CLINICAL VIGNETTE

A Unique Case of Herpes Simplex Encephalitis

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Introduction

Herpes simplex virus (HSV) is a common cause of encephalitis. However, cases of HSV-2 encephalitis in immunocompetent patients are rare. Here, we present an interesting case of indolent HSV2 encephalitis that illuminates the utility of keeping a wide differential diagnosis when evaluating patients with obscure neurologic symptoms.

Case Report

A 39-year-old male presented to our primary care office with complaints of intermittent blurred vision. He had been hypertensive since age 17, but was well controlled on medication. His husband was HIV positive, but had an undetectable viral load for the past 18 years. The patient's family history was significant for lymphoma in his mother, multiple cancers in his father, and end stage renal disease in his maternal aunt. There was no known history of seizures in the patient or in his family. He had a desk job, rarely drank alcohol, and was a lifetime non-smoker.

Two weeks prior to his visit, he reported stretching out his arms in his bathroom, and noted sudden onset of legs shaking. He fell backwards, and hit his head. He denied loss of consciousness, but did report that he had tingling in his feet for 15 seconds, and then felt quite tired afterwards.

One week prior to presentation, the patient reported feeling "a gas bubble" in his forehead. His head jerked twice, blinked rapidly, and after 15 seconds had a significant headache.

In the week prior to presentation, he reported daily headaches. Pain was described as 2/10 in severity, with associated photophobia. He needed to wear sunglasses in order to alleviate this discomfort.

On exam, his vital signs were normal. Mental status exam was normal. Neurological exam was significant for 4/5 strength in left lower extremities, postural tremor, and difficulty with tandem gait.

As part of a broad workup, MRI and MRA of his brain and neck were notable only for mildly increased T2/FLAIR signal in the left hippocampus. However, this was of questionable significance, and thought to be positional.

Labs were notable for normal serum studies, including chemistry, cell counts, HIV, Lyme Disease, HSV IgM, RPR, MTB-Quantiferon Gold, ammonia, and thyroid function. However, lumbar puncture was significant for HSV Type 2 PCR. The patient was admitted for IV acyclovir treatment, and did well post-discharge. On follow up four weeks later, the patient reported no new symptoms.

Discussion

While herpes simplex virus (HSV) is a common cause of fatal sporadic encephalitis in the United States, it is more common in children. HSV is the causative agent in 10-20% of the 20,000 annual viral encephalitis cases every year.[1-3] However, in nearly all of these cases, the culprit is HSV-1. It is generally accepted that cases of HSV-2 encephalitis are marked by a global encephalitis that has more debilitating neurological symptoms.[3]

Because it is so rare, most of the information about pathogenesis is based on information in HSV-1 cases. The majority of cases of HSV1 encephalitis are thought to be due to oropharyngeal spread. This makes sense given the traditional delineation of HSV1 as primarily oropharyngeal in origin. After initial infection of the oropharynx, the virus can spread along the trigeminal or olfactory nerve and enter the central nervous system. The axons from the face to the trigeminal ganglia are thought to be the main conduit for this viral spread.[4] The other main mechanism is thought to be reactivation of latent HSV within the central nervous system.[3] In both cases, HSV encephalitis often leads to necrosis within the temporal lobe, which is the classic imaging finding. The vast majority of patients are immunocompromised.

Symptoms can be varied, but generally include altered mental status, cranial nerve deficits, hemiparesis, aphasia, ataxia, and focal seizures.[1,5] In our case, ataxia and seizure-like activity were both present.

Lumbar puncture studies typically show lymphocytic pleocytosis, erythrocytosis, and elevated protein.[6] Normal CSF studies can be seen in immunocompetent patients, as was the case in our patient.

Of note, this patient was a homosexual male who participated in oral sex. It is now also generally accepted that changes in sexual practices have blurred lines between "oropharyngeal"

HSV1 and “genital” HSV2. One possible hypothesis in our patient is that sexually transmitted HSV2 infection in the oropharynx was the initial cause of the viral spread to the central nervous system.

This case also is significant for the atypical signs and imaging findings. In contrast to classic teaching, our patient had no temporal lobe involvement, was immunocompetent, had normal cell counts in cerebrospinal fluid, was relatively young, and had a quick recovery with relatively mild signs and symptoms compared to others with this same disease.

The key takeaway points are:

- Traditional delineations of HSV1 and HSV2 are no longer applicable given changes in sexual practices.
- Encephalitis should be considered as part of the differential even in cases with atypical presentations
- HSV encephalitis can occur without positive HSV serology

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