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Case Report

Posterior reversible encephalopathy syndrome: an atypical case

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ABSTRACT

This patient was diagnosed as PRES on MRI brain but was normotensive and was not on any medication but still developed features of PRES. Seven-year-old female child came in the emergency department with GTCS and was treated as a case of status epileptics. Patient was normotensive, febrile and was not on any medication. Patient was investigated for seizure disorder and found to have PRES on MRI brain, hence treated for the same symptomatically and was discharged on anticonvulsants. Patient had seizures but was normotensive and not on any other cytotoxic medication with MRI brain showing PRES like presentation, so patient was labelled with diagnosis of PRES and was discharged on anti-convulsant.

Keywords: Reversible encephalopathy, Seizure disorder, Hypertension, Cytotoxic medication side effect

INTRODUCTION

Posterior reversible encephalopathy syndrome (PRES) is an uncommon clinical syndrome characterized by sudden neurological impairment alongside vasogenic subcortical brain swelling. This syndrome may present with a broad range of clinical symptoms from headache and visual disturbances to seizure and altered mentation.[1]

The pathophysiological mechanisms related to PRES are not well understood. Endothelial damage, along with the ensuing breakdown of the blood-brain barrier and the development of vasogenic edema, seems to be a key element. Abrupt elevations in blood pressure surpassing the limits for cerebral blood flow autoregulation, direct impacts of cytokines, and cytotoxic medications are all likely contributors to endothelial dysfunction. The posterior circulation might be more susceptible to elevated blood pressure due to a relative shortage of sympathetic innervation. Children on immunosuppressant or cytotoxic medications (e. g., calcineurin inhibitors, cyclosporine, tacrolimus) for organ transplantation, cancer, and autoimmune disorders face the greatest risk of developing PRES; renal conditions (e.g., glomerulonephritis, IgA vasculitis) are also risk factors.

MRI is crucial for the diagnosis of PRES, and MRA is useful in that it can identify associated vasospasm.[2]

CASE REPORT

A 7-year-old female child presented in ER with complaints of abnormal jerky movements for preceding 1.5 hours with accompanying frothing of mouth and clenching of teeth. There was no h/o urinary incontinence. There was no h/o any seizure in the past or any family history of seizure. Patient was febrile but was normotensive in the emergency. Patient was treated as a case of status epilepticus in the emergency.

Management and outcome

Investigations-CBC-normal, CRP-negative, dengue, Widal and malaria-negative, blood culture-sterile, urine R/E and c/s-normal, LFT and KFT-normal, electrolytes-normal, fasting blood sugar-101 gm/dl, HBa1C-5.4, coagulation profile-normal, PS for malaria-negative.

USG was w/a normal.

CSF-Glucose-56.7. Blood RBS-144 gm/dl, CSF protein-41.2, cytology-normal, culture-sterile.

MRI brain-Altered intensities along the bilateral parietal and left anterior frontal location as shown in Figures 1 and 2.

Treatment includes-IV anti epileptics, IV antibiotic, IV antipyretic and IV fluids.

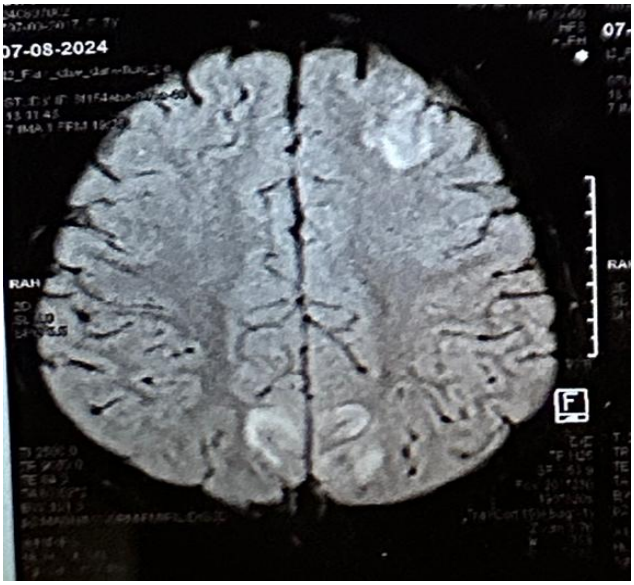

Figure 1: MRI of hypointensities in frontal and occipital regions of brain.

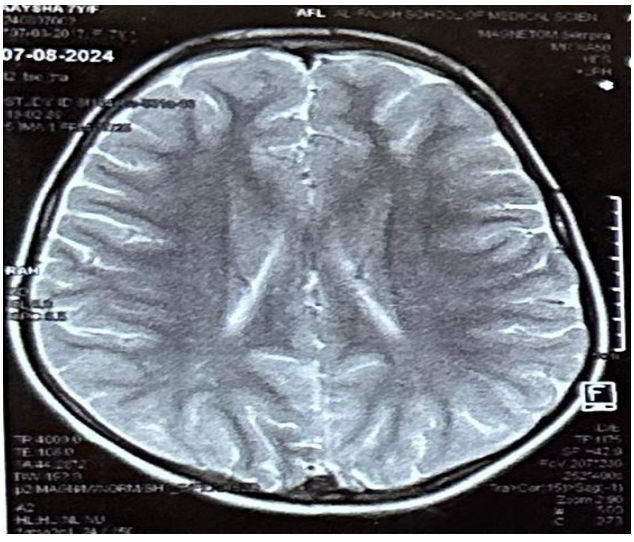

Figure 2: MRI showing no cerebral oedema in the brain.

DISCUSSION

Neurologic signs in PRES (such as seizures, encephalopathy, headache, and visual impairments) emerge over a span of hours to days. Lethargy is often initial sign, sometimes accompanied with phases of agitation.[3] Seizures are nearly universal; focal onset followed by generalization is typical, and status epilepticus can happen. Encephalopathy may vary from slight changes in mental status to complete unconsciousness. Focal deficits (e.g., hemiparesis) occur in a small percentage of patients.

MRI typically displays asymmetric T2/FLAIR high-signal intensities indicating vasogenic edema mainly in the parieto-occipital areas. The brainstem, cerebellar hemispheres, and basal ganglia might also play a role. The alterations are nearly always noted bilaterally and typically affect the subcortical white matter, with or without bleeding (intraparenchymal, petechial, or subarachnoid), restricted diffusion, or contrast enhancement (leptomeningeal, cortical, or nodular). Radiologic resolution usually happens within days to weeks.

The differential diagnosis for PRES includes: vasculitis, hypoxic ischemic damage, infectious or immune-mediated encephalitis, acute disseminated encephalomyelitis (ADEM), toxic leukoencephalopathy (for instance, methotrexate toxicity), or osmotic demyelination syndrome.

No treatments specific to PRES exist. Care should thus be supportive, aimed at restoring a normotensive state, managing seizures with suitable anticonvulsants, and stopping any harmful agents (such as cytotoxic medications). Ongoing infusions of antihypertensive medications can be beneficial in preventing significant variations in blood pressure.[4-5]

In previous studies it was shown that PRES patients were usually hypertensive but our patient was normotensive despite having features of PRES and was treated on the lines of PRES.[6-7]

CONCLUSION

As this patient had seizures but was normotensive and not on any other cytotoxic medication with MRI brain showing PRES like presentation, so patient was labelled with diagnosis of PRES and was discharged on anti-convulsant.

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