DOI: 10.21276/aimdr.2021.7.2.AN1

Original Article ISSN (O):2395-2822; ISSN (P):2395-2814

Cerebral Venous Sinus Thrombosis: Peripartum Seizures Beyond Eclampsia

Mamta Jain[1], Anish K Singh[1], Vandna Arora[1], Nitu Yadav[2], Jyoti Vats[2], Sudesh Kumar[3]

[1]Assistant Professor, Department of Anaesthesiology & Critical Care, Pt BDS PGIMS, Rohtak, Haryana, India.
[2]Senior Resident, Department of Anaesthesiology & Critical Care, Pt BDS PGIMS, Rohtak, Haryana, India.
[3]Postgraduate Student, Department of Anaesthesiology & Critical Care, Pt BDS PGIMS, Rohtak, Haryana, India.

Received: December 2020
Accepted: January 2021

ABSTRACT

Seizures in the peripartum period are mostly treated as eclampsia unless proven otherwise. Neuroimaging is not a routine in each and every case of eclampsia. But in case of persistently depressed consciousness or localizing signs, neuroimaging is required to rule out other causes of seizures. Diagnosis of these although infrequent but not rare causes of peripartum seizures is very important to decrease maternal morbidity and mortality. We report successful and timely management of a case of postpartum seizure which was found to be due to cerebral venous sinuses thrombosis and posterior reversible encephalopathy syndrome.

Keywords: Seizures, Cerebral venous sinuses thrombosis, Eclampsia.

INTRODUCTION

Cerebral venous sinus thrombosis (CVST), though a rare entity can present with peripartum seizures. Symptoms occur either because of obstruction of venous sinuses or impaired drainage of cerebrospinal fluid leading to intracranial hypertension.[1] Patients usually present with headache, seizures, and other neurologic deficits. Therefore diagnosis of CVST is challenging due to nonspecific symptoms, especially in the context of the peripartum state where it can be confused with eclampsia. Early diagnosis and treatment is important as mortality rates range between 2.5 and 20%.[2]Here we present a case of postpartum seizures presumed to be eclampsia but later on successfully diagnosed and managed as CVST.

CASE REPORT

A 25-year-old female presented to the emergency department after 1 day of normal vaginal delivery with history of two episodes of generalized tonic clonic seizures (GTCS) in postpartum period. On examination, her glasgow coma scale (GCS) was 12/15 (E3V4M5), both the pupils were normal in size and normal reacting to light, with a pulse rate of 84/min and blood pressure of 150/100mm Hg. Urinalysis revealed urine albumin (3+).Patient management was started presuming it to be a case of eclampsia. A loading dose of 4g of injection (inj) magnesium sulphate (MgSO4) was given intravenously (iv) over 15-20 minutes followed by an infusion of 1g/hour. After around 4 hours, patient again had an episode of GTCS followed by respiratory distress and altered sensorium. Injection midazolam 2mg iv was given to treat the seizure episode following which patient's trachea was intubated and elective mechanical ventilation was started. Repeat neurological examination revealed GCS of 4/15 (E1V1M2) with unequal pupils. Left pupil was mid-dilated with normal reaction to light while right pupil was fully dilated and sluggishly

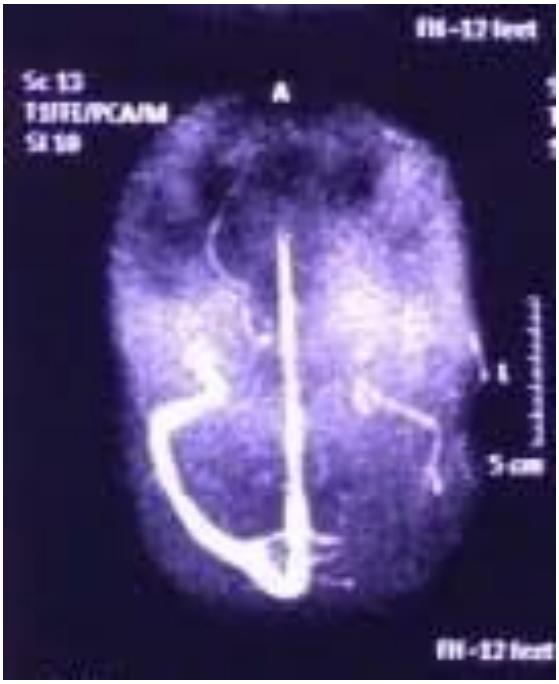

Figure 1: MRV of the patient showing attenuation of signal density in left transverse and sigmoid sinus

Name & Address of Corresponding Author
Dr. Vandna Arora
Assistant Professor,
Department of Anaesthesiology & Critical Care;
Pt BDS PGIMS, Rohtak,
Haryana, India.
E-mail: drvandna4@gmail.com

reacting. Urgent magnetic resonance imaging (MRI) brain with MR venogram (MRV) was done which showed left transverse and sigmoid sinus thrombosis [Figure 1]. Patient was shifted to intensive care unit (ICU) for further management on the lines of CVST. We started inj enoxaparin 40mg subcutaneously 12hourly along with inj mannitol 100ml iv 8 hourly. A loading dose of 15mg/kg of inj phenytoin was administered followed by 100 mg iv 8hourly. Patient was extubated the next day when GCS improved to 15/15. Repeat MRI brain with MRV on 7th day showed reperfusion changes [Figure 2]. Patient was discharged after 7 days in stable condition on tablet acenocoumarol 4mg once daily.

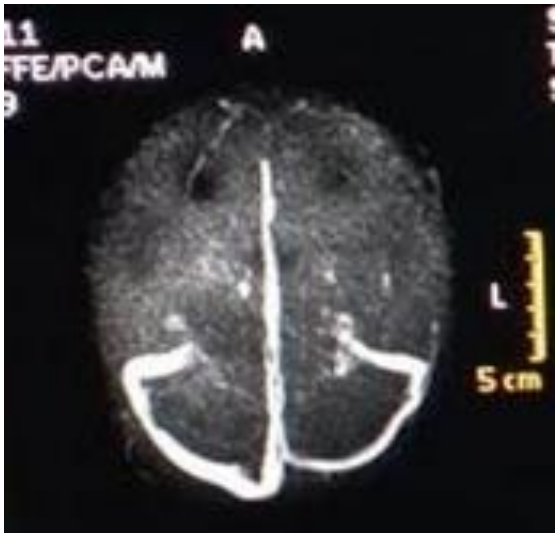

Figure 2: After treatment- MRV showing reperfusion changes

DISCUSSION

CVST is a rare and potentially life threatening disorder. It is difficult to diagnose because of the variability of clinical presentation. The most common complaint is headache.[3] Patient may present with focal neurological symptoms like weakness, aphasia, visual disturbances, seizures, and decreased level of consciousness. Seizures are seen in around 40% of the cases and can be focal or generalized tonic-clonic.[4] CVST is encountered in women, more so in pregnancy and puerperium owing to the hypercoagulable state. Pregnancy induces several prothrombotic changes in the coagulation system that persist during early puerperium.[5] Hypercoagulability worsens after delivery as a result of volume depletion and trauma.[5] The risk of peripartum CVST increases with increasing maternal age, presence of hypertension, infections, and excessive vomiting in pregnancy.[5]In our patient "pregnancy-postpartum period" was detected as an important risk factor. Our patient presented with seizures during postpartum period along with hypertension and proteinuria, therefore treatment was started on the lines of eclampsia. Despite antihypertensive and MgSO4 treatment, patient had repeat seizures with unequal pupils on examination. Therefore we suspected some other neurological cause for postpartum seizures in this patient and went for neuroimaging.

Radiological examination plays an important role in the diagnosis of CVST. A non-enhanced CT scan demonstrates nonspecific abnormalities such as a high attenuation lesion in the venous system, but may be normal in up to 20% of cases.[6,7]MRI with MRV is the most sensitive study for detection of CVT in the acute, subacute, and chronic phases.[8] In our case, MRI brain with MRV was done which showed left transverse and sigmoid sinus thrombosis.

Immediate anticoagulation with heparin is recommended for the treatment of CVST, even in patients with evidence of intracranial haemorrhage.[4,9,10]Afterwards, maintenance therapy with warfarin is instituted. This regimen is recommended to be continued for 6 months if CVST is related to pregnancy.[9]We started inj enoxaparin in our patient and discharged her on acenocoumarol. Also, as with our patient, antiepileptic medication is to be given to those who present with early seizures.[1]

This case highlights the importance of considering a broad differential diagnosis in women presenting with postpartum seizures. Although eclampsia is the most likely cause, other intracranial pathologies like CVST should be kept in mind in cases of atypical presentations, development of additional neurological symptoms or focal neurological signs. CVST can be confused with eclampsia as it may present with seizures during pregnancy or puerperium. MRI has high degree of sensitivity in establishing the diagnosis. In our case, the imaging results prompted the discontinuation of magnesium sulfate and initiation of antiepileptic and anticoagulation therapies. Prompt diagnosis and treatment is essential as it is associated with significant morbidity and mortality.

CONCLUSION

A broad perspective is required in the management of peripartum seizures so as not to overlook relatively infrequent causes to eclampsia. Precise and timely diagnosis is desired in CVST for targeted management and better patient outcome.

REFERENCES

1. Ehtisham A, Stern BJ. Cerebral venous thrombosis: a review. Neurologist 2006;12:32-8.
2. Fink JN, McAuley DL. Cerebral venous sinus thrombosis: a diagnostic challenge. Internal Medicine Journal 2001;31:384-90.
3. Cantu C, Barinagarrementeria F. Cerebral venous thrombosis associated with pregnancy and puerperium: review of 67 cases. Stroke 1993;24:1880-4.

4. Stam J. Thrombosis of the cerebral veins and sinuses. N Engl J Med 2005;325:1791-8.
5. Saposnik G, Barinagarrementeria F, Brown RD, Bushnell CD, Cucchiara B, et al. American Heart Association Stroke Council and the Council on Epidemiology and Prevention. Diagnosis and management of cerebral venous thrombosis: a statement for healthcare professionals from the American Heart Association/American Stroke Association. Stroke 2011; 42: 1158-92.
6. Barrett J, Alves E. Postpartum cerebral venous thrombosis after dural puncture and epidural blood patch. J Emerg Med 2005;28:341-2.
7. Allroggen H, Abbott RJ. Cerebral venous sinus thrombosis. Postgrad Med J 2000;76:12-5.
8. Bousser MG, Ferro JM. Cerebral venous thrombosis: an update. Lancet Neurol 2007;6:162-70.
9. Masuhr F, Mehraein S, Einhäupl K. Cerebral venous and sinus thrombosis. J Neurol 2004;251:11-23.
10. Bousser MG. Cerebral venous thrombosis: diagnosis and management. J Neurol 2000;247:252-8.

How to cite this article: Jain M, Singh AK, Arora V, Yadav N, Vats J, Kumar S. Cerebral Venous Sinus Thrombosis: Peripartum Seizures Beyond Eclampsia.Ann. Int. Med. Den. Res. 2021; 7(2):AN01-AN03.

Source of Support: Nil, **Conflict of Interest:** None declared