International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Aafreen A et al. Int J Reprod Contracept Obstet Gynecol. 2022 Oct;11(10):2895-2897
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20222502

Case Report

Posterior reversible encephalopathy syndrome: a case report

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Received: 19 August 2022
Accepted: 13 September 2022

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ABSTRACT

Posterior reversible encephalopathy syndrome (PRES) is a neurotoxic syndrome that is characterised by neurological symptoms and radiological features. The symptoms include vomiting, headache, seizures, variable loss of eyesight and loss of consciousness. Imaging studies show white mater abnormalities and edema. Management includes control of blood pressure and prevention of seizures along with timely delivery. Some patients might require ICU admission and a multidisciplinary team management. The condition has a good prognosis if timely management is instituted. Here we present a case report on PRES syndrome.

Keywords: PRES syndrome, Neurological, Antenatal, Edema

INTRODUCTION

Posterior reversible encephalopathy syndrome (PRES), a neurological disorder, is characterised by vomiting, headache, loss of consciousness, visual disturbances and seizures. It is associated with pre eclampsia, eclampsia, renal failure and use of immunosuppressive agents.[1-3] It may or may not always be associated with high blood pressure and is now being diagnosed because of availability of brain imaging.[2,4] The diagnosis includes combination of clinical features and radiological findings in the presence of the risk factors.[5]

Cases can have a variable presentation, varying from presentation in early gestation, or presentation at term with severe pre eclampsia. Rare cases in women with normal blood pressure have also been documented.[2,6] Although the condition has been described as benign, as the symptoms are reversible and the radiological findings disappear in due course of time, some cases of brain damage and mortality have been reported.[7,8]

CASE REPORT

A 29-year-old primigravida at 39 weeks period of gestation with transverse lie, with idiopathic thrombocytopenic purpura, was admitted for delivery at our institute. The general physical examination revealed no abnormality. Her vitals and systemic examination were within normal limits. The basic blood work was normal, with the platelets being on the lower side of the normal range. It was decided to perform Cesarean section to deliver the baby with platelets and other blood products at standby. A healthy neonate was delivered. The intra operative and immediate post operative periods were uneventful. The patient was observed every half hourly for two hours and thereafter, every hour, post operatively.

The patient threw a seizure four hours after delivery. However, the blood pressure readings were within normal limits. Patient was stabilised by maintaining her airway, breathing and circulation. Magnesium sulphate loading dose (Pritchard Regimen) was started immediately to prevent further seizures and patient was shifted to ICU for

further management. On recovering from the seizure, the patient reported loss of vision. She was immediately taken up for MRI brain that revealed vasogenic edema. A multidisciplinary team approach helped in the proper management of the patient. The vision improved gradually over 12 hours. The magnesium sulphate was continued for 24 hours post seizure. Patient was kept in ICU for 48 hours and managed, after which she was shifted back to the ward. The patient was discharged on post operative day 5 in stable condition. Before discharge, her blood work up was repeated that did not show any abnormality. The patient was advised routine follow up.

DISCUSSION

PRES is a treatable condition with good prognosis if recognised in time. The pathophysiology is not completely understood, but several hypothesis have been proposed. These include cerebral vasoconstriction, cerebral auto regulation mechanism fails that cause vasogenic edema (most accepted) and endothelial disruption due to systemic inflammatory response.[9] However, the cerebral auto regulation theory (vasogenic theory) does not explain the occurrence of PRES in the absence of hypertension. The cytotoxic theory explains that either endogenous or exogenous toxins cause the insult. Another theory, the immunogenic theory has postulated that T-cell activation and cytokine release causes endothelial dysfunction and deranged autoregulatory response.[5,10] Recently, activation of arginine vasopressin (AVP) by increase in AVP secretion has been postulated in the development of PRES.[11]

Risk factors include fluctuations in blood pressure, renal disease, autoimmune conditions, infection, endocrine disorders, electrolyte disturbances, immunosuppressive drugs and chemotherapeutic agents.[2,5]

The clinical symptoms must be correlated with the findings on imaging. Neuroimaging is characterized by vasogenic edema involving the cortical/subcortical regions which is bilateral affecting the parietal and occipital regions.[5] Lesions are most commonly present in the parietal occipital lobe of the brain. The characteristic findings are superior frontal sulcus and holo hemispheric watershed.[2,12]

Early diagnosis and prompt institution of therapy results in good outcome. The management options include reduction of blood pressure, management of pre eclampsia, prevention and management of eclampsia, prompt delivery if indicated and stabilising any acid base abnormalities or electrolyte disturbance. Some patients might also require ICU care.[2,5]

PRES has a favourable prognosis with complete resolution of symptoms without neurological deficits, after prompt therapy. However, delayed diagnosis and treatment may lead to mortality or neurological deficits in a few.[13]

CONCLUSION

PRES being a benign condition, fatalities have been reported. More studies are needed to define the pathophysiology of the condition, to determine laboratory markers and imaging markers and hence formulate therapeutic interventions.

The recent theory of AVP secretion, can be used as a basis of the use of vaptans in the treatment of PRES. However, more research is needed on the same.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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Cite this article as: Aafreen A, Pankaj A, Pankaj A. Posterior reversible encephalopathy syndrome: a case report. Int J Reprod Contracept Obstet Gynecol 2022;11:2895-7.