

Diagnostic Dilemma in Post Partum Seizures: A Case Report

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Abstract: *Seizure in the early postoperative period in a postpartum female always poses a diagnostic dilemma for both the anaesthesiologist and the surgeon. We are reporting a 26-year-old primigravida with unremarkable history during the antenatal period who developed convulsions within 45 minutes of delivery performed by lower segment cesarean section under spinal anesthesia. All relevant causes of postpartum seizure were ruled out and surprisingly magnetic resonance imaging of the brain revealed cerebral neurocysticercosis. Appropriate management and timely intervention resulted in an uneventful recovery. The clinical manifestations of neurocysticercosis are variable and depend on the number, size, and location of cysts and the immune response of the host.*

Keywords: Neurocysticercosis, Post-partum period, Seizures

1. Introduction

Seizures in early postpartum period are definitely a diagnostic dilemma. There may also be a considerable overlap in presentation of the conditions making diagnosis and treatment of seizures difficult. Convulsions in the puerperium should be treated as eclampsia until and unless proven otherwise. However, opportunities to identify other causes of convulsions should be vigorously pursued.¹

2. Case Report

A 26 yr old primigravida, who had an uneventful antenatal period presented at 37+2 weeks with foetal distress, for which emergency LSCS was done under regional (spinal) anaesthesia with 2ml of 0.5% bupivacaine heavy. Intraoperative period was uneventful, patient was comfortable, conscious, oriented and vitals were stable and patient was shifted to recovery room. 45 minutes later, patient complained of sudden severe intensity headache, followed by generalized tonic-clonic convulsions which was terminated by i/v midazolam. There was no bowel or bladder incontinence. On examination, immediately after the seizures, she did not have a post-ictal phase or no residual focal neurological deficit. Patient was put on oxygen support via facemask and shifted to ICU with all emergency drugs, intubation tray and all monitors attached. She was afebrile, hemodynamically stable with no respiratory discomfort. Pulse oximetry demonstrated oxygen saturation of 94% on air and 98% on facemask at 6 l/min of oxygen flow. Arterial BGA, full blood count, clotting profile, LFTs, RFTs, serum electrolytes, serum calcium, serum magnesium and random blood glucose were well within normal limits. EEG was normal. Radiology confirmed a normal chest X-ray, MRI (magnetic resonance imaging) of the brain was performed and demonstrated multiple well defined ring enhancing altered signal intensity lesion noted with mild perilesional edema making a diagnosis of postpartum eclampsia initiated by neurocysticercosis of brain more likely.

The following treatment regimen was commenced: intravenous magnesium 4gm in 100ml NS slowly followed by infusion of magnesium sulphate of 1gm/hr over 24 hrs and inj. Leviteracetam 500mg BD to prevent further convulsions, and anti-parasitic agents under steroid cover i.e. prednisolone 1mg/kg/day as advised by neurologist.

She remained stable and had no further convulsions. The patient made an uneventful recovery and was discharged after day 6 postpartum. A follow up MRI after 6 weeks confirmed resolution of edema surrounding the calcified cyst.

3. Discussion

This case posed a diagnostic enigma. Convulsions in the puerperium should be treated as eclampsia until and unless proven otherwise. In eclampsia, seizures are caused by widespread endothelial cell damage. The site and extent of the damage dictate the initial signs and symptoms caused by the syndrome. It is then logical that seizures may precede hypertension or proteinuria which our patient did not have antenatally or post partum, LFTs and platelet counts of our patient were normal. Headache is regarded as normal symptom in pregnancy.² Only a meticulous and detailed history along with vital monitoring and past medical history can help in making diagnosis of exclusion to rule out eclampsia from other disorders in such patients.

Other causes of postpartum convulsions include neurological causes such as neurocysticercosis, SAH, cerebral venous thrombosis for which MRI is a must. Amniotic fluid embolism, another cause of post-partum seizures will present as dyspnoea, hemodynamic instability and a positive d-dimer test.³ Late onset postpartum convulsions might be associated with PDPH (Post Dural Puncture Headache).⁴

In this case presentation, seizures occurred within 45 minutes after surgery, so possibility of seizures secondary to PDPH is unlikely. With such atypical symptoms and sudden

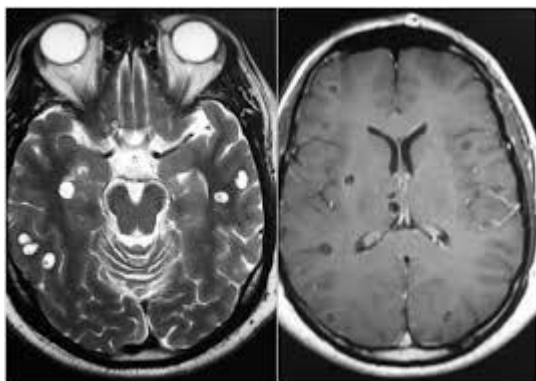
worsening of clinical status in the post-operative period, an early neuroimaging becomes important. In our case, MRI showed multiple well defined ring enhancing altered signal intensity lesion noted with mild perilesional edema consistent with diagnosis of neurocysticercosis.

The clinical manifestation of neurocysticercosis is determined by site and stages of infection. Although fully viable cystic lesion usually remains asymptomatic or subclinical while decaying and dead cysts (granulomas/calcifications) are associated with perilesional inflammation and seizures.⁵ This may sometimes manifest as occasional or recurrent seizures, obstructing ventricular lesions (hydrocephalus) or mass effects (stroke). Diagnosis is usually made on the basis of clinical suspicion further strengthened by cranial imaging (MRI) and immunological testing. The calcified lesions have a propensity through disruption of a blood- brain barrier.⁶

The sudden onset of seizures with headache in postpartum period can be explained by the fact that in pregnancy there is enhancement of phagocytosis and monophilic and monocytic activity around the cysticerci leading to inflammation along with pregnancy hormonal induced angiogenic stimuli contributing to enhanced blood- brain barrier permeability leading to seizure activity. Severe headache itself in the post-operative period is a very important symptom and includes differential diagnosis of PDPH, impending eclampsia and even NCC.⁶ There is a paucity of literature with respect to pregnancy induced reactivation of NCC during postpartum period; there is a possibility of a shift towards an increase in immune response and manipulation of hormones by helminths that may increase their survival and parasite density. So a cause should be ascertained by a clinical history, physical examination, vitals charting, and neuroimaging.

4. Conclusion

Neurocysticercosis is one of the most common etiologies of seizures and should be considered in differential diagnosis as a possible cause of postpartum seizures which cannot solely be explained by eclampsia. Neuroimaging like MRI play an important role in diagnosis. Supportive treatment must be initiated promptly to prevent further neurological sequale.



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