

Varicella-zoster meningoencephalitis with CNS vasculitis and acute retinal necrosis in a HIV patient

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Introduction: Varicella-zoster virus(VZV) remains latent in cranial-nerve and dorsal-root ganglia after chicken pox, and reactivates later to zoster. Most cases manifest as cutaneous zoster, but in small cases of elderly persons or immunocompromised patients it has various neurologic complications. Meningoencephalitis is rare and serious complication. we present VZV meningoencephalitis with CNS vasculitis in a HIV patient. The patient had also hearing impairment and eye involvement.

Case report: A 38-years-old male patient without other clinical history presented to the emergency room with a one-week history of lt. ear sudden hearing loss, headache and fever. On physical examination he had oral thrush, but no skin rash. HIV antibody testing was positive. The CD4 T cell count was 9 cells/uL and viral load was 63429 copies. CSF analysis revealed viral meningitis. VZV PCR in CSF was positive. Brain MRI showed extensive stenosis of intracranial arteries, meningeal enhancement and multifocal hyperintensities in temporal lobe, brainstem, and thalamus that is finding of meningoencephalitis[figure 1]. He complained of blurred vision. Ophthalmic test showed bilateral retinitis proceed to acute retinal necrosis[figure 2]. VZV PCR test of aqueous humor was positive. We intended to treat with iv acyclovir. Ophthalmologist injected intravitreal ganciclovir on schedule. CSF test and his symptoms improved. On 14 days, following MRI showed vasculitis aggravated. Transient ischemic attack occurred twice. So he started steroid pulse therapy and anti-retroviral agent. After 3 months, MR brain showed partial improvement of vasculitis. But his vision worsened with retinal detachment and he was operated twice.

Discussion: VZV reactivation in the CNS is more than 4% of AIDS patients. Meningoencephalitis is very rare and life-threatening complication. In a review article, 4 of 11 cases died. VZV also could cause various ophthalmological manifestations such as acute retinal necrosis. We report this case with relatively good progression through proper treatment in a HIV patient with VZV meningoencephalitis and acute retinal necrosis.

Figure 1. Brain MR and Vessel wall imaging(VWI) in varicella-zoster meningoencephalitis with vasculitis

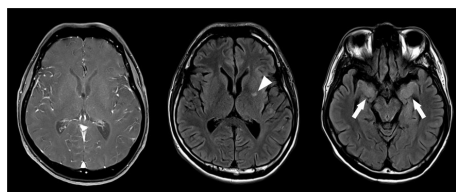
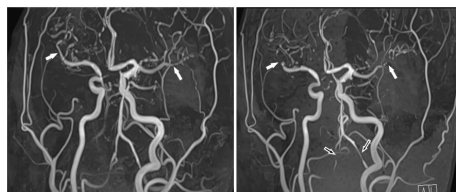


Figure 1. Brain MRI showed leptomeningeal enhancement and multifocal hyperintensities in both medial temporal lobe, lt. basal ganglia that is findings of meningoencephalitis.



VWI showed multifocal narrowing and dilatation of intracranial arteries. (both ACA, MCA, PCA branches) After intravenous acyclovir treatment, following imaging showed aggravated stenosis of arteries. (white arrows) New narrowing of both vertebral artery appeared. (black arrows)

Figure 2. Fundus findings in AIDS patients with rapidly progressing retinitis

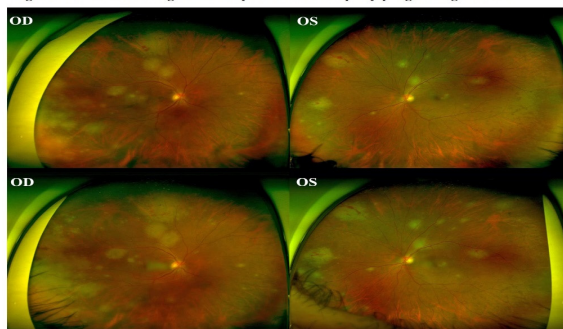


Figure 2. At the first fundus examination (top left: right fundus, top right: left fundus), multiple, focal, and well-demarcated retinal necrosis with obstructive retinal vasculitis was observed (P2000DTx, California; Optos, Inc., Marlborough, MA, USA). In his right eye, anterior chamber inflammation (2+) and anterior vitritis (1+) were accompanied. Anterior chamber paracentesis was performed for viral DNA PCR. Acute retinal necrosis was suspected, and intravitreal ganciclovir injection (2.0 mg/0.04 ml) was started in both eyes. After three days, retinitis fused in his right fundus (bottom left) and progressed to the temporal periphery. In the left fundus (bottom right), multiple retinitis gradually increased, and obstructive vasculitis worsened. Only VZV DNA was detected in the PCR test. The patient was diagnosed with acute retinal necrosis. Subsequently, he received a maintenance dose (1.0 mg/0.02 ml) of intravitreal ganciclovir every three days.