

# Posterior Reversible Encephalopathy Syndrome Presenting as Quadriparesis in Pregnancy Induced Hypertension

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## ABSTRACT

Pregnancy Induced Hypertension (PIH) is a condition characterised by raised blood pressure in pregnancy. It affects approximately one out of every 14 pregnant women. Although PIH more commonly occurs during first pregnancy, it can also occur in subsequent pregnancies. It can present with variable complications related to vasospasm. But focal neurologic deficits are extremely rare in patients with PIH. We report a case of quadriparesis due to posterior reversible encephalopathy syndrome (PRES). A 36 year old full term pregnant female was admitted for emergency lower segment caesarean section (LSCS) as a result of uncontrolled PIH with early clinical signs of left ventricular failure. She was recovering well from pulmonary oedema after being provided with mechanical ventilation. However on 4<sup>th</sup> day she developed sudden onset quadriparesis without any alteration in sensorium, bladder & bowel disturbance or any sensory deficit. Diffusion weighted neuroimaging (DWI) was carried out which revealed finding suggestive of PRES. The patient was treated with antihypertensive which followed improvement in neurological deficit. Although rare, PRES should be considered as a potential cause of acute onset focal neurological deficit in pregnant females with PIH. With this case report we have tried to create awareness and vigilance about rare but potentially serious yet salvageable condition like PRES.

**Keywords:** Clinico-radiological entity, Preeclampsia, Pulmonary oedema

## CASE REPORT

A 36-year-old full term pregnant female admitted to the tertiary care hospital with history of acute worsening of dyspnoea and orthopnea for last 6-7 hours, which were there for about 10-15 days. Examination revealed patient to be dyspneic, tachypneic, and tachycardiac without cyanosis but with blood pressure of 180/120 mm of Hg and bilateral crackles at lung bases. Obstetric evaluation revealed full term pregnancy. Patient was provisionally diagnosed to be having full term pregnancy with PIH with acute left ventricular failure. SPO<sub>2</sub> was 91 percent. No past history of skin photo sensitivity or arthralgia. Patient was started on i.v. labetalol and was immediately taken up for lower segment caesarean section (LSCS). Post operatively the patient was put on ventilator due to worsening of dyspnoea and presence of Hypoxemia. Lab reports revealed total leukocytic count of 14800/cumm with 91% neutrophils and Hb of 9.2 mg%. Her serum potassium and magnesium level were within normal (S.K<sup>+</sup> 4.1 meq/ml and S.Mg<sup>2+</sup> 2.0 meq/ml). Post LSCS her blood pressure was still on higher side and this time was started on injectable nitroglycerin and frusemide. On fourth postpartum day the patient developed upper motor neuron (UMN) weakness of all four limbs. Power was grade 2/5 in all four limbs. No involvement of sensory, cerebellar or bladder and bowel were documented. Plantar were bilaterally extensor. In addition to the presence of focal neurological deficit the patient had also uncontrolled hypertension but there was no papilloedema. The patient was taken for MRI which revealed presence of hypo densities in parietal and temporal lobes [Table/Fig-1]. Prothrombin Time, INR, Anti Nuclear Antibody, renal and liver function tests were unremarkable. Due to presence of PIH along with UMN quadriparesis and typical neuroimaging findings, patient of diagnosed to be having posterior reversible encephalopathy syndrome.

Patient was treated with anti-hypertensive drugs (amlodipin in dose of 5mg daily and enalaprilate 5 mg daily). After the control of blood

pressure the weakness of the patient improved progressively and the patient was discharged uneventfully after 14 days.



**[Table/Fig-1]:** MRI Brain of the patient showing densities in parietal and temporal lobes

## DISCUSSION

Posterior reversible encephalopathy syndrome (PRES) is a clinico-radiological entity [1,2] and is described as one of the complication of PIH. It is seen in age group of 4-90 years with a female predominance [3-6]. The clinical manifestations of PRES are protean and may include variable associations of seizure activity, consciousness impairment, headaches, visual abnormalities, nausea or vomiting, and focal neurological signs. Focal neurological signs are either not mentioned at all or reported in only 3% to 17% of cases [7]. PRES can sometimes present similarly to CVA, such as in our case who presented with acute onset quadriparesis. When a patient presents with stroke-like symptoms but with an inconsistent neurological exam, then the stroke mimics such as PRES, seizures, migraine and tumour should be included in the differential diagnosis. PRES aetiologies include hypertension (61%), cytotoxic medications (19%), preeclampsia or eclampsia (6%), autoimmune and systemic conditions including sepsis [8].

The pathophysiology of PRES is still not well understood. Out of common hypotheses one accounts impaired cerebral autoregulation resulting in an increase in cerebral blood flow, whereas the other marks endothelial dysfunction with cerebral hypoperfusion as possible underlying cause. However, both hypothesis concludes the result of cerebral blood perfusion abnormalities is blood brain barrier dysfunction with cerebral vasogenic oedema [1,2]. In our patient we feel that elevated mean arterial pressure led to regional dysautoregulation, consequently causing hyperperfusion and cerebral oedema.

PRES is confirmed radiologically with CT brain suggestive of oedema as bilateral symmetrical hypodensities involving the white matter typically in the parieto-occipital regions. Typical involvement of parieto-occipital lobes is because of better autoregulation of the anterior circulation due to better sympathetic innervations as compared to the posterior circulation [8]. Next investigation of choice is magnetic resonance imaging (MRI brain) which shows high signal intensity on T2-weighted images and fluid attenuated inversion recovery (FLAIR) sequences [9]. FLAIR is frequently preferred for detection of subtle findings. The case described here presented with breathlessness and was found to be hypertensive. Later on she developed acute onset quadriplegia. Initial diagnosis of pre-eclampsia was confirmed with MRI brain and managed accordingly. Thus, this case report emphasises the need for early diagnosis and prompt treatment of PRES to avoid any short or long-term neurological sequelae.

Shashikanth M et al., [10] reported a case of 22-year-old primigravida with 32 weeks of gestation who presented with severe headache, blurring of vision for one day and one episode of generalised tonic clonic seizure with blood pressure of 160/90mm of hg. She was diagnosed as PRES following MRI brain. They managed this case with labetalol and magnesium sulphate. Shreepathi Krishna Achar et al., [11] reported case of PRES in 36 week pregnant lady presenting with headache and seizures. They treated her with injectable labetalol and magnesium sulphate.

**Other complications of pre-eclampsia:** It can affect both the mother and her baby. Complications affecting mother includes - **Fits (eclampsia)** - It is involuntary contraction of the muscles that pregnant women can experience, usually from week 20 of the pregnancy or immediately after the birth.

**HELLP syndrome** – It is a rare liver and blood clotting disorder that can affect pregnant women, occurring immediately after delivery to any time after 20 weeks of pregnancy.

**Stroke** - It results due to raised blood pressure and can manifest either as cerebral haemorrhage or stroke.

**Blood clotting disorder** - This includes disseminated intravascular coagulation resulting in reduce or block blood flow through the blood vessels and possible damage to the organs including pulmonary oedema, renal failure, and liver failure. Problems affecting the baby include low birth weight, neonatal respiratory distress syndrome and still birth.

## CONCLUSION

With this case report we have tried to create awareness and vigilance about rare but potentially serious yet salvageable condition like PRES. Therefore, timely diagnosis of PRES and appropriate preventive and remedial measures may decrease incidence and mortalities.

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