Masthead Logo **Pakistan Journal of Neurological Sciences (PJNS)**

Volume 14 | Issue 1 Article 1

3-2019

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POSTERIOR REVERSIBLE ENCEPHALOPATHY SYNDROME (PRES) PRESENTING AS TRANSIENT COMPLETE VISUAL LOSS

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Date of submission:*August 30, 2018* ***Date of revision:*** *November11, 2018* ***Date of acceptance:*** *December 05, 2018*

Posterior reversible encephalopathy syndrome (PRES) is a clinical diagnosis in which patients present with combinations of the following signs and symptoms: focal neurologic deficits, headache, seizures and vision loss. It is more of a radiological diagnosis as vasogenic edema continues to be one of the many features reported.

Case Report

A 33-year old previously healthy woman, presented to the emergency room with complaints of bilateral vision loss for the last 5 hours, 5 days after caesarian section delivery of quadruplets that were conceived using assisted in vitro fertilization. After the delivery, she had a persistent headache for 3 to 4 days that was followed by bilateral visual loss at 12 noon on the 5th day. She experienced a generalized tonic-clonic seizure at 3 pm the same day and at 4pm that resolved after intravenous magnesium sulfate had been administered. At the time of admission, there were no seizures and her blood pressure at that time was measured to be 200/120 mm of Hg. At 9.45 pm, the same day, she experienced another generalized tonic-clonic seizure that lasted for 5 to 7 minutes, with loss of consciousness for 20 minutes after the episode. On examination, her Glasgow Coma Scale was 14/15 and pupils were 4mm, bilaterally reactive. She had no perception of light. The power in all four limbs was normal. The plantar response was flexor bilaterally. Deep tendon reflexes were 2+ and equal in all 4 limbs. A provisional diagnosis of PRES was made and the patient was administered intravenous ceftriaxone, 2g, once daily as empiric treatment in ER. Additionally, the patient was later administered intravenous paracetamol, 1g, as needed, intravenous phenytoin, 100 mg, every 8 hours, intravenous labetalol, 10mg, every 12 hours and intravenous magnesium sulfate, 4g diluted in 400 ml of normal saline at the rate of 133ml/hr. Laboratory work up revealed serum sodium to be 140 mEq/L, potassium to be 3.9 mEq/L and a creatinine level of 0.60 mg/dl. The diagnosis was confirmed by MRI findings along with clinical history that showed high abnormal signals in bilateral occipital lobes on FLAIR, diffusion weighted axial MRI and a minor hemorrhage was revealed on GRE (Figure 1).

(a) (b) (c) (d)

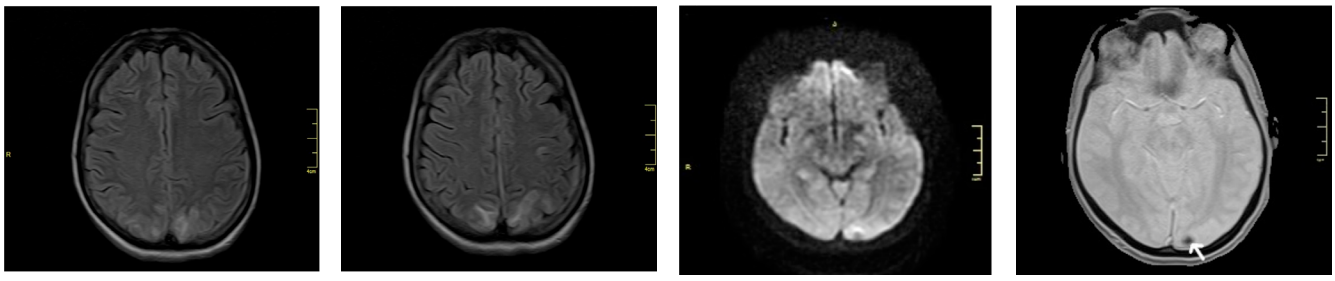
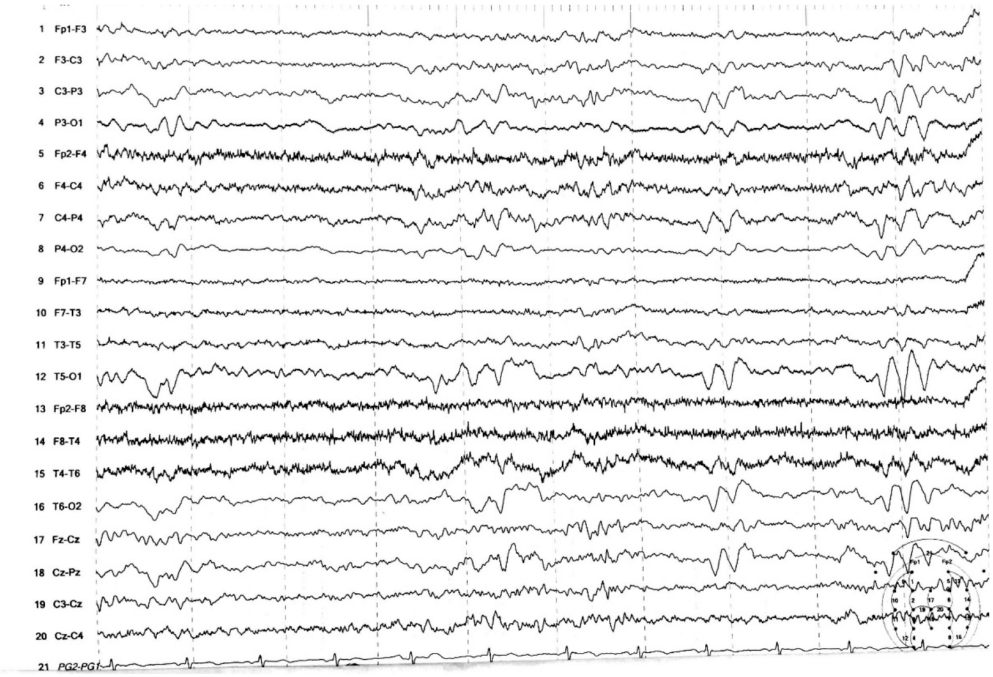


FIGURE 1 (a) and (b). FLAIR images showing high signal areas in bilateral occipital lobes, left more than right
(c). Plain Axial DWI showing diffusion restriction in bilateral occipital lobes, left more than right
(d). GRE image showing microbleed in left occipital lobe

Fig 2. EEG findings that showed slowing over bilateral occipital lobes



Ophthalmology opinion revealed that there was no retinal damage. The patient had a blood pressure of 150/90 mm of Hg, the next day and could count fingers at 6 feet with both of her eyes, showing marked improvement. There was response to light and retinal examination was normal. She was discharged on oral amlodipine, 5 mg, twice daily, oral labetalol, 100 mg, twice daily, oral phenytoin, 100 mg, thrice daily and oral cefixime, 400 mg, once daily.

Discussion:

Posterior reversible encephalopathy syndrome (PRES) has become a widely recognized disorder. It is known to be associated with chronic kidney disease and acute kidney injury[1]. A theory explaining the pathophysiology of the syndrome states that severe hypertension[2, 3] interrupts brain autoregulation that leads to hyperperfusion and cerebral vessel damage, resulting in extravasation of fluids and proteins producing vasogenic edema[3]. This process is accelerated by endothelial dysfunction caused by systemic inflammatory conditions as sepsis, eclampsia, transplantation and autoimmune disease[3]. The prevalence of this syndrome has not been widely established yet.

This case illustrates that patients PRES may occasionally present with bilateral visual loss[4] and seizures particularly in patients who are at a higher risk of either pre-eclampsia or eclampsia in antepartum period. The risk of either disorder is greatly increased with in vitro fertilization[5, 6, 7].

The symptoms resolve with normalization of blood pressure as illustrated by our patient who had marked improvement after administration of oral and intravenous anti-hypertensives[8] and reversal of vision loss. MRI continues to be the gold standard for diagnosis[9]. The radiological findings include subcortical edema involving parieto-occipital areas[10] which was the case for our patient.

This case illustrates that the differential diagnosis of posterior reversible encephalopathy syndrome (PRES) should always be considered in a post-partum female patient presenting with temporary visual loss and a recent history of in vitro fertilization.

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Conflict of interest: Author declares no conflict of interest.
Funding disclosure: Nil
Author's contribution:
Nismat Javed; concept, data collection, data analysis, manuscript writing, manuscript review
Sohail Naseem; data collection, data analysis, manuscript writing, manuscript review
Mohammad Amer Awan; data analysis, manuscript writing, manuscript review
Shahzad Khan Siddique; concept, data analysis, manuscript writing, manuscript review
Arsalan Ahmed; concept,data analysis, manuscript writing, manuscript review