



ABNORMAL VARIANT OF PRES - A CASE REPORT

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ABSTRACT

Posterior reversible encephalopathy syndrome (PRES) its known as hypertensive encephalopathy, is a neurotoxic state that occurs secondary due to the inability of auto-regulatory response to acute changes in blood pressure. Its associated with multiple complex conditions such as preeclampsia/eclampsia, allogeneic bone marrow transplantation, organ transplantation autoimmune disease and high dose chemotherapy. The correlation of imaging and clinical features is necessary for the diagnosis. Here we are going to discuss about the unique abnormal variant of posterior reversible encephalopathy syndrome

KEY WORDS: Posterior reversible encephalopathy syndrome (PRES), clinic radiologic entity, cytotoxic edema



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CASE REPORT

A 30 year old male came with the complaints of Seizures- 3 episodes, tonic clonic movements, Headache & giddiness No history of LOC, vomiting, trauma. Known case of chronic smoker & alcoholic, No history of SHT, Epilepsy, TB, DM On examination he was Conscious, oriented- Pulse-120/Min BP-190/130 mmhg CBG-168 mg/dl, SpO₂- 85%. The fundoscopic examination was normal. Radiological work up was done. Usg abdomen showed normal study. Renal doppler was done & within normal limits. Plain CT brain showed an ill defined asymmetric white matter hypo density (vasogenic edema) was seen involving bilateral cerebral hemispheres and to a lesser extent also involving cerebellar

white matter [Fig 1]. Another 1.7 X 1.1 cm sized acute hemorrhage was also seen in the posterior left temporal lobe [Fig 2]. The patient was also subjected to MRI brain. T2 weighted axial images showed diffuse hyperintensity in the bilateral corona radiata & centrum semi ovale [Fig3]. T2 hyperintensity was also seen in the bilateral temporal lobe white matter [Fig 4]. An ovoid T1-hyperintense T2 & GRE - hypointense lesion seen in the left posterior temporal lobe with perilesional edema [Fig 5]. Diffusion weighted images showed no restricted diffusion. MRA & MRV study of the brain showed no obvious abnormality.

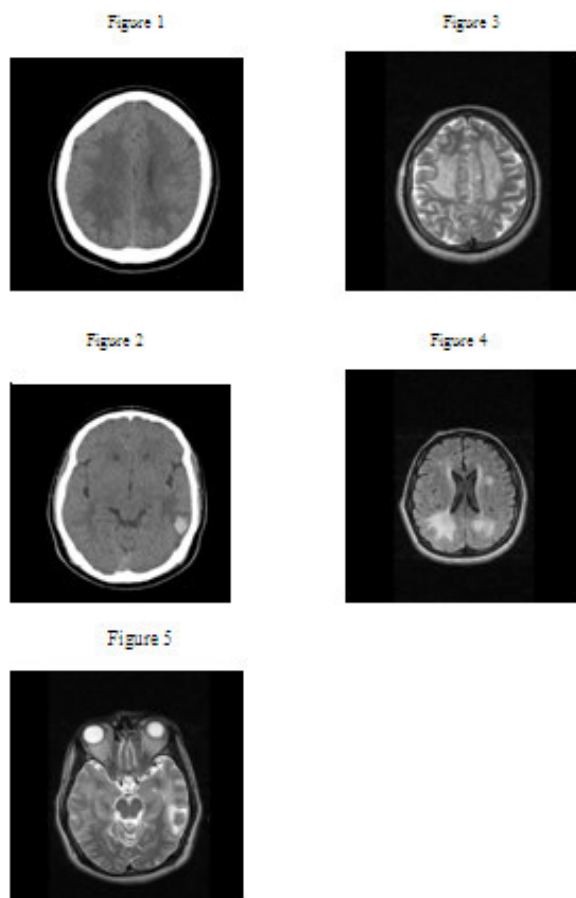


Figure 1- Ill defined asymmetric white matter hypo density s/o vasogenic edema is seen involving bilateral cerebral hemispheres and to a lesser extent also involving cerebellar white matter

Figure 2 -A 1.7 X 1.1 cm sized acute hemorrhage seen in the posterior left temporal lobe

Figure 3-Diffuse t2 hyperintensity noted in the bilateral corona radiata & centrum semi ovale

Figure 4-T2 hyperintensity noted in the bilateral temporal lobe white matter

Figure 5-An ovoid T1-hyperintense T2 & GRE-hypointense lesion seen in the left posterior temporal lobe with perilesional edema

DISCUSSION

Reversible posterior leukoencephalopathy syndrome is a clinicoradiologic entity characterized by headaches, altered mental status, seizures, and visual loss and is associated with white matter vasogenic edema predominantly affecting the posterior occipital and parietal lobes of the brain.¹ There has been some controversy about what the proper term should be for this entity because MRI has shown that lesions can occur in both gray and white matter. Therefore, a new name, *posterior reversible encephalopathy syndrome* (PRES), has been coined.² Most cases of PRES occur with hypertension or immunosuppression, but it can occur with many diverse clinical entities.^{1,3} Since PRES is often unsuspected by clinicians, recognition of the characteristic imaging findings by radiologists is key to diagnosing this syndrome and should prevent deleterious work-ups or therapies. The pathophysiology of PRES is under debate, but it is related to disordered cerebral autoregulation. Two pathophysiologic mechanisms have been proposed regarding cerebral autoregulation—cerebral vasospasm, which results in cytotoxic edema,⁴ and vasodilatation, which results in vasogenic edema.⁵ The latter is more favored by most experimental and clinical data.^{6,7} The pathophysiology of PRES also implicates endothelial dysfunction, especially in cases without severe hypertension, such as pre-eclampsia or cytotoxic therapies.¹ The most characteristic imaging pattern in PRES is the presence of edema involving the white matter of the posterior portions of both cerebral

hemispheres, especially the parieto-occipital regions, in a relatively symmetric pattern that spares the calcarine and paramedian parts of the occipital lobes.¹ However, other structures (such as the brain stem, cerebellum, and frontal and temporal lobes) may also be involved, and although the abnormality primarily affects the subcortical white matter, the cortex and the basal ganglia may also be involved.⁸ Although they are rare, gyriiform signal enhancement or parenchymal hemorrhage can occur in complicated cases.^[9] Recently, studies with diffusion-weighted sequences⁶ and diffusion-tensor sequences⁷ have shown increased apparent diffusion coefficients (ADCs) in the involved regions accompanied by anisotropy loss, which suggests reversible vasogenic edema as an underlying pathophysiology. Therefore, early diagnosis and treatment is essential for the patients prognosis.

CONCLUSION

Posterior reversible leukoencephalopathy syndrome is a clinicoradiologic entity associated with hypertension, immunosuppression, or many diverse clinical entities. Since PRES is often unsuspected by clinicians, recognition of the characteristic imaging findings by radiologists is key to diagnosing this syndrome and should prevent deleterious work-ups or therapies.

CONFLICT OF INTEREST

Conflict of interest declared none.

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