Answer to Medical Quiz: Images

1. T 1-weighted image reveals enhancement of left temporal lobe. Axial diffusion-weighted image reveals restricted diffusion in left temporal lobe. MRI of brain (Coronal section) showingT2 hyperintensity involving left temporal lobe.
2. Herpes encephalitis
3. CSF study

Herpes Simplex Encephalitis

Herpes simplex encephalitis (HSE) remains a serious illness with significant risks of morbidity and death. HSV remains dormant in the nervous system; rarely, it presents as encephalitis, possibly by direct transmission through peripheral nerves to the central nervous system . This encephalitis is a neurologic emergency and the most important neurologic sequel of HSV[1,2,3] .Neurons are quickly overwhelmed by a lytic and hemorrhagic process distributed in an asymmetric fashion throughout the medial temporal and inferior frontal lobes. Wasay et al reported temporal lobe involvement in 60% of patients. Fifty-five percent of patients demonstrated temporal and extratemporal pathology, and 15% of patients demonstrated extratemporal pathology exclusively. Involvement of the basal ganglia, cerebellum, and brainstem is uncommon.[4]

Herpes simplex encephalitis (HSE) is an acute or sub acute illness that causes both general and focal signs of cerebral dysfunction. It is sporadic and occurs without a seasonal pattern. Although the presence of fever, headache, behavioral changes, confusion, focal neurologic findings, and abnormal cerebrospinal fluid (CSF) findings are suggestive of HSE, no pathognomonic clinical findings reliably distinguish HSE from other neurologic disorders with similar presentations. [5]

Magnetic resonance imaging (MRI) of the brain is the preferred imaging study. Proton-density and T2 images may be more helpful than T1 images. MRI can noninvasively establish many of the potential alternative diagnoses of HSE. Abnormalities are found in 90% of patients with HSE; MRI may be normal early in the course of illness. Temporal lobe involvement, sometimes hemorrhagic, and early involvement of white matter are typical. The inferomedial portion of the temporal lobe is most commonly affected on MRI, sometimes in association with abnormalities of the cingulate gyrus. In CSF study, acutely, a typical "viral profile" is identified. CSF should be sent for HSV-1 and HSV-2 polymerase chain reaction (PCR) study. PCR analysis of CSF for the detection of HSV DNA has virtually replaced brain biopsy as the criterion standard for diagnosis. [6]

References

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