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Figure. (A) Fluid-attenuated inversion recovery MRI sequence demonstrates prominent abnormal signal outlining the ventricles. (B) Cytomegalovirus (CMV)-infected macrophages in a patient with CMV ventriculoencephalitis.

“Owl’s eyes” of CMV ventriculitis

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A 35-year-old HIV-positive man with a history of cytomegalovirus (CMV) retinitis presented with fever, diplopia, and progressive obtundation over 1 week. Neurologic examination revealed a fluctuating level of alertness, bilateral gaze-evoked horizontal nystagmus, a left facial palsy, and diffuse areflexia. MRI demonstrated generalized atrophy and ventriculomegaly with increased signal in the left caudate head on T1-weighted, gadolinium-enhanced images. Fluid-attenuated inversion recovery (FLAIR) coronal sequences revealed prominent abnormal signal outlining the ventricular ependyma (figure, A). CSF analysis revealed a mild lymphocytic pleocytosis (7 leukocytes/mm, 96% lymphocytes), elevated protein (57 mg/dL), and hypoglycorrhacia (26 mg/dL, serum glucose 83). PCR for CMV in the CSF was strongly positive. Despite treatment with foscarnet, the patient died 10 days after admission.

CMV ventriculoencephalitis is characterized by subacute delirium, cranial neuropathies, and nystagmus. The pathologic hallmark is the cytomegalic cell, a macrophage containing intranuclear and intracytoplasmic inclusions of cytomegalic virus particles, resembling and referred to as “owl’s eyes” (figure, B). MRI findings in CMV ventriculoencephalitis include diffuse cerebral atrophy, progressive ventriculomegaly, and a variable degree of periventricular or subependymal contrast enhancement.¹ Newer imaging sequences, such as FLAIR, may be more sensitive in detecting ventricular abnormalities.

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