POSTERIOR REVERSIBLE ENCEPHALOPATHY SYNDROME (PRES); BRAINSTEM VARIANT IN HYPERTENSIVE EMERGENCY - A Case Report

Sai Abhishek Narra MD[1], Madhulika Kakarla MD[1], Gabriel S Lerman DO,FACOI[2]

1. Department of Internal Medicine, Mercy Catholic Medical Center/Trinity Health, Darby, PA-19023
2. Department of Critical Care Medicine, Mercy Catholic Medical Center/ Trinity Health, Darby, PA-19023.

INTRODUCTION

Posterior Reversible Encephalopathy Syndrome is a clinical-radiological reversible syndrome presenting with various symptoms including altered mental status, seizures, headaches, and visual disturbances. This condition must be identified early in the course, to differentiate it from other conditions, which could lead to altered mentation, as a delay in the treatment could lead to poor neurological outcomes.

CASE PRESENTATION

A 30-year-old male with end stage renal disease on hemodialysis, hypertension, insulin dependent diabetes mellitus, and bilateral blindness presented to the hospital with altered mental status. While in the emergency department, he had an episode of tonic-clonic seizures, and found to have a blood pressure of 230/120mm of Hg. The patient was then admitted to the ICU for Hypertensive Emergency and placed on a Nicardipine drip. Due to his mental status, he was intubated for airway protection and was being monitored for non-convulsive seizures utilizing the point of care EEG monitoring. An MRI brain without contrast indicated brain stem variant Posterior Reversible Encephalopathy Syndrome (PRES) with high FLAIR signal in the brainstem, cerebellar peduncles, occipital lobes. His blood pressure gradually improved on the nicardipine drip, and no seizure episodes were witnessed on the point of care EEG monitor. On day 5 of ICU, his mentation returned to baseline, successfully extubated and downgraded to the medical floor.

DISCUSSION

Posterior Reversible Encephalopathy Syndrome (PRES) is a rare condition seen in patients with uncontrolled hypertension and underlying renal disease, diagnosed by imaging

PRES is associated with clinical conditions such as renal disease, hypertensive emergency, pre-eclampsia/ eclampsia and use of immunosuppressive agents. Less common associations include COVID-19, TTP, AIDS, Guillain-Barres Syndrome. Our patient had end stage renal disease and hypertensive emergency making him more prone to PRES.

Uncontrolled hypertension leads to increased vasogenic edema in the occipital lobes bilaterally affecting the brainstem, leading to encephalopathic manifestations like headaches, visual symptoms, nausea/vomiting altered consciousness and seizures.

Diagnosis is made by T2 weighted MRI images and FLAIR sequences which show hyperintensities in the posterior area of the brain consistent with Posterior Reversible Encephalopathy Syndrome.

Treatment involves aggressive blood pressure control using antihypertensive infusions like calcium channel blockers or beta blockers with a goal reduction of 25% of SBP on the first day. Our patient's blood pressure was controlled on calcium channel blocker infusion.

PRES, as the name suggests, is a reversible condition where timely control of blood pressure and supportive management improves outcomes and prevents lasting neurologic sequalae or death.

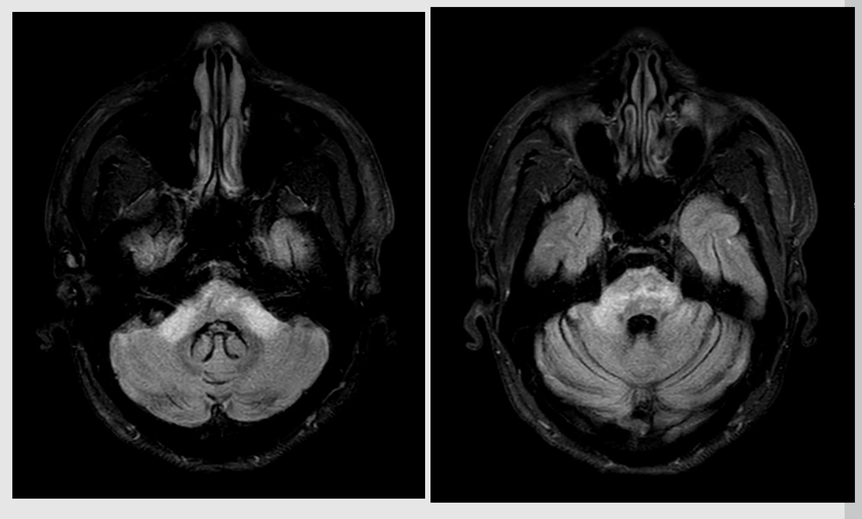

Figure 1. Axial FLAIR sequences of MRI brain showing hyperintensities in the cerebellar peduncles and brainstem

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