

**ISOLATED CEREBRAL LEFT VENOUS SINUS THROMBOSIS COEXISTING WITH
POSTERIOR REVERSIBLE ENCEPHALOPATHY SYNDROME: A RARE CASE
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ABSTRACT

We report a case 24 years old female presented with severe headache, vomiting, generalized seizures and blurring of vision. Her magnetic resonance - venogram of brain revealed left transverse sinus, sigmoid sinus thrombosis with vasogenic edema in fronto - parietal region mainly involving the subcortical white matter, which was suggestive of posterior reversible encephalopathy syndrome.

KEYWORDS: cerebral venous sinus thrombosis, post partum, posterior reversible encephalopathy syndrome, headache.

INTRODUCTION

Posterior reversible encephalopathy syndrome (PRES) generally presents with headache, seizures, encephalopathy and visual disturbances which are diagnosed on the basis of findings of focal reversible vasogenic edema on magnetic resonance imaging (MRI) of the brain. It was first described by Hinchey *et al* in 1996.^[1] The syndrome is most commonly encountered in association with acute hypertension, pregnancy, preeclampsia or eclampsia.^[2] Patients of Cerebral Venous Sinus Thrombosis may also present like PRES, diagnosed best on magnetic resonance venography brain as occlusion or non-visualization of cerebral vein by thrombus. Here we present a case of a 24 year old female who presented after one week postpartum as headache, vomiting and seizure, and diagnosed as a case of PRES with left Venous Sinus Thrombosis.

CASE PRESENTATION

A 24 year old young lady postpartum by one week presented to emergency medicine department as severe headache, vomiting and generalized seizures. She denied any history of fever, ear or nasal discharge, head injury, neck pain or limb weakness. There was no past history of hypertension, diabetes, epilepsy, oral contraceptive use. This was her first pregnancy and delivery. On examination patient was pale and slightly confused probably in postictal phase. Her blood pressure was

140/90 mm of Hg with pulse rate of 86 per minute and regular. Central nervous system examination was within normal limit except confusion. Deep tendon reflexes were exaggerated in all four limbs and both planters were withdrawal. Laboratory findings revealed hemoglobin 8.6 gm/ dl, total leukocyte count 6000 per mm.^[3] Serum levels of liver enzymes were within normal limits. Renal profile revealed blood urea 22 mg/dl, serum creatinine 0.8 mg/dl. Serum sodium and potassium levels were 141 mEq/L and 4.6 mEq/L with blood sugar level 115 mg/dl. Her ESR, ANA, Anti ds DNA was within normal limits. Her EEG was within normal. Fundus examination was done which revealed evolving bilateral papilledema. In view of this MRI brain with venography brain was planned which revealed a bilateral symmetric areas of signal abnormalities in the fronto- parietal region mainly involving the subcortical white matter appearing hyperintense on T2- weighted and fluid attenuated inversion recovery images and isointense on T1 weighted images. Diffusion Weighted Imaging showed isointensity and increased signal intensity on ADC values, indicating vasogenic edema with mild mass effect in the form of effacement of adjacent sulco-gyral spaces (fig-1). On Venous flow voids, there is loss of flow void in left transverse sinuses and left sigmoid sinuses suggestive of thrombosis (Figure 2). Based on the above imaging findings, a diagnosis of PRES with CSVT was made. She was treated with low molecular

weight heparin and after 3 days overlapped with warfarin, Mannitol and corticosteroids. She improved symptomatically and discharged on warfarin. She was doing well on follow up.

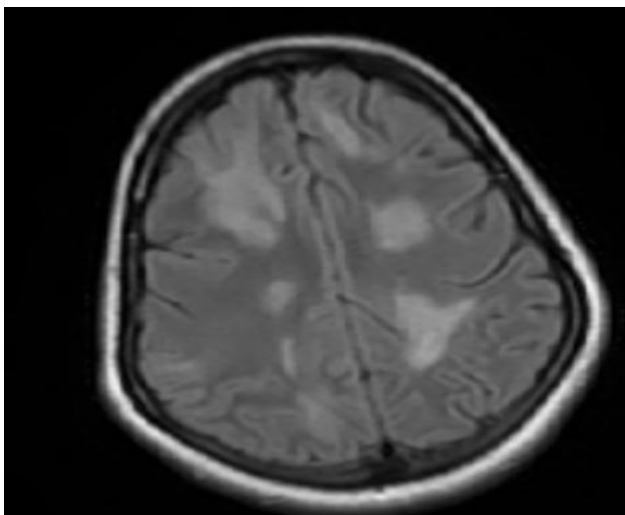


Figure. 1.

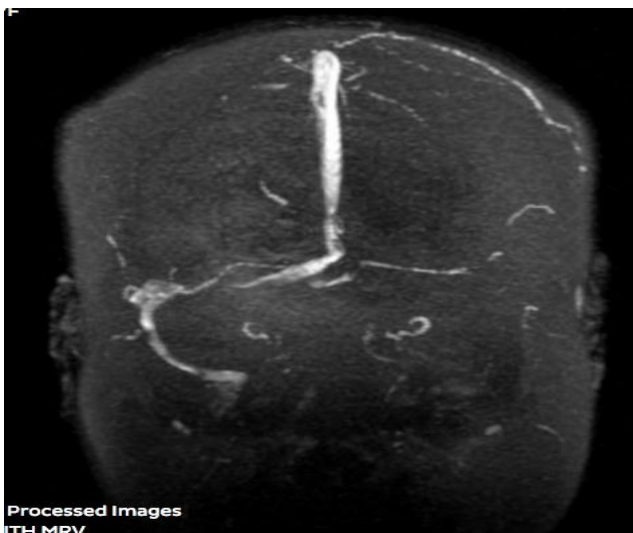


Figure. 2.

DISCUSSION

PRES also known as reversible posterior leukoencephalopathy syndrome, reversible posterior cerebral edema syndrome, and reversible occipital parietal encephalopathy is a clinico-radiological syndrome characterized by headache, seizures, altered consciousness, and visual disturbances. The exact pathophysiological mechanism is still unclear. Possible hypothesis include 1) cerebral vasoconstriction causing subsequent infarcts in the brain, 2) failure of cerebral auto-regulation with vasogenic edema, and 3) endothelial damage with blood-brain barrier disruption further leading to fluid and protein transudation in the brain.³ The possibility of anemia as the predisposing factor, due to inadequate supply of oxygen to the brain may result in dysfunction of endothelial cells, further causing a functional loss or damage to the integrity of the blood-

brain barrier in capillary circulation which cannot be ruled out.^[4] In our patient there was no history of hypertension neither there was any transiently rise of blood pressure during the whole pregnancy and postpartum except mild anemia. CVST is the presence of thrombosis in the cerebral veins and, or dural venous sinus that prevents blood from draining out of the brain leading to cerebral ischemia, infarction, hemorrhage, edema, neuronal dysfunction and hyperexcitability.^[5] The incidence of CVST is about 3–4 persons per million affecting female more than male. The predisposing factors to CVST are protein C, S deficiency, hyperhomocysteinemia, antithrombin III deficiency, prothrombin gene mutations and acquired prothrombotic states (pregnancy, postpartum, antiphospholipid antibody syndrome, oral contraceptive use, hormonal replacement therapy), polycythemia, sickle cell disease, thrombocytopenia, paranasal sinus infection, otitis media, dehydration, uncontrolled diabetes, thyroid dysfunction, connective tissue disease, vasculitis, inflammatory bowel disease, liver disease, smoking head injury, folic acid and vitamin B12 deficiency (acquired hyperhomocysteinemia).^[5] A clinical diagnosis of CVST should be made on the basis of clinical presentation and in the presence of predisposing factors for venous thrombosis.

To conclude, PRES and CVST are two diseases which have similar clinical manifestations and radiological features involving posterior circulation. Therefore possibilities should be made while evaluating postpartum headache, vision disturbances and seizures as both has different strategies.

REFERENCES

1. Hinchey J, Chaves C, Appignani B, et al. A reversible posterior leukoencephalopathy syndrome. *N Engl J Med.*, 1996; 334: 494–500 [PubMed].
2. Roth C, Ferbert A. The posterior reversible encephalopathy syndrome: what's certain, what's new? *Pract Neurol*, 2011; 11(3): 136-144.
3. Sodalagunta, M., Sudulagunta, S., Kumbhat, M., Sepehrar, M., Settikere Nataraju, A., Bangalore Raja, S. Posterior Reversible Encephalopathy Syndrome: Case Report. *Journal of Neurology Research, North America*, 2016; 6(6): 106-110.
4. Wada K, Kano M, Machida Y, Hattori N, Miwa H. Posterior reversible encephalopathy syndrome induced after blood transfusion for severe anemia. *Case Reports in Clinical Medicine*, 2013; 2: 332-334.
5. Boussier MG, Ferro JM. Cerebral venous thrombosis: an update. *Lancet Neurol*, 2007; 6: 162-170.