

Figure 28-23 Characteristic findings of viral encephalitis include perivascular cuffs of lymphocytes (A) and microglial nodules (B).

course with clinical manifestations (weakness, lethargy, ataxia, seizures) that evolve during a more protracted period (4 to 6 weeks). Recently, an increased incidence of HSV encephalitis has been observed in patients with rare inherited loss-of-function mutations in the TLR3 signaling pathway, supporting a role for Toll-like receptor signaling in the control of HSV infections.

MORPHOLOGY

This encephalitis starts in and most severely involves the inferior and medial regions of the temporal lobes and the orbital gyri of the frontal lobes (Fig. 28-24). The infection is necrotizing and often hemorrhagic in the most severely affected regions. Perivascular inflammatory infiltrates are usually present, and Cowdry type A intranuclear viral inclusion bodies may be found in both neurons and glia. In individuals with slowly evolving HSV-1 encephalitis, there is more diffuse involvement of the brain.

Herpes Simplex Virus Type 2

Herpes simplex virus type 2 (HSV-2) can infect the nervous system. In adults it causes meningitis, but as many as 50% of neonates born by vaginal delivery to women with active primary HSV genital infections acquire the infection during passage through the birth canal and develop severe encephalitis. In individuals with active HIV infection, HSV-2 may cause an acute hemorrhagic and necrotizing encephalitis.

Varicella-Zoster Virus (Herpes Zoster)

Primary infection with varicella causes one of the childhood exanthems (chickenpox), ordinarily without evidence of neurologic involvement. Following the cutaneous infection, the virus enters a latent phase within sensory neurons of the dorsal root or trigeminal ganglia. Reactivation of infection in adults (*shingles*) usually manifests as a painful, vesicular skin eruption confined to one or several dermatomes. Herpes zoster reactivation is typically self-limited,

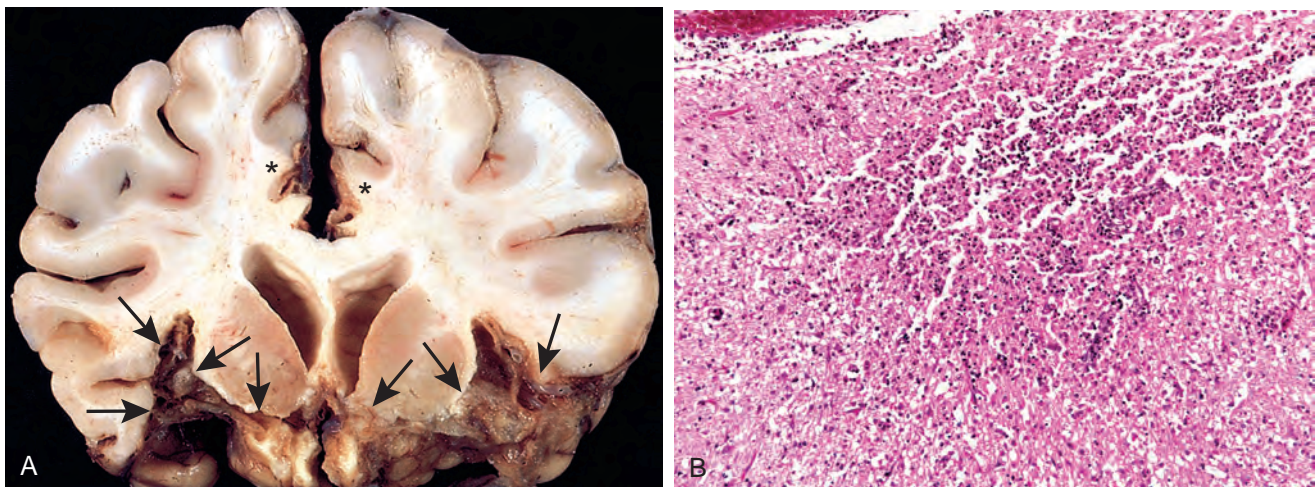


Figure 28-24 A, Herpes encephalitis showing extensive destruction of inferior frontal and anterior temporal lobes (arrows) and the cingulate gyri (asterisks). B, Necrotizing inflammatory process characterizes acute herpes encephalitis. (A, Courtesy Dr. T. W. Smith, University of Massachusetts Medical School, Worcester, Mass.)