Psychogenic Non-Epileptic Seizures: Why Anaesthesiologist Should Know?

Abstract

A 19-year-old primigravida underwent caesarean section under spinal anaesthesia. She presented with seizures on 7th post-operative day. All the common etiological factors for seizures were ruled out. We found out that the seizures were due to a psychiatric condition called 'psychogenic non-epileptic seizure (PNES)'. There were previous case reports of PNES that were documented on known patients of seizures, followed by general anaesthesia. Here is a case of PNES without any previous history of functional or organic seizures followed by spinal anaesthesia.

Keywords: *PNES, post anaesthesia seizures, post-operative pseudoseizures, post-operative seizures, post-partum seizures, post-traumatic stress disorder, psychogenic non-epileptic seizures*

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Introduction

Post-partum seizures are a recognised complication in obstetric practice. A common etiological factor for post-partum seizures is eclampsia and should be treated accordingly until otherwise proved. Many other etiological factors can cause convulsions during puerperium. The clinical features are so overlapping that they pose difficulty in arriving at a particular diagnosis.

Post anaesthesia seizures in turn have many etiological factors. Both post anaesthesia and post-partum seizures combined poses a diagnostic challenge in the post-partum period, especially to anaesthesiologist. Psychogenic non-epileptic seizures (PNES) present as epileptic activity without any organic or functional cause. Diagnosing and treatment of post-partum post anaesthesia seizures is a multidisciplinary team approach involving the obstetrician, The main idea of presenting this case is to raise awareness among anaesthesiologists to consider "PNES" as possible etiology when all the others were ruled out.

Case Report

A 19-year-old primigravida was posted for elective caesarean section. There were no other medical issues during her pregnancy and routine blood reports were normal. Surgery was done under spinal anaesthesia performed with 26G Quincke needle in a single attempt. Perioperative period was uneventful. The patient was discharged home on the 5th post-operative day.

On the 7th post-operative day, the patient was bought to the hospital by the attendants with the complaints of one episode of seizures with generalised shaking of all the extremities with closed eyes and there was no incontinence. The seizures subsided within few minutes and the patient looks, confused for approximately 5 minutes and later she was rushed to the hospital. On arrival, she was conscious, oriented and haemodynamically stable with no residual neurological deficit. Also, the patient denied any remembrance of the episode. There was no history of fever, headache or sensorium disturbances before the seizure. There was no past history of seizures or head injury or any major illnesses. Also, the family history was not suggestive of seizures. Subsequently, investigations were done such as complete blood counts, liver function tests, serum creatinine, serum electrolytes (sodium, potassium, magnesium) and urine examination, which were normal. Neurologist opinion was sought. Electrocardiography, echocardiography and magnetic resonance imaging (MRI) brain were done, which showed no abnormalities. Antiepileptic drug (levetiracetam) was started. The

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patient was discharged home after 2 days, as she was seizure free on anti-seizure drug.

Again, the patient was brought to the hospital by the attendants with the complaints of second seizure episode the next day after discharge. When the patient was examined, she was completely normal. Electroencephalogram (EEG) was done, which was normal. The third episode of seizure occurred in the hospital, which was initially noticed by the healthcare workers (staff nurse) and later witnessed by the doctors. She had generalized shaking of all extremities, head and pelvis thrusting with firmly closed eyes. Seizure subsided with 2 mg of intravenous midazolam. There was no desaturation, or tongue bite or bladder/bowel incontinence. The same day patient had two more episodes of similar seizures, which lasted for 5 minutes each with patient unresponsiveness for another 3 minutes. All the vitals remained stable and the episodes self-subsided. Pseudoseizures were suspected, and a psychiatrist opinion was obtained. Interestingly, the patient had acted the similar seizure pattern upon psychiatrists questioning. She was then diagnosed as a 'psychogenic non-epileptic seizure' and was treated for cognitive behaviour therapy for 2 months. She was seizure free on one-year follow-up (till date).

Discussion

Seizures in the post-partum period may occur due to several reasons and hence pose a diagnostic challenge. Post-partum seizures can be due to obstetric reasons [e.g., eclampsia, cerebral venous sinus thrombosis, posterior reversible encephalopathy syndrome (PRES)[1] and thrombotic thrombocytopenic purpura], regional anaesthesia related causes including but not limited to epidural anaesthesia, spinal anaesthesia and their complications[2,3] (dural puncture, encephalitis, spinal haematoma, etc.) or other causes like metabolic disturbances (hypocalcemia, hyponatremia), trauma and intracranial tumour.[4] Treatments for post-dural puncture headache (PDPH) like caffeine,[5] sumatriptan and epidural blood patch also can cause seizures.[6]

PNES occurs more commonly in women and usually is followed by a specific traumatic event.[7] PNES is very difficult to diagnose and treat as well. PNES is one of the major causes of intractable seizures (20%–30%). The prevalence rates of PNES in general population come to 2–33/100,000.[8] There is abundant scope that the majority of cases of PNES are misdiagnosed and treated as recurrent seizures.

Our patient did not have any past history of seizures or psychiatry disorders or any medical issues during her pregnancy and her post-operative period was uneventful. Eclampsia was unlikely in our patient as her blood pressure was normal throughout and she did not have any complaints like headache. MRI brain ruled out other pathologies like PRES, cerebral venous thrombosis, meningitis, tumour and intracranial haemorrhage. It was well documented that dural puncture and its treatment modalities like caffeine; sumatriptan and epidural blood patch also can cause seizures.[4] It was proposed that dural puncture causes CSF hypotension and cerebral shift leading to cerebral vasospasm, which provokes seizures.[3] Our patient had only seizures and no other symptom like headache with or without positional variation, dizziness, vomiting or any other neurological deficit; so the dural puncture as etiology is unlikely. Pseudoseizures were suspected in our patient when the seizure was witnessed. The back thrusting or arching back is typical for a pseudoseizure along with the absence of frothy saliva and absence of incontinence.

PNES presents with seizure like activity and is not associated with organic or other pathological central nervous system dysfunction but is rather psychogenic mediated.[9] Clinical suspicion and careful history taking with witness accounts are mandatory. The incidence of PNES is not well documented. PNES come under a large group of psychiatric disorders called somatic symptom disorders. PNES seizures may range from tonic-clonic seizures to absence seizures or even focal impaired awareness.

Convulsive episodes lasting longer than 90 s, closed eyes during a 'tonic-clonic' attack, retained pupillary response, resistance to eye opening, awkward movements not typically seen in seizures, positive response to noxious stimuli and absence of autonomic manifestations like tachycardia and bladder incontinence are useful signs to differentiate PNES from other types of convulsive disorders.[2,10] Seizure episode usually resolves without anticonvulsants. Often there is a history of multiple admissions for the same complaints.[11] The diagnostic test for PNES is video EEG monitoring, which is difficult to obtain. Our patient also had a similar pattern of seizures and it resolved without anticonvulsants. In our patient, even though we found nothing inconclusive, an empirical anti-convulsant was given (levetiracetam) but the seizures recurred and only once intravascular midazolam was given.

Few cases of post-operative pseudoseizures were reported in literature. In almost all cases, it had occurred in the immediate post-operative period and following general anaesthesia in patients known to be epileptic.[9,10,12,13] But in our case, pseudoseizures occurred from 7th post-operative day and following spinal anaesthesia and also there was no past history of seizures. There is one case report of PNES that occurred during lower segment caesarean section after epidural anaesthesia.[14] Also, few cases on PNES after epidural anaesthesia in non-obstetric cases were reported earlier.[15] This may be the first case of PNES reported after spinal anaesthesia. Lichter *et al*.[13] reported 5 cases of PNES after general anaesthesia and they confirmed the diagnosis with video EEG monitoring. Estimation of

serum prolactin, which is high in generalised tonic-clonic seizure (GTCS) but not in PNES, may also be useful to differentiate GTCS from pseudoseizures.[17-19] PNES is differentiated from post-traumatic stress disorder (PTSD) as the latter is caused due to a history of psychological distress such as divorce, physical or sexual abuse and death of loved ones.[9,10,13,20] Our patient does not have any such past psychiatric issues, but post-partum depression could have provoked pseudoseizures.

The family or friends or co-workers may reinforce a PNES behaviour,[11] which was exactly happened in our case. Psychiatrist unearthed the history of this patient that she was acting an epileptic episode, which she was observing since her childhood in one of her relatives. Family issues trigger such seizure episodes.

The single most reliable test to detect PNES is video EEG monitoring. These are difficult to treat and consume a lot of time and money, which even create lot of frustration. The therapies include eye movement desensitisation and reprocessing, cognitive behaviour therapy, prolonged exposure psychotherapy, interpersonal and psychodynamic psychotherapy, mindfulness-based psychotherapy and family therapy.

Conclusion

PNES as post-partum seizures, especially after anaesthesia, is a concern for anaesthesiologist as it will be involved in making anaesthetic drug/procedure as the sole culprit, cancellation of procedures and unnecessary use of medications in view of seizures, which might also affect the foetus. They may also lead the physicians to unnecessary intubations and admission in ICU. Knowledge regarding PNES helps the anaesthesiologists to safeguard themselves and save the patients to guide them towards proper treatment.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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