Neurosyphilis Presenting as Herpes Simplex Encephalitis

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We report the case of a 55-year-old man with neurosyphilis that presented with features of herpes simplex encephalitis. Neurosyphilis is easily diagnosed and treated and should be included in the differential diagnosis of herpes simplex encephalitis.

We report the case of a 55-year-old man with a history of alcohol abuse who was admitted with acute onset of confusion. He was well nourished and in no distress but was incoherent and oriented to himself only. His temperature was 38.3°C. Neurological exam revealed no nuchal rigidity or nystagmus, normally reactive pupils, and grossly intact motor and sensory function. The WBC count was 16,000 cells/mm³, with 83% granulocytes. The blood was negative for ethanol. Serum B12, folate, and liver-function test results were normal. Lumbar puncture revealed 79 WBCs/mm³ (93% lymphocytes), 15 RBCs/mm³, total protein level of 71 mg/dL, and glucose level of 65 mg/dL. Gram stain revealed no organisms. CT scan with contrast showed atrophy and an apparent right insular infarct.

Therapy, including ampicillin (12 g/day) and acyclovir (30 mg/kg/day), was initiated. Administration of antibacterial agents was discontinued after 48 h, when both blood and cerebrospinal cultures showed no growth. A working diagnosis of herpes encephalitis was made. There was no clinical improvement, no sign of delirium tremens, and no sign of alcohol withdrawal. Electroencephalogram revealed periodic lateralized epileptiform discharges (PLEDS) in the left fronto-temporal lobes. MRI revealed high signal in the left temporal lobe on spin echo (T2) and fluid-attenuated inversion recovery (FLAIR) sequences and white-matter abnormalities consistent with ischemia (figure 1). On hospital day 6, the PCR for herpes simplex I and II on the original CSF was reported as negative, and acyclovir was discontinued.

On hospital day 8, serum syphilis treponemal IgG titer was found to be 1:64. This was confirmed by microhemagglutination assay. HIV-1–antibody test results were negative. Therapy was begun with penicillin G (18 million units/day). Lumbar puncture on hospital day 10 revealed 16 WBCs/mm³ (95% lymphocytes, 5% monocytes) and a Venereal Disease Research Laboratory–test titer of 1:8. Within 1 week of therapy, the patient was oriented and could hold a complex conversation, although short-term memory deficits remained. He revealed that he had been treated for gonorrhea 25 years earlier, denied other sexually transmitted diseases, but admitted to frequenting commercial sex workers for years.

The classical findings in herpes encephalitis—PLEDS and hyperintense T2-weighted signal in the temporal lobe on MRI—are nonspecific. Meningovascular syphilis, too, can manifest T2-weighted hyperintense signal abnormalities, which are thought to represent cerebral infarctions [1]. Similarly, the find-
ing of PLEDs is nondiagnostic and is most often associated with cortical or subcortical infarction or altered cerebral blood flow [2]. Whitley et al. [3], in reviewing a series of 432 patients who underwent brain biopsy for presumptive herpes encephalitis, found that vascular disease is one of the most frequent imitators in those patients with diagnosable diseases. Remarkably, no cases of neurosyphilis were identified [3]. We know of only 3 other cases reported in the English literature in which neurosyphilis presented with features of herpes encephalitis [4–6]. Nevertheless, because it is both easily diagnosed and eminently treatable, neurosyphilis should be included in the differential diagnosis of herpes simplex encephalitis.

References