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in 5 patients. Detection of demyelinating lesions with MRI was more sensitive than with CT.

Most HIV lesions were not evident on gross study of the brain. They usually were diffuse; no patient had large, focal, mass-producing lesions. The cerebrum was the most frequent site of involvement (table). Sixteen patients had microglial nodules and multinucleated giant cells at multiple sites in both cerebral hemispheres. The CT and MR findings were correlated well both in cortical atrophy and demyelinating white-matter lesions.

Thin-section multiplanar MRI is useful for screening HIV-positive patients with encephalopathy. If findings (e.g., focal mass lesions) are atypical, contrast CT is indicated. Patients with meningeal symptoms should have both studies.

► Periventricular changes on MRI and cortical atrophy on CT and MRI seem to be the most important scan findings in HIV encephalitis and meningitis. These findings are not predictive and therefore are probably not helpful in arriving at an early diagnosis.

Diagnosis of Acute Herpes Simplex Encephalitis by Brain Perfusion Single Photon Emission Computed Tomography

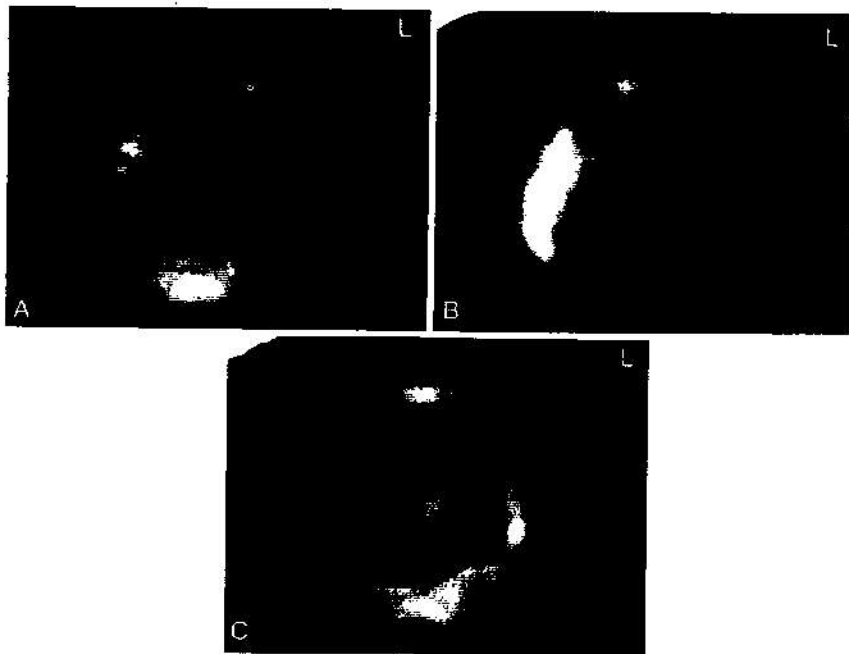


Fig 1-2.—SPECT in HSV encephalitis: case examined with HM-PAO. A, a clearly hyperperfused area in the right anterior and middle temporal lobe 4 days after onset of encephalitis. B, the rate of hyperperfusion has increased, and the area covers also the posterior temporal aspects 12 days after onset. C, an area of hyperperfusion is seen 55 days after onset in the corresponding area where initial hyperperfusion was seen. (Courtesy of Launes J, Nikkinen P, Lindroth L: *Lancet* 1:1188-1191, May 28, 1988.)

Launes J, Nikkinen P, Lindroth L, Brownell A-L, Liewendahl K, Iivanainen M (Helsinki Univ)
Lancet 1:1188–1191, May 28, 1988

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The clinical picture of herpes simplex virus (HSV) encephalitis may be misleading, and even brain biopsy results may be falsely negative. Because early treatment is important, the potential of brain perfusion scintigraphy using the single photon emission computed tomography (SPECT) technique in 14 patients with viral encephalitis was examined. Either ^{123}I -iodoamphetamine (IMP) or $^{99\text{m}}\text{Tc}$ -hexamethylpropyleneamine oxime (HM-PAO) was employed. Seventeen SPECT studies in 6 patients with HSV encephalitis and 10 studies in 8 with non-HSV encephalitis were done. All patients received acyclovir therapy.

Each patient with HSV encephalitis had an area of increased tracer uptake in the affected temporal lobe on initial SPECT study (Fig 1–2). Hyperperfusion increased subsequently in 2 cases, but hypoperfusion followed the hyperperfusion stage, starting 37 days after initial symptoms of encephalitis. No patient with non-HSV encephalitis had focal hyperperfusion during the first 2 weeks. Initial CT scanning results were normal in all patients, and 2 patients with HSV encephalitis had normal results of conventional scintigrams during the time when SPECT results demonstrated hyperperfusion.

Acyclovir therapy should be started when HSV encephalitis is suspected. Using SPECT with IMP or HM-PAO is helpful in distinguishing HSV encephalitis from clinically similar states. However, acyclovir should not be discontinued if SPECT studies fail to show focal abnormality.

► It looks as though the MRI scan, good at diagnosing acute herpes encephalitis, may be bettered by the SPECT scan. It would be happy news for those who struggle regularly with acute encephalopathies if it turns out to be true.

MR Imaging Artifacts of the Axial Internal Anatomy of the Cervical Spinal Cord

Curtin AJ, Chakeres DW, Bulas R, Boesel CP, Finneran M, Flint E (Ohio State Univ)

AJNR 10:19–26, January–February 1989

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Transverse magnetic resonance imaging (MRI) studies of the spinal cord regularly show signal variations related to internal cord anatomy that do not coincide with histologic observations and may reflect technical variations. Therefore, a study of MR images of cadaver spinal cords, phantoms, and a normal subject was done. Short repetition-time and echotime (TR/TE) spin-echo studies, cardiac-gated multiecho spin-echo studies, and gradient-refocused-echo studies were carried out, using both 128×256 and 256×256 matrices with a varying phase-encoded axis.

Significant Fourier truncation and partial-volume imaging artifacts influenced the MRI display of the spinal cord. On short TR/TE images a