Case Report

MRI diagnosis of herpes simplex encephalitis in an elderly man with nonspecific symptoms

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A 78-year-old male presented to the Emergency Department complaining of a 1-week onset of increasing fatigue and anorexia. The patient was previously well but had a history of depression, chronic diarrhea, and hypertension. His examination was remarkable for mild fever (100.1°F). He had no acute neurologic deficits. The patient felt better after intravenous fluids and was discharged to follow-up with the primary care provider.

With no resolution of symptoms and new memory loss, the patient’s primary care provider ordered an MRI which revealed abnormal signal/patchy enhancement of the left temporal lobe (Fig. 1A) indicative of herpes simplex encephalitis (HSE). The patient was admitted, and diagnosis confirmed with viral polymerase chain reaction of the cerebrospinal fluid (CSF). The patient responded to treatment and was discharged with some residual symptoms.

Discussion

HSE has an annual prevalence of 1 in 500,000 cases in the United States and is the most common cause of fatal sporadic encephalitis. Early diagnosis and treatment of HSE is
imperative, as demonstrated by its untreated mortality rate of 70%, with only 3% of untreated survivors retaining normal neurologic function [1,2]. HSE is characterized by symptoms of neurologic infection including focal deficits of the lesioned site (most commonly in the temporal lobe), fever, and seizures [3]. Delay in treatment with acyclovir increases mortality from 19% to more than 70% and may result in permanent neuropsychological impairment [4]. HSE’s high inherent morbidity [5] was demonstrated in this patient’s lasting cerebral changes (Fig. 1B).

The clinical presentation does not distinguish herpes simplex virus (HSV) from encephalitis caused by other viruses such as St. Louis (flavivirus), Eastern equine (togavirus), and Epstein-Barr virus (EBV) so testing to confirm the etiology of HSV is recommended. Culture of HSV from the CSF of adults with HSE has a sensitivity of less than 10 percent, and better results are obtained with polymerase chain reaction testing for antibodies in the CSF; these tests are associated with sensitivity and specificity rates of 75%-85% and 60%-90%, respectively [6]. The clinical presentation of our case is nonspecific in contrast to the more commonly presenting fever and neurologic (seizures or neurologic deficit) symptoms; although about 50% of the cases of HSE occur in patient’s over 50 years old [4], our patient was unusually elderly. It is difficult to know exactly when the clinician should proceed to MRI. Patients may undergo CT and have abnormal findings that lead to further evaluation by MRI, authors recommend this particularly in the elderly. This case reinforces the importance of consideration of HSE in the differential of patient’s with these symptoms.

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