Neurological Exam

The differential diagnosis included neurosyphilis and syphilis in HIV-infected patients.

Cardiovascular, Respiratory, Abdominal, Extremity, and Skin Exams: Normal

Investigative Studies

- Serum rapid plasma reagin titer 1:256
- Serum Treponema pallidum IgG and IgM reactive
- CD4 count: 372 HIV viral load: 97,932
- CSF: clear, colorless, 6 RBC, 209 WBC (86% PMNs), protein 84, glucose 42
- CSF Gram stain: Few WBCs, no organisms
- Urine toxicology: Positive for methamphetamine
- CBC, chemistry panel, EKG, CXR: Unremarkable
- Brain magnetic resonance imaging (MRI): 19mm left pontine lesion with expansion into the left midbrain, superior and middle cerebellar peduncle, and inferior thalamus. No acute infarct (Figure 1).

Clinical Course

- The differential diagnosis included cerebrovascular accident (CVA), neurosyphilis, and AIDs-related CNS diseases (Toxoplasmosis, Cryptococcus, and CNS lymphoma).
- On the initial hospitalization the CVA work-up was negative. He was started on HAART therapy, medication for possible CVA, and PCN G empirically for possible neurosyphilis.
- After discharge, the CSF analysis was reactive for Venereal Disease Research Laboratory test and negative for Cryptococcal antigen, Epstein Bar Virus, Cytomegalovirus, Coccioidoides, Toxoplasmosis, fungus, AFB, bacteria and malignancy. PET Scan of the pontine lesion showed hypometabolic activity.
- Re-hospitalization occurred 1 month later for lethargy, dysarthria, dysphagia, and right hemiparesis.
  - Repeat MRI showed enlargement of the left pontine lesion. No acute infarct (Figure 2).
  - Decadron therapy was initiated.
  - Neurosurgery would not biopsy the lesion because of the potential for permanent brainstem injury.
  - Repeat CSF analysis showed a decreasing VDRL level. Repeat CSF studies, as above, were negative.
  - Syphilitic gumma was favored as the cause of the pontine lesion as repeat serial MRIs showed the lesion stayed stable in size, CSF studies were negative for other etiologies, and PET scan negative.
  - MRI 6 months later: Significant size reduction in the pontine lesion. Clinically the patient had gained some right sided upper and lower extremity movement with improved swallowing ability (Figure 3).

Learning Points

- Patients diagnosed with HIV should be offered screening for syphilis and vice versa.
- Presentation of syphilis is often atypical and more aggressive with predisposition for secondary or late stage complications in the HIV-infected patient.
- Treatment medication is the same for both HIV-infected and non-HIV-infected patients.

References


Discussion

Syphilis and HIV Interaction

- Syphilitic ulcers increase risk of transmitting or acquiring HIV.
  - T. pallidum induces the expression of CCR5 and has been shown to increase HIV viral load in genital and serum fluids (Figure 4).
- Natural course of syphilis with HIV infection is often more aggressive.
  - One fourth of HIV patients present with primary and secondary disease. Proportionally more present with secondary disease. Neurosyphilis may occur more frequently and rapidly.
- Treatment
  - HIV-infected patients should be treated for syphilis with the same regimen as non-HIV-infected patients.
  - High dose PCN G is the preferred choice for neurosyphilis. If unable to use PCN G, Ceftriaxone has good treponemocidal activity and CSF penetration.

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Figure 4:

T. Pallidum increases expression of CCR5 on monocytes in syphilitic lesions, thereby increasing the likelihood of HIV transmission.