A CASE REPORT ON POST PARTUM POSTERIOR REVERSIBLE ENCEPHALOPATHY SYNDROME ASSOCIATED WITH HYPERTENSION

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Abstract: Posterior reversible encephalopathy syndrome (PRES) is a clinico-radiological syndrome characterized by headache, seizures, altered mental status and visual disturbances and distinctive neuroimaging findings reflecting white matter vasogenic edema affecting the posterior occipital and parietal lobes of the brain. A 23-year-old female presented to the multispecialty hospital with a complaint of bilateral vision loss after delivery (lower segment cesarean section). She has a surgical history of abortion 2 year ago and lower segment cesarean section one day before the admission (08/01/2024). Her blood pressure was increased during the delivery. No past history of hypertension was found. She visited the ophthalmologist and neurophysician for the same complaint. She was taking multivitamins and iron supplements during her pregnancy. On examination vital signs of the patient were normal and systemic examination was also normal MRI of the brain showed multiple areas of abnormal signal intensity/edema seen involving bilateral parieto-occipital lobe and posterior lobes. MRI findings suggest changes of posterior reversible encephalopathy syndrome. The patient was treated with IV fluids, antibiotics, multivitamins, proton pump inhibitors, antiemetics, and oral antihypertensive agents.

Keywords: Posterior reversible encephalopathy syndrome, Vasogenic edema, Seizures, Bilateral vision loss, Antihypertensive agents

INTRODUCTION

Posterior reversible encephalopathy syndrome (PRES) is a clinico-radiological syndrome characterized by headache, seizures, altered mental status and visual disturbances and distinctive neuroimaging findings reflecting white matter vasogenic edema affecting the posterior occipital and parietal lobes of the brain.[1,2] Both the clinical and imaging characteristics are reversible.[2] PRES was first described in 1996 in a series of fifteen patients with acute neurological symptoms including headache, seizures, visual disturbances and other focal neurological deficits.[3] PRES has many underlying causes and may result from medical treatments such as cytotoxic and immunosuppressive medications (vinblastine, vincristine, gemcitabine, cisplatin, carboplatin, bortezomib, cyclophosphamide, corticosteroids, rituximab, cyclosporine, tacrolimus, sirolimus, methotrexate, mycophenolate mofetil, azathioprine etc.), or may be associated with one of the following diseases: hypertension, sepsis, solid organ transplantation, eclampsia and pre-eclampsia, bone marrow transplantation, hypomagnesemia, hypercholesterolemia, systemic lupus erythematosus, scleroderma, crohn’s disease, rheumatoid arthritis. It may also be associated with the use of cocaine and alcohol intoxication.[4] It is commonly but not always associated with acute hypertension and now increasingly being diagnosed because of increased availability and improvement of brain imaging techniques. PRES was previously known by variety of names such as reversible posterior leukoencephalopathy syndrome, reversible posterior cerebral oedema syndrome and reversible occipital parietal encephalopathy.[5] Clinical presentation includes: headache, seizures, encephalopathy, visual disturbances, homonymous hemianopsia and cortical blindness, altered consciousness presenting as mild confusion, agitation or coma. Other symptoms may include nausea and vomiting. Status epilepticus is common, which maybe generalized.[3,5] CT scan and MRI are the most common imaging test use to diagnose PRES. The typical MRI and CT scan features of PRES includes almost symmetrical hemispheric vasogenic edema affecting subcortical white matter and often extending to the overlying cortex, best seen on MRI with fluid-attenuation inversion recovery (FLAIR) sequences.[4] Treatment of PRES in non-obstetric cases includes withdrawal of offending agents, immediate control of blood pressure, anticonvulsive therapy and temporary renal replacement therapy (hemodialysis/peritoneal dialysis) if required. Aggressive treatment with corticosteroids and cyclophosphamide is effective in cases of SLE – related PRES.
Treatment of PRES in pre-eclampsia/eclampsia patients includes antihypertensive and antiepileptic drugs especially labetalol, nifedipine and magnesium sulfate. The underlying cause has to be removed without delay, and caesarean section has to be performed to reduce feto-maternal stress.[5]

**CASE REPORT**

A 23-year-old female presented to the multispecialty hospital (date of admission – 09/01/2024) with a complaint of bilateral vision loss after delivery (lower segment cesarean section) since 1 day. She has a surgical history of abortion 2 year ago and lower segment cesarean section one day before the admission (08/01/2024). Her blood pressure was increased during the delivery. No past history of hypertension was found. She visited the ophthalmologist and neurophysician for the same complaint. She has no family history of any such disease i.e. all her family members were healthy. She was taking multivitamins and iron supplements during her pregnancy. She has no history of any allergies. On examination vital signs of the patient were normal and systemic examination was also normal (i.e., CNS: conscious and oriented, CVS: S1S2 heard, RS: B/L AE present, clear, P/A: soft). Hematological investigation revealed normal hemoglobin (12.80 mg/dl), decreased RBC (4.31 million/cmm), increased WBC (16500) and neutrophils (80%), normal lymphocytes (14%), eosinophils (3%), monocytes (3%), basophils (0%) and platelets (267000/cmm), decreased PCV (35.20%), normal MCV (81.67%), MCH (29.70 pg), and MCHC (36.36%), increased RDW (16%) and CRP (9.83 mg/dl), normal serum creatinine (0.80 mg/dl), SGPT (1IU/L) and RBS (101 mg/dl), increased TSH (16.40 microU/ml).

Lipid profile and urine analysis of the patient was normal. MRI of the brain showed multiple areas of abnormal signal intensity/edema seen involving bilateral parieto-occipital lobe and posterior lobes. MRI findings suggest changes of posterior reversible encephalopathy syndrome (PRES).

The patient was admitted to medical ward and was managed by Inj. Ceftriaxone 1 g BD, Inj. Pantoprazole 40 mg OD, Inj. Ondansetron 4 mg OD, IV fluids (NS/RLDNS) 80 ml/hr, Inj. Vitamin B12+ Vitamin B3 + Vitamin B6 1500 mcg + 100 mg + 100 mg OD, Inj. Citicoline 500 mg stat then BD and T. Nifedipine 10 mg 1-0-1. On the day of admission neurophysician opinion was taken who advised MRI of the brain and if necessary venogram and angiogram should be done. The patient’s symptom has been improved after the treatment (i.e., regained her vision). The patient was discharged after 3 days of admission. Follow was scheduled 10 after the day of discharge. Discharge medication includes T. Nifedipine 10 mg 1-0-1, T. Thyroxine 25 mcg 1-0-0, Cap. Rabeprazole + Domperidone 20 mg + 30 mg 1-0-0 and T. Biotin + L-methyl folate calcium + Vitamin B12 + Pyridoxine 5-phosphate + Vitamin D3 5 mg + 1 mg + 1500 mcg + 0.5 mg + 200 IU 0-1-0.

**DISCUSSION**

PRES has been increasingly recognized in recent years and has been the cause of recurrent physician consultations for obstetric pre-eclampsia and eclampsia cases.[5] PRES is a neurological disorder which is characterized by variable symptoms which include visual disturbances, headache, vomiting, seizures and altered consciousness.[5] The term PRES has been used based on the similarity in the appearance on imaging, the common location of the parieto-occipital lobe or “posterior” location of the lesions.[1] The exact pathophysiology of PRES is unclear. The various mechanisms explaining the pathophysiology of PRES includes 1) failure or cerebral autoregulation causing vasogenic edema, 2) cerebral vasoconstriction and 3) disruption of the blood brain barrier due to endothelial disruption. Among the various theories that have been proposed for PRES, failure of brain autoregulation causing vasoconstriction is the most accepted one.[5] Brain imaging shows bilateral cortical-subcortical vasogenic edema that falls into three anatomical patterns seen in about 70% of patients: a dominant parieto-occipital pattern (22%), a holohemispheric watershed pattern (30%) and superior frontal sulcus pattern (27%). A central-variant (brainstem) pattern has also been identified, affecting the brainstem, basal ganglia, posterior limb of the internal capsule, cerebellum and periventricular regions, but has no cortical or subcortical involvement.[4]

**CONCLUSION**

In this case report we accentuate a 23-year-old female suffering from postpartum posterior reversible encephalopathy syndrome associated with hypertension with a complaint of bilateral vision loss. Hematological investigation, lipid profile, thyroid function test, urine analysis and MRI of the brain was performed. MRI findings are suggestive of posterior reversible encephalopathy syndrome. Patient was treated with supportive treatment such as iv fluids, antibiotics, antiemetics, proton pump inhibitors, multivitamins and oral antihypertensive agent. The patient’s symptom has been improved after the treatment (i.e., regained her vision).

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REFERENCES