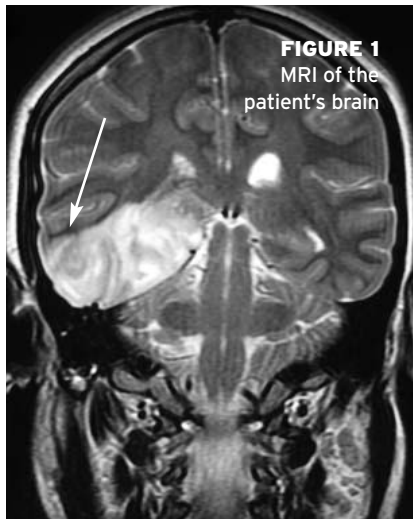


Case of the Month

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CASE

A 21-year-old Hispanic woman, 29 weeks pregnant, presents to the emergency department (ED) with a persistent headache and subsequent seizures. Her headache began 1 week earlier with pain predominantly on the right temporal side and was associated with blurry vision. On the day of the ED visit, the patient's family noticed that she had altered mental status and unilateral extremity weakness after an observed seizure at home. She had no history of a similar headache or seizure activity and had been otherwise well.

While in the ED, the patient was found to have severe hypertension and two unprovoked observed seizures. The seizures were tonic-clonic and lasted approximately 5 minutes each. There was no tongue biting or incontinence noted, and she had positive postictal symptoms for which she was admitted for evaluation.

History The patient had experienced two previous losses of pregnancies. The first was due to intrauterine growth restriction, and the second was a stillbirth. She denied any history of hypertension, heart disease, seizure disorder, migraine headache, HIV infection, herpes simplex virus (HSV) infection, or sexually transmitted infection.

She denied smoking tobacco, intravenous drug use, or alcohol use. The patient had been receiving regular prenatal care at a local clinic and took prenatal vitamins daily. The patient's only sick contact was her husband, who had had a "fever blister" on his upper lip 2 weeks earlier.

Physical examination The patient was somnolent and in no acute distress. Vital signs were BP, 167/105 mm Hg; pulse rate, 88 beats per minute; respirations, 20 breaths per minute; and temperature, 98.1°F. The head was normocephalic and atraumatic, both pupils were equally round and reactive to light, and there was no nystagmus. There were no visual field defects. No papilledema was observed. Auscultation of the heart revealed regular rate and rhythm, with no murmurs, rubs, or gallops. The lungs were clear to auscultation bilaterally. The extremities showed +1 pedal edema. The abdomen was distended with pregnancy and was nontender. During the neurologic examination, the patient's cranial nerves were grossly intact; motor tone and strength were also grossly intact. Deep tendon reflexes were +2.

Laboratory results were as follows: urinalysis, total protein, 18.0 mg/dL; 24-hour urine protein collection, 297 mg/24 hours; WBC count, $17.9 \times 10^9/L$; platelet count, $287 \times 10^9/L$. The patient was HIV negative. CT of the head without contrast revealed a hyperdense pituitary gland. MRI of the head with and without contrast showed gyriform enhancement in the right temporal lobe and right occipital lobe with enhancement of the anterior medulla, pons, and midbrain (see Figure 1). A mass effect with a right to left shift of 3 mm was seen without evidence of hemorrhage or hydrocephalus.

WHAT IS YOUR DIAGNOSIS?

- Pituitary apoplexy
- Eclampsia
- Herpes simplex encephalitis
- Brain abscess

DISCUSSION

The diagnosis was herpes simplex virus type 1 (HSV1) encephalitis. In the ED, the patient was started on magnesium sulfate, lorazepam, and labetalol to control her hypertension and seizure activity. She was presumed to have eclampsia and underwent a cesarean delivery. When the seizure activity did not resolve after delivery, an HSV1 serum antibody test was performed; the result was negative. A fluoroscopy-guided lumbar puncture was performed, and polymerase chain reaction (PCR) of the CSF was initiated. The result of the PCR for HSV1 was negative, although a small amount of atypical lymphocytosis was noted. This is a common finding in early HSV1 encephalitis.

An EEG revealed subclinical seizures with high amplitude delta and theta wave activity originating from the right temporal lobe. The activity lasted 80 to 90 seconds and was associated with polyphasic spike field discharges. These periodic lateralized epileptiform discharges are a common finding in herpes encephalitis. Finally, a temporal lobe brain biopsy was performed, and the specimen was analyzed by the neuropathology laboratory. A viral culture of the tissue was positive for HSV1 DNA.

Acyclovir (Zovirax) is the standard treatment for herpes encephalitis. This patient was treated with acyclovir sodium IV, phenytoin, levetiracetam, and ibuprofen. She was observed for 3 weeks until her phenytoin levels were optimal and seizure activity ceased. She was discharged to home in stable condition to be followed by the neurology clinic 1 week later. [JAAPA](#)

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