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Case Study: Posterior Reversible Encephalopathy Syndrome (PRES) in a Stroke Patient with Seizures

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Abstract:

Posterior Reversible Encephalopathy Syndrome (PRES) is a condition in which patients present with visual disturbances, headaches, seizures, and impaired consciousness. It can affect a wide variety of patients ranging from infants to elderly, but young and middle aged adults are most commonly affected; females are more likely to be affected by PRES than males. Risk factors such as hypertension, pre-eclampsia/eclampsia, renal failure, cytotoxic conditions and autoimmune conditions predispose patients to PRES. In this unique case, a 63 female patient was admitted to Jefferson Washington Hospital exhibiting classic stroke like symptoms. Patient also began seizing in the ED which was unusual for a stroke. Upon further imaging and neurology consultation, an MRI showed abnormal intensities in the parietal and occipital lobes demonstrating patterns of PRES. The hospital team began promptly treating her and within 10 days, the patient returned to baseline.

Case:

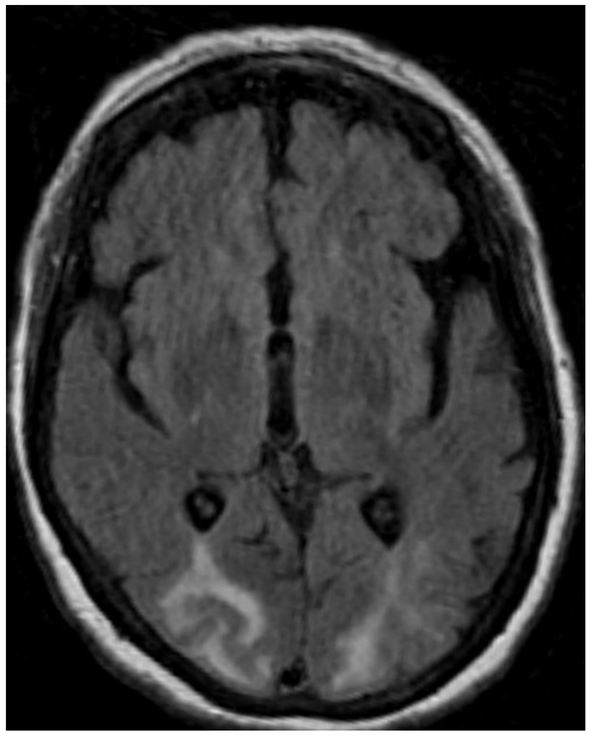
A 63 year old female with a past medical history of salivary gland cancer/parotid mass, ventral hernia, heroin abuse, came to the ED via EMS for generalized weakness, altered mental status, slurred speech, and facial droop. No tPA was given due to an unknown time window. CT in the ED showed a new low-density area in the high left parietal region compared to a prior study. There was a concern for a new possible acute to subacute infarct. Patient was consequently admitted to assess for stroke and had a NIH stroke scale of 3 receiving points for facial droop, speech impairment, and upper extremity weakness. Patient received a full dose of aspirin and Lipitor.

Rapid response was called for a seizure. The patient was noted to have a rhythmic movement of their limbs and their eyes rolling back into their head. Patient had a postictal period afterwards as she did not respond to command and lacked tone when arms dropped. Patient was administered 2mg of Ativan and 2g of Keppra.

Neurology was consulted and noted a NIH stroke scale of 5 as she received 2 more points

Gave an order for 325 mg Aspirin and Plavix and to continue DAPT for 3 weeks then discontinue Plavix. Q4H neuro checks implemented. Keppra at 500mg bid for 1-3 months if patient remains seizure free. Permissive hypertension stated for up to 24 hours with a goal bp of 140-220 then standard 120-140 once patient is neurologically stable.

Axial view of patient's MRI:



MRI was performed showing patchy signal abnormalities within left occipital and parietal lobes. Neurology commented that MRI is suggestive of PRES (posterior reversible encephalopathy syndrome). Cortical ribboning also present.

Conclusion:

Patient remained in the hospital for 10 days. Patient first came in a non-verbal, altered mental status state. However with prompt diagnosis of PRES and proper treatment, patient's symptoms resolved at the end. Patient was conversing and thankful at the end of the hospital course.

History & Significance:

PRES is a rare disorder and is completely treatable if caught early to prevent long-term complications. PRES was first discovered in 1996 by Hinchey and colleagues.

Epidemiology:

The epidemiology of PRES in adults is unknown since it is a relatively new disease and advancements in technology such as MRI imaging has led to increased recognition.

Causes:

PRES syndrome is a constellation of symptoms due to a sequelae of certain inciting factors such as hypertension, pre-eclampsia/eclampsia, renal failure, cytotoxic conditions and autoimmune conditions.

Diagnosis:

There is no formal diagnostic criteria but if someone develops acute neurological symptoms with given risk factors and exhibits similar but not exclusive abnormal intensities in an MRI is sufficient.

Treatment:

There is not one unified treatment for PRES, but rather treatment is aimed at the underlying cause such as HTN, immunosuppressive medications. In this case, we aimed at treating the patient's seizures with anti-epileptics, anticoagulants and blood thinners for concerns of stroke.

Prognosis:

PRES has a favorable prognosis with around 70-90% of people making full recoveries within hours to days. However, 8-17% die. Quantifying PRES is also difficult since each patient will present differently and each with a unique causative factor.