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## CASE REPORT

### POSTPARTUM ECLAMPSIA WITH POSTERIOR REVERSIBLE ENCEPHALOPATHY SYNDROME (PRES)- A CASE REPORT

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#### ABSTRACT

PRES develops frequently in patients of eclampsia/severe PET. Hypertension is absent in  $\square$ 25% of patients and, when present, does not typically reach the level of failed autoregulation. When neurological symptoms occur in a patient of eclampsia or severe PET, MRI/CT should be requested to make early diagnosis of PRES for effective treatment and thus complete recovery.

#### Key words:

PRES,  
Eclampsia,  
Severe PET

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## INTRODUCTION

Eclampsia is an occurrence of convulsion and/or coma with hypertension, proteinuria, and/or oedema during pregnancy between 20 weeks of gestation and 48 hours postpartum without any pre-existing neurological disorders. PRES is one of the complications of the central nervous system due to eclampsia. PRES is a severe neurological condition of the central nervous system which develops in a variety of clinical settings including preeclampsia, eclampsia and has diverse patterns of expression, which can sometimes make diagnosis difficult. The association of PRES with toxemia of pregnancy is well established. Although most women are hypertensive at presentation, blood pressure is reported as normal or only minimally elevated in 23% of patients. Degree of hypertension is not associated with the extent of cerebral lesion and oedema can occur at lower levels of arterial BP because of endothelial damage (Poma, 2014). Characteristic features are often demonstrated on CT scan/MRI, meaning that when the clinical picture is suggestive, this diagnosis should be confirmed by CT/MRI.

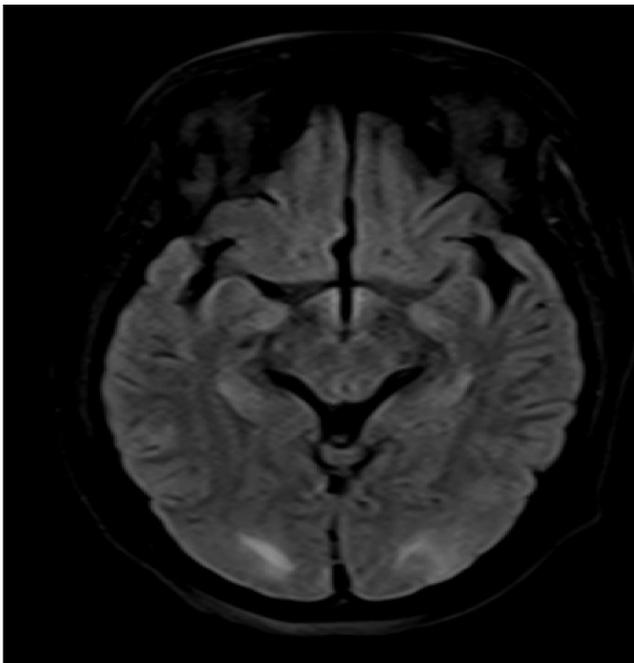
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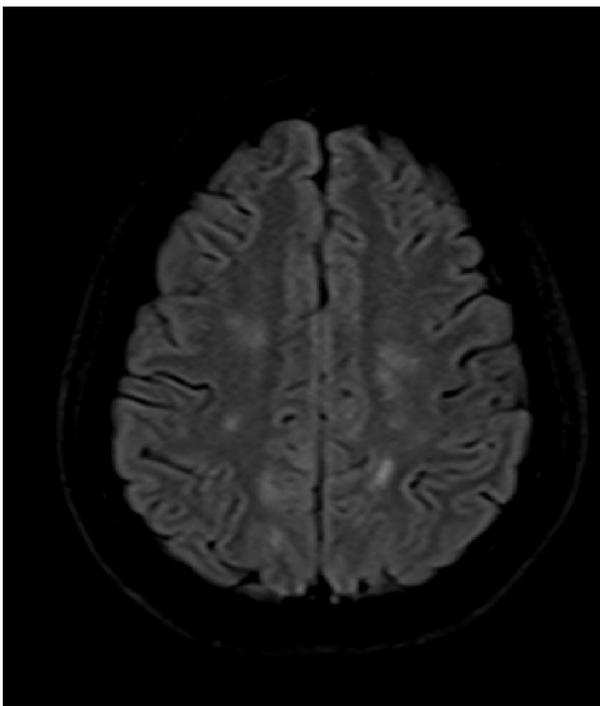
This condition is discussed here as it was found to be quite common in obstetrical setup. 26 years PGR was referred from private institution as a case of severe pre-eclampsia. Her POG was 35+4 weeks and her BP was 220/130. She was given Inj. Magnesium sulphate as per Pritchard regime and injection labetalol, but BP was not controlled. As she was not in labour so emergency LSCS was done and preterm baby of 2.5 Kg with apgar score of 7 and 9 was born. On 1<sup>st</sup> postoperative day her BP ranged between 140/100 to 160/104. She was semi-conscious and had involuntary movements of body, So MRI was advised after medical consultation. MRI showed typical features suggestive of PRES (as shown in fig. 1&2) and a diagnosis of PRES was made.

## DISCUSSION

Posterior reversible encephalopathy syndrome (PRES) is a neurotoxic syndrome associated with a number of complex conditions like preeclampsia /eclampsia, allogenic bone marrow and organ transplantation, autoimmune disease and with high dose chemotherapy. PRES has become synonymous with a unique pattern of brain vasogenic oedema seen in the setting of neurotoxicity.



**Figure 1. MRI Flair tranverse image showing bilateral symmetrical hyperintensities in both occipital lobes**



**Figure 2. MRI flair tranverse image showing hyperintensities in both parietal lobes**

The brain oedema is often widespread but predominates in the parietal and occipital regions, leading Hinchey *et al.* (1996) to suggest the “posterior” description. Clinical symptoms are broad and include headache, visual changes, paresis, hemianopsia, nausea, altered sensorium, Gijtenbeek *et al.*, 1999; Garg, 2001 lethargy and somnolence. Visual perception abnormalities are invariably observed. Symptoms may develop over several days or may be recognized only in the acute setting.

Generalized seizures are common and coma may develop. In approximately 70%–80% of patients, moderate-to-severe hypertension is observed. Blood pressure is normal or only minimally elevated in 20%–30% of patients in eclampsia and most large PRES series. Hepatic ischemia may lead to liver dysfunction and, when severe, haemolysis, elevated liver enzymes, and low platelets (HELLP) syndrome. The elevated blood pressure exceeds the autoregulatory level. The posterior circulation supplied by vertebro-basilar system has poor sympathetic innervations, thus frequently involved. The symptoms tend to resolve after a period of time, although visual changes sometimes remain. PRES is usually reversible but permanent damage can occur if cerebral ischaemia or haemorrhage occurs.

An imaging study (CT or MRI) is needed to establish the diagnosis of PRES as well as to exclude other conditions like cerebral venous thrombosis, acute cerebrovascular accident or tumour. NECT shows patchy bilateral nonconfluent hypodense foci seen mainly in posterior parietal region and occipital lobes followed by lesions in basal ganglion and brain stem. The diagnosis is typically made on MRI of the brain which shows focal regions of symmetric hemispheric oedema. The parietal and occipital lobes are most commonly affected, followed by the frontal lobe, the inferior temporal-occipital junction and the cerebellum. The basic PRES pattern resembles the brain watershed zones, with the cortex and subcortical and deep white matter involved to varying degrees. Cerebral angiography shows diffuse vasoconstriction, focal vasoconstriction, vasodilatation or string of beads appearance. These findings are consistent with that of vasospasm or arteritis. Repeat MRA often demonstrates reversal of the vasculopathy. The pathophysiology of PRES has not been completely elucidated but hypertension and endothelial injury seem to be almost always present. Vasogenic oedema or vasoconstriction resulting in cytotoxic oedema are probably responsible for the clinical and neurological picture (Koch *et al.*, 2001).

### Treatment

A fast multidisciplinary approach is recommended along with a mandatory attempt of fast stabilization of the mother's condition. Patients manifesting symptoms of imminent eclampsia should be started on magnesium sulphate immediately to avoid the harmful sequelae of seizures. Severe hypertension should be controlled to keep BP within safe range while maintaining cerebral perfusion pressure. Inj. Labetalol or hydralazine can be used followed by longer acting antihypertensives. Regular follow up is very essential as this condition is completely reversible and has good prognosis, if timely treated.

### Conclusion

The common findings of PRES in patients with eclampsia suggests that PRES is a core component of the pathogenesis of eclampsia. Therapy targeted at prevention or reversal of PRES pathogenesis may prevent or facilitate recovery from eclampsia. All the treating Obstetricians should be aware and well versed with the entity.

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