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CASE REPORT

Intractable Seizures During Pregnancy: A Clinical Challenge

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Introduction

Seizures during pregnancy necessitate an extensive work-up to ascertain the aetiology. We report an unusual presentation of intractable seizures during pregnancy.

Case

A 27-year-old G2P1L1 presented with an episode of tonic–clonic convulsion at 29 weeks. Two years back, she delivered a 2.56 kg baby normally, but on post-natal day three, she developed seizures with loss of consciousness. There was no history of high blood pressure (BP), and work-up for the neurological cause was negative. She recovered on carbamazepine but discontinued the medicine after a week and remained seizure-free interconceptionally.

On admission, she was drowsy; BP was 100/60 mmHg with pallor, pedal oedema, and normal neurological and systemic examination. Abdominal examination revealed a relaxed uterus with a single live foetus of 30 weeks and adequate liquor. Speculum examination ruled out infection.

Investigations

She had no papilloedema. Her blood investigations revealed haemoglobin 8.1 gram/decilitre (g/dL), platelet count-1.71 lakhs/microlitre, total count-6050 cells/microlitre, normal liver enzymes, serum electrolytes, total protein-5.1 g/dL, urea-12 mg/dL (mg/dL), creatinine-0.35 mg/dL, glucose 101 mg/dL. Anti-nuclear antibodies and anti-nuclear cytoplasmic antibodies were negative. Cerebrospinal fluid (CSF) was acellular. CSF sugar (60 mg/dL) and protein (28 mg/dL) levels were normal. Her blood and CSF work-up were negative for Herpes simplex virus, Japanese encephalitis, scrub typhus, dengue, and mycobacterium tuberculosis. Non-contrast computed tomography (NCCT), magnetic resonance imaging (MRI), and MR venogram (MRV) brain (Fig. 1) were normal. Blood and urine culture were sterile. Porphyria work-up and autoimmune encephalitis panel were negative. Urine examination was initially negative for cells, sugar, and protein but later revealed a 24-h urine protein of 828 mg/day. Video electro-encephalogram ruled out non-convulsive status epilepticus.

Treatment

A normal BP and absent proteinuria at presentation implied a non-eclamptic aetiology. A loading dose of 800 mg intravenous (iv) phenytoin was started followed by a maintenance dose of 100 mg 8th hourly. As she showed no response, we added injection levetiracetam and the dose was escalated to 3 g/day. Although she never went in status, she continued to have seizures 2–4 times a day. The patient remained drowsy but regained consciousness between the convulsions. Later, valproate was started at a dose of 500 mg iv 8th hourly.

A diagnosis of atypical eclampsia was considered as there was no new evolving sign except proteinuria. She continued to have convulsions even after 24 h of magnesium

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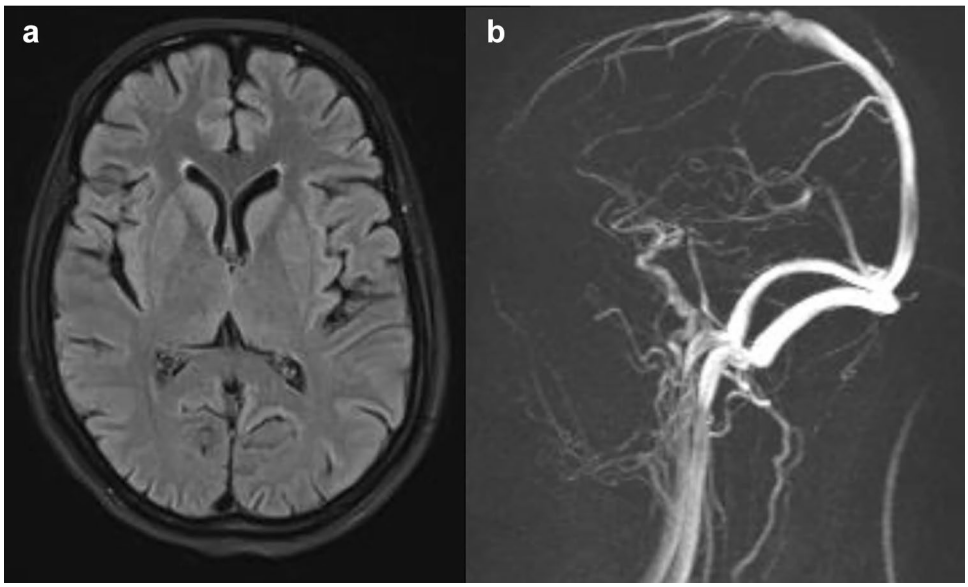

Fig. 1 Magnetic resonance (MR) imaging brain with venogram image. Axial, fluid-attenuated inversion recovery (FLAIR) sequence (**a**) and MR venogram (**b**) showing normal study

sulphate. Fearing endangerment to maternal and foetal life, we decided to induce labour at 31 weeks. She delivered as 1.3 kg baby vaginally, but the seizures persisted even after four days of delivery. We reviewed the case for neurological causes. Repeat CSF and MRI were normal. Finally, she responded to methylprednisolone pulse therapy (1 g/day for5 days). She was finally seizure-free after having seizures at a frequency of 2–4/day for 21 days.

Outcome

Newborn expired on day 5 due to prematurity. The patient was discharged on oral steroids and four anticonvulsants. Most of her drugs had been tapered and stopped, and she was seizure free with sodium valproate 200 mg TDS on her last follow-up in March 2020.

Discussion

The women presented to us with intractable seizures during the third trimester and a history of seizures in the previous post-partum period. Her seizures were uncontrolled despite four anticonvulsants and termination of pregnancy.

Seizures in pregnancy commonly occur secondary to epilepsy, eclampsia, or CVT with the incidence of 30–60/10,000, 5/10,000, and 11.6 per 100,000, respectively [1, 2]. Due to the strong association of seizures with pregnancy in this case, our initial suspects were eclampsia and CVT, but a normal BP, absent proteinuria, and normal brain imaging made these diagnoses unlikely. Strict association of seizures with pregnancy twice, negative electroencephalogram, and normal imaging mandated a work-up for the causes other than epilepsy. Work-up for other possible neurological disorders also turned negative. Given her poor response to anticonvulsants and new-onset proteinuria, we revised the diagnosis to atypical eclampsia which is defined as the occurrence of eclampsia without one or more of the classic findings of hypertension or proteinuria and/ or those occurring less than 20 weeks or 48 h after delivery [3]. We took the critical decision to deliver the foetus, but seizures persisted despite delivering the baby.

We re-evaluated her for neurological disorders. We could not ascertain the exact cause of the seizures despite detailed investigations. Looking at her subacute onset of illness and other negative work-up, and response to methylprednisolone, the diagnosis could have been 'possible autoimmune encephalitis' [4]. Another question is whether a steroid trial before delivery could have prevented the premature termination of pregnancy and possibly improved neonatal survival. We did not find any description of such steroid-responsive intractable seizures in the medical literature.

Conclusion

At times, it is extremely difficult to differentiate between eclampsia and neurological causes of seizures. Pulse steroid therapy may be tried as a last resort in convulsions of unknown cause as in our case.

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Declarations

Conflict of interest The authors declare that there are no conflicts of interest.

Informed consent We have obtained informed consent from the patient. The institution of study (Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry) gives approval on informed consent from the patient for case reports. The institute does not mandate a separate ethical approval for reporting cases.

Ethical approval Institution does not require ethical approval for reporting cases.

Research involving human participants and/or animals We have submitted a single case report.

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About the Author

Dr. J. Yavana Suriya graduated MBBS from VMKVMC, Salem, and was awarded gold medal for the best outgoing student in the year 2010. She completed her post-graduation from PGIMER Chandigarh in the year 2013. She also received degrees of Credential Indian Menopausal practitioner in 2013 and DNB in 2014. She is currently working as assistant professor in JIPMER, Puducherry. She has been awarded with prestigious Dr. R.P Soonawala award in AICC RCOG Kolkata, 2015, Dr. Jagdishwari Mishra award in AICOG Agra 2016, and Dr. C.S Dawn prize for best paper in AICOG Lucknow, 2020. Her field of interest is obstetric medicine and is involved in undergraduate and postgraduate teaching for the past 6 years.