



PM&R Scholars

# Posterior Reversible Encephalopathy Syndrome (PRES) as a consequence of hypertensive emergency associated with third degree skin burns

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## Case Diagnosis Posterior Reversible Encephalopathy Syndrome (PRES)

### Case Description

A 56 year-old female presented to the ED with HTN emergency (SBP >240, DBP >190), sepsis and 3rd-degree burns and was admitted to the Burn ICU for management. On POD3 from an I&D, the patient noted transitional vision loss (note vision was normal upon admission). Due to concern for intracranial pathology, a brain MRI was performed and confirmed a diagnosis of Posterior Reversible Encephalopathy Syndrome (PRES). The patient showed signs of parenchymal dysfunction localized to the occipital and parietal lobes on MRI. Neurology, the burn team and physiatry composed the interdisciplinary team. Treatment goals included HTN control, tube feeds, and inpatient rehabilitation. She progressed well and met her functional goals of minimum assistance to modified independence for ADLs during her acute inpatient rehabilitation admission. Her vision returned to normal within 2 weeks from initial presentation.



### Discussion

Posterior Reversible Encephalopathy Syndrome is observed in patients with hypertension, eclampsia, renal dysfunction, immunosuppressant therapy, and sepsis. It is hypothesized that patients with severe hypertension are more likely to suffer from PRES due to specific circulation requirements of the more posterior cerebral lobes; yet 30% of patients with PRES are normotensive. Furthermore, septicemia has been closely linked to PRES development due to intravascular volume depletion. As discussed by recent literature and supported by our case report, many patients present with HTN emergency and during the hospital course blood pressure becomes normotensive. The theory involves hypoperfusion of the cerebrum as a result of sepsis leading to disruption of the endothelium with vasogenic edema, and ultimately PRES.

### Key points/Conclusions

This case demonstrates a unique cause of PRES where sepsis appears to be the most important factor in lieu of hypertension. Clinically, our patient only demonstrated visual disturbances as opposed to multiple neurological symptoms. Although our patient achieved great functional improvements requiring minA/modI for ADLs, recent literature showed that 44% of survivors had severe functional impairment at discharge, reinforcing the importance for identification of the underlying etiology and the need for intensive rehabilitation.



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