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Posterior Reversible Encephalopathy Syndrome – Case Report and a Review

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ABSTRACT

Posterior reversible encephalopathy syndrome (PRES) is a clinical-neuroradiological entity characterized by headache, vomiting, altered mental status, blurred vision and seizures as well as images suggesting white-gray matter edema involving mostly in posterior regions of the central nervous system as seen by magnetic resonance image. The risk factors are malignant hypertension, eclampsia, chemotherapy agents, chronic renal failure, bone marrow transplantation. We present a case of 22 yr primi para who had normal delivery five days back without preeclampsia or eclampsia which is very rare.

Introduction

Posterior reversible encephalopathy syndrome (PRES) first described in 1996, and is a clinic radiological syndrome, with diverse clinical presentation like headache, altered mental status, seizures and visual loss.[1] The most common association is with hypertension, obstetric patients, infection, sepsis and shock[2 3 4] . The lesions in PRES are due to vasogenic edema, predominantly in the posterior cerebral hemispheres, are reversible with treatment. The treatment of PRES depends on the underlying cause.

Case Report

A 22 yr primipara, with no past medical history admitted in Emergency Medicine unit with Headache, blurring of vision, with 2 episode of vomiting. She had a normal vaginal delivery five days back. Clinical examination- pallor present, afebrile, blood pressure was 140/86.

The laboratory examination like, complete blood test, liver function test, kidney function test, clotting parameters, serum electrolytes were in normal range. No evidence of urinary proteinuria. Chest X- ray and Abdominal examination were normal. Fundoscopy normal.

Emergency MRI done which shows abnormal intense signal lesion in brain predominantly in white matter of left occipital lobe with hyper intensity at T2(fig-1).

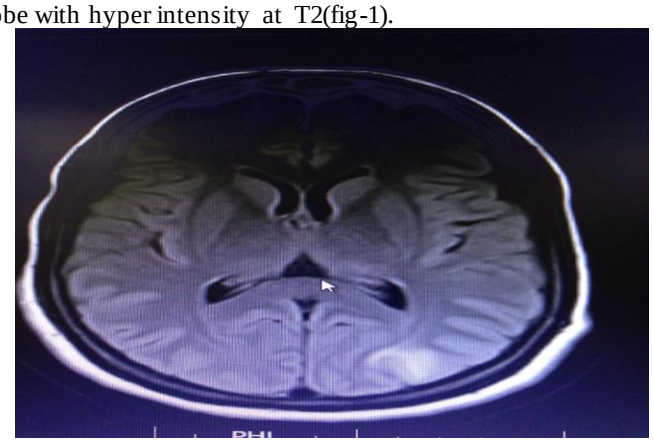

Fig 1. Showing hyper intensities of white matter in left occipital lobe

All these changes are suggestive of PRES. She was given antihypertensive. She recovered and was discharged on day 11.

Discussion

PRES first described by Hinchey in 1996 as Reversible Posterior Leukoencephalopathy Syndrome. PRES has various non-specific symptoms of intense headache, visual problems, altered consciousness and generalized seizures. Rarely patients may develop focal neurological deficits like paresis.

It may develop suddenly or over days.[5]. Risk factors for PRES may be associated with several medical condition besides preeclampsia/eclampsia and hypertension. Immunosuppressive therapy(cyclosporine,tacrolimus), Autoimmune diseases, post – cancer chemotherapy has shown to be associated with infection, sepsis and shock[4].

The characteristic imaging in PRES is cortical or sub cortical areas of hypo attenuation with a predominantly bilateral, symmetrical, posterior distribution in the parietal and occipital white matter on CT or T2 hyper intensity on MR imaging mostly located at gray-white junction of occipital lobe.

The pathophysiology of PRES is not well understood. Vasogenic theory- hypertension with loss of auto regulation and endothelial dysfunction remains a widely accepted consideration for the development of brain edema[6]. Vasogenic edema occurs if cerebral white matter is affected. The cerebral white matter is composed of myelinated fibers in a cellular matrix of glial cells, arterioles and capillaries due to which there can be fluid accumulation leading to vasogenic edema.[7]. Sometimes patients with normal pressure may develop PRES if they have substantial rise in blood pressure which is considered to be within the range of normal pressure. This is believed to be due to some neurotoxic substance[8].

PRES is still an under recognized and untreated condition. The incidence in peripartum setting is not known. This case is very rare as this patient was normotensive before and also after the delivery. During the stay in the hospital also she was normotensive. PRES is seen in the absence of hypertension in 20-40% of patients.

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Conclusion

PRES is a cliniconeuroradiological entity that is caused by a multiple factors, all of which are related to breakdown of blood brain barrier causing edema over the involved region. It is a radiological diagnosis based on which differential diagnosis is made and early diagnosis can be a lifesaving and helpful in avoiding unnecessary complications.

Conflict of Interest

The authors declare that there are no conflict of interest

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