

A Rare Cause of Visual Defect in a Postpartum Woman

Abdulrahman Saifudeen,¹ Sayed Mudasser,¹ George Kottam,² Indulekha Sreekumar,²
Nasir El Amin,² Hafiz El din²

Abstract

Reversible, predominant posterior leucoencephalopathy may develop in patient with preeclampsia, eclampsia or delayed PPE. Its clinicoradiological diagnosis is characterized by clinical findings of headache, visual perception defect, altered mental status, and seizures, in conjunction with radiological findings of posterior cerebral whitematter edema/hypodensities.

From the ¹Department of Internal Medicine, Sultan Qaboos Hospital, ²Department of Anesthesiology, Sultan Qaboos Hospital, Salalah, Sultanate of Oman.

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Address correspondence and reprint request to: Dr. Abdulrahman Saifudeen, Department of Internal Medicine, Sultan Qaboos Hospital, Salalah, Sultanate of Oman.

E-mail: drsaifudeenk@gmail.com

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Introduction

Postpartum eclampsia occurs in 10-45% of women with eclampsia.¹ About half of cases of PPE occurs within 48 hrs after delivery and the remainder occur between 2 days and 4 weeks after delivery [delayed PPE].

Reversible, predominant posterior leucoencephalopathy may develop in patients with preeclampsia, eclampsia or delayed PPE.² The aim of this report is to present a case of PPE without a history of preeclampsia or eclampsia, complicated by PRES.

The clinicoradiological diagnosis is characterized by clinical symptoms of headache, visual perception defects, altered mental status, and seizures, in conjunction with radiological findings of posterior cerebral whitematter edema/ hypodensities.^{2,3,4}

Case Report

A 23 year old Yemeni primigravida with no history of preeclampsia, eclampsia, pregnancy induced hypertension, gestational diabetes mellitus or cardiac disease, underwent a caesarian section (LSCS) for the non progression of labor under spinal anesthesia in Yemen.

Post operatively the patient developed generalized tonic clonic convulsions and was intubated for airway protection and transferred to Sultan Qaboos Hospital, Salalah. On arrival, the patient was found to be in Glassgow Coma Scale (GCS) 10/15. Neurological examination did not reveal any localizing signs and there were no signs of meningitis. The rest of the systemic examinations were normal. Considering the possibility of PPE, intravenous magnesium sulfate was given according to the protocol.

The investigations revealed normal haemogram, biochemistry and coagulation profile. Basic collagen test and septic tests yielded negative results. Urine protein shows +1 proteinuria with 24 hrs urinary protein of 560mg. Uric acid was 330 pmol/L, chest X-ray, ECG, USG Abd, and Echo Cardiography were all normal.

CSF analysis showed WBC: 2/cumm, all lymphocytes, RBC: 220/ cmm, Protein 44 mg/dl, glucose 5.04 mmol, LDH 542. CT imaging of the brain showed hypodensity of posterior cerebral whitematter. (Figs. 1, 2)



Figure 1: CT image of the brain

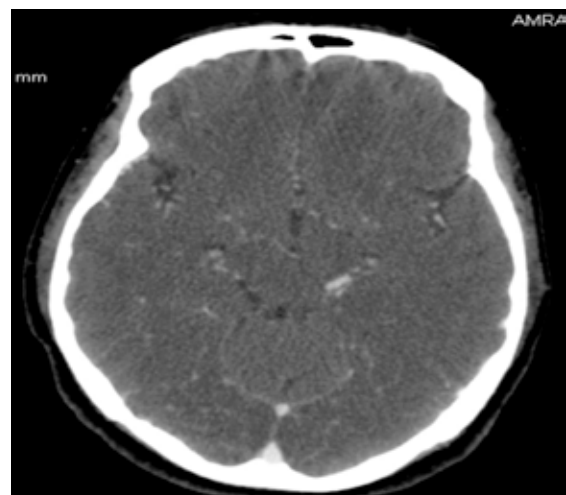


Figure 2: CT image of the brain

On the third day of admission, the patient was extubated and was fully conscious and alert. Detailed neurological examination revealed visual perception defect with normal pupillary reflex and fundal examination. She could not even perceive finger movements but never complained of the visual defects. The patient was ambulatory but bumping into objects on the way due to visual perception defects. Her blood pressure during her hospital stay was within normal range. The visual defects began to resolve after a few days in hospital. She was discharged on Aspirin and vitamin supplements with a diagnosis of PPE complicated by PRES. As the patient was a Yemeni national, she could not be referred for objective assessment of the visual defects or follow up after she was discharged.

Discussion

Eclamptic convulsions can occur before, during or after delivery. PPE occurs in 10-45% of women with eclampsia.⁵ Around half of the cases of PPE occur within 48 hrs after delivery as in the studied patient, while the rest occur between 2 days and 4 weeks after delivery (delayed PPE). The symptoms are often identical to antepartum eclampsia, and include headache, blurred vision, photophobia, altered mental status, scotomas, shortness of breath and abdominal pain. Magnesium sulfate is indicated to prevent further seizures as was given in this patient. Blood pressure in eclamptic patients varies with 22-54% having severe hypertension, while 30-60% have mild hypertension and 16% have no hypertension as was the case in the studied patient.⁶

PRES or reversible cerebral vasoconstriction syndrome otherwise called postpartum angiopathy can be associated with preeclampsia, eclampsia and delayed PPE.⁷ It can be associated with several medical conditions including hypertensive encephalopathy and uremia. Its clinicoradiological diagnosis is characterized by clinical findings of headache, visual perception defect, altered mental status, and seizures in conjunction with radiological findings of posterior cerebral whitematter edema/hypodensities.²⁻⁴ Most evident on T₂ weighted MRI images are the hyper intense lesions located at gray white junction and most often involve the parieto-occipital regions bilaterally. Less often, the lesions involve the frontal, temporal and cerebellum bilaterally. More severe radiological findings have been associated with more severe clinical findings.⁸ The angiographic abnormalities in PRES are dynamic and often subtle, typically resolve within 3 months.⁹ Most of the patients recover completely, although death has been reported from progressive vasoconstriction, stroke and brain edema.¹⁰ In most cases of posterior reversible encephalopathy syndrome, neurological symptoms and cerebral lesions disappear

with aggressive control of BP. Cerebral vasospasm likely contributes to the clinical and radiological findings, which is why nimodipine is the main stay therapy.¹¹⁻¹³ Magnesium sulfate needs to be administered to avoid harmful sequelae of seizures and the blood pressure to be controlled preferably with Calcium channel antagonists.

Posterior reversible leukoencephalopathy syndrome was initially associated with hypertensive emergencies, immunosuppressive treatment, and uremia.¹⁴ However more recently, it has been related to a wide variety of conditions, particularly pregnancy and post partum.¹¹⁻¹³ In most cases of posterior reversible encephalopathy syndrome, neurological symptoms and cerebral lesions disappear with aggressive control of BP. Cerebral vasospasm likely contributes to the clinical and radiological findings.¹¹⁻¹³ Posterior reversible encephalopathy syndrome is reversible when adequate treatment is promptly instituted, but delayed diagnosis and treatment can result in permanent neurological sequelae.

Before a Postpartum woman is discharged from the hospital, she should be made aware of the symptoms of PPE prodrome. Counseling should discuss the warning signs of PPE such as severe persistent headaches, nausea, vomiting, visual disturbances and generalized or focal neurological deficits. Any such symptoms or signs in the postpartum period up to one month of delivery should alert the treating physician of the possibility of PPE, which could be complicated by PRES.

Conclusion

The PRES can be associated with eclampsia during pregnancy or PPE. Imaging studies would be an important diagnostic tool, when patients with eclampsia or PPE present with altered mental status, visual defects or focal neurological signs after seizure episodes.

PRES is reversible when adequate treatment is promptly instituted. Recognizing this syndrome will enable physicians to avoid a delay in diagnosis and institute treatment promptly to avoid permanent neurological sequelae. Control of seizures and blood pressure, with proper counseling should be the goal for management of such cases.

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