervening hemorrhage or calcification and attached to right frontal convexity). The mass brilliantly enhanced upon administering gadolinium based contrast with few flow voids .(Fig 4,5) After subsequent investigations and obtaining pre operative fitness we proceeded for the excision of space occupying lesions (SOL). She underwent right fronto parietal craniotomy with gross total excision of the SOL and evacuation of chronic SDH. The patient recovered well and got discharged on POD 7. Post op scans(Fig 6) were unremarkable showing complete evacuation of chronic SDH and excision of frontal convexity SOL. HPE report revealed to be fibroblastic meningioma (WHO grade I).

DISCUSSION

Meningioma is most common CNS tumor in pregnancy. Meningiomas are slow-growing tumours and often asymptomatic until discovered incidentally on neuroimaging . In patients who are symptomatic, meningiomas typically present with mass effect, seizure disorders, focal neurological deficits or cognitive decline.[2] The biological behaviour of meningioma in pregnancy is different from other meningiomas. The possible explanation is rooted in the complex physiological changes and hormonal differences during pregnancy. The increased meningioma growth observed in pregnancy is presumably the result of endocrine mechanisms. These include increase in progesterone, human placental lactogen (hPL) and prolactin (PRL) serum levels. In contrast, levels of pituitary hormones such as follicle stimulating hormone (FSH), luteinizing hormone (LH) and human chorionic gonadotropin (hCG) produced by the placenta are decreasing in the mother prior to childbirth. Besides, vascular factors also play a crucial role. Peritumoral brain oedema (PTBE), with well-known causative association with vascular endothelial growth factor (VEGF), can often be seen both with imaging and in the surgical specimens.[3]

Spinal anaesthesia is commonly used anaesthesia during obstetric procedures and subdural hematoma (SDH) is one of the rare but fatal complications of spinal anaesthesia.[2]. About 41% ofpostpartum SDH becomes chronic, and the ratio of acute (31%)and subacute (33%) subdural hematomas (SDH) is similar.[4] The mechanism of development of SDH following spinal anaesthesia is analogous to PDPH. It is postulated thatthe orifice made in the dura mater after puncturing with the cerebrospinal fluid (CSF) needle remains open for several weeks after the puncture. This leads to rapid loss ofCSF, which reduces the intraspinal and intracranial pressure. This causes a caudal shift of the brain, which causestraction of the structures sensitive to pain and bridgingveins in the subdural space leading to its rupture causingSDH and headache.[5,6]

However a meningioma with chronic subdural haemorrhage presenting with seizure episodes in a post-partum lady is a very rare occurrence. The mechanism of SDH associated with benign meningioma is still obscure. Previous reports suggested several hypothetic mechanisms based on intraoperative findingsor pathologic examinations. They include (1) rupture of a weak point of the vessel wall in the distended feedingartery with tumour growth; (2) disruption of abnormally developed vessels in the tumour, causing intertumoral haemorrhage or necrosis; (3) histochemical changes byvasoactive substances released by the tumour itself, consequently leading to neovascularization or forming a neo membrane such as in chronic

SDH; and (4) potential friability of the bridging vessels or subdural veinstretched by the tumour mass and, thus, susceptibilityto minor trauma[7].

In our case combination of all these possibilities could have led to the formation of chronic SDH. It was mainly due to lumbar puncture during spinal anaesthesia but the predisposing pregnancy conditions have also been attributed to the formation of chronic SDH.

CONCLUSION

Meningioma in pregnancy is common but meningioma with chronic SDH in pregnancy is a very rare finding. Often we ignore headaches following spinal anaesthesia as a sequalae of dural puncture. However if it persists for more than 1 month, a NCCT brain should be done to rule out chronic SDH. Also a preop MRI screening of brain should be done to exclude any brain SOL as they may complicate the pregnancy outcomes.

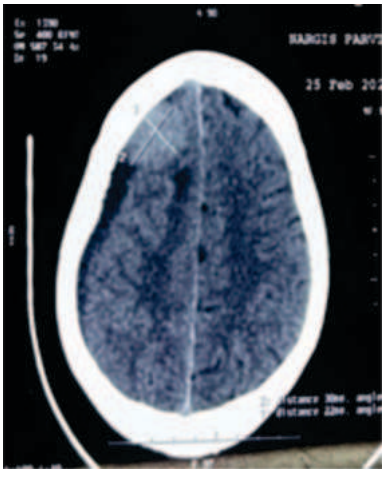

Fig 1. Ncct Brain (pre-op)

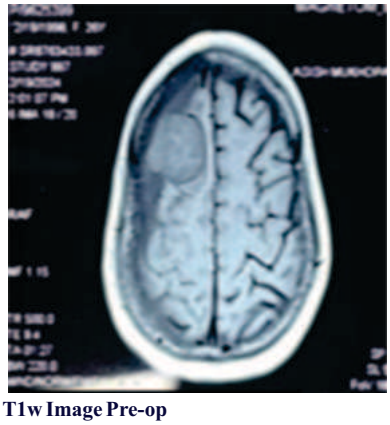

Fig 2. MRI T1w Image Pre-op

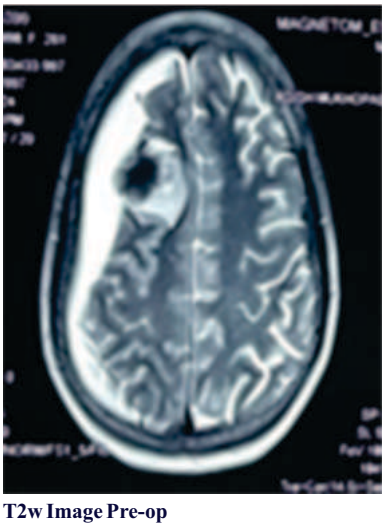

Fig 3. MRI T2w Image Pre-op

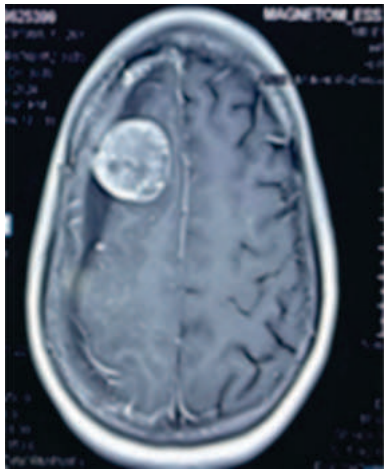

Fig 4. MRI T1+ Contrast Pre-op Image(Axial)

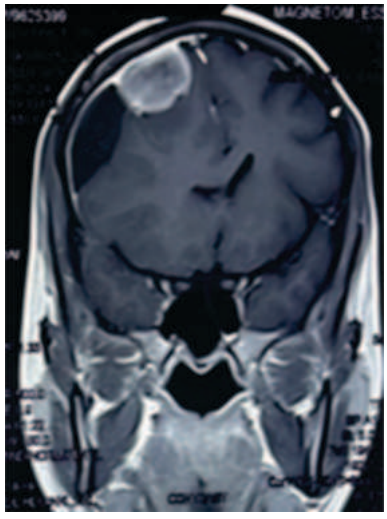

Fig 5. MRI T1+ Contrast Pre-op Image(coronal)

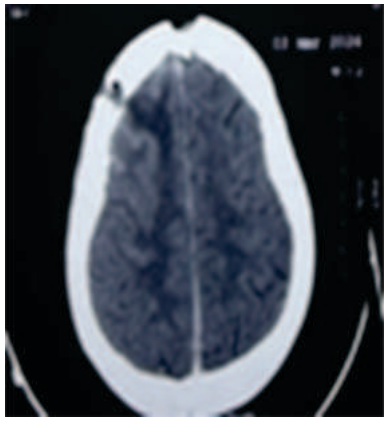

Fig 6. Post-op Ncct Brain

REFERENCES

1. Causer E, Birchall I, Simchovich G, Pascoal E . Postpartum seizure as a complication of dural puncture and intracranial hypotension CMAJ Jul 2023, 195 (26) E905-E908; DOI: 10.1503/cmaj.230063
2. Vernooij MW, Ikram MA, Tanghe HL, Vincent AJPE, Hofman A, Krestin GP, et al. Incidental findings on brain MRI in the general population. N Engl J Med [Internet]. 2007;357(18):1821–8. Available from: http://dx.doi.org/10.1056/NEJMoa070972
3. Hortobágyi T, Bencze J, Murnyák B, Kouhsari MC, Bognár L, Marko-Varga G. Pathophysiology of meningioma growth in pregnancy. Open Med (Warsz) [Internet]. 2017;12(1):195–200. Available from: http://dx.doi.org/10.1515/med-2017-0029
4. Rajbhandari S, Gurung P, Nepal G, Acharya S, Pant B. A case of postpartum chronic subdural hematoma. Clin Case Rep [Internet]. 2021;9(8):e04694. Available from:http://dx.doi.org/10.1002/ccr3.4694
5. Bisinotto FMB, Dezena RA, Fabri DC, Abud TMV, Canno LH. Intracranial subdural hematoma: a rare complication following spinal anesthesia: case report. Rev Bras Anestesiol [Internet]. 2012;62(1):88–95. Available from: http://dx.doi.org/10.1016/S0034-7094(12)70107-1
6. Schweiger V, Zanconato G, Lonati G, Baggio S, Gottin L, Polati E. Intracranial subdural

hematoma after spinal anesthesia for cesarean section. Case Rep Obstet Gynecol [Internet]. 2013;2013:253408. Available from: http://dx.doi.org/10.1155/2013/253408
7. Nam JW, Park ES, Park JB, Seo JH, Kim M, Jung NY. Benign meningioma manifesting with acute subdural hematoma and cerebral edema: a case report and review of the literature. J Med Case Rep [Internet]. 2021;15(1):335. Available from: http://dx.doi.org/10.1186/s13256-021-02935-x