

CNS-associated VZV vasculopathy in a young woman living with HIV

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Introduction

CNS-associated vasculopathy is a rare complication of VZV characterized by risk of cerebral stroke and hemorrhage¹; most cases are diagnosed in immunocompromised patients. To date, few cases describing VZV-induced vasculitis have been published and the optimal treatment strategy is not yet standardized.

Case Presentation

A 31-year-old woman, with a history of childhood HIV-infection and poor adherence to antiretroviral therapy developed thoracic Herpes Zoster (August 2023: HIV-RNA 1000 copies/mL; CD4+ cells 280/mm³). In September 2023 she presented to our Emergency Department with headache and fever. Examination revealed resolving thoracic VZV and negative brain-CT, leading to patient discharge. Two days later, she returned with a right brachio-crural sensory-motor hemisyndrome. Brain imaging showed left thalamic ischemia. Brain-MRI confirmed the known lesion and revealed an additional lacunar ischemic lesion in the right paramedian pontine region, along with signs of leptomeningitis (Figure 1).

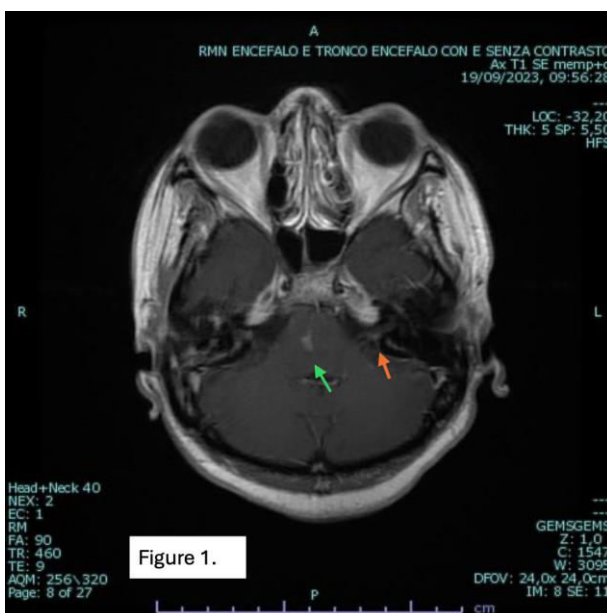


Figure 1. Green arrow: impregnations involving the noted subacute ischemic lesions in the left thalamus and in the right pontine area; orange arrow: impregnation corresponding to the nerve bundles of the VII-VIII cranial nerves bilaterally (finding suspicious for leptomeningeal impregnation)

A lumbar puncture showed WBC count of 166/ μ L and CSF VZV positive PCR. Intravenous acyclovir was initiated. Due to persistent severe headache, a second brain-CT excluded hemorrhagic lesions. Giving the ongoing headache and neck stiffness, a brain-MRI was repeated and revealed multiple nodules compatible with newly onset mycotic aneurysms and hyperintensity in bilateral hemispheric sulci. A brain-CT confirmed a subarachnoid hemorrhage. Cerebral angiography showed more than 20 aneurysms affecting most intracranial arteries (Figure 2).

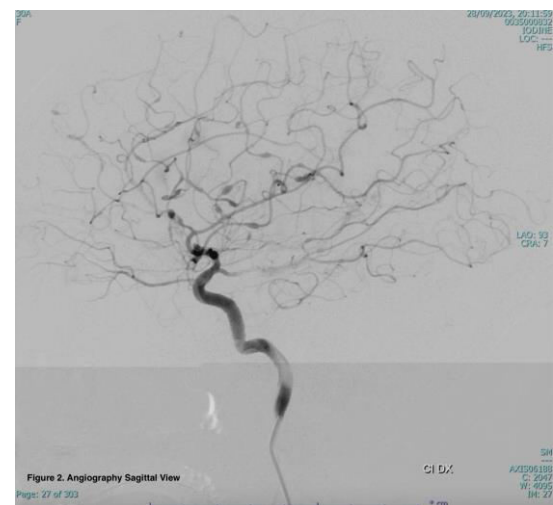


Figure 2. Angiography Sagittal View

A larger right-sided aneurysm was identified as the cause of the subarachnoid hemorrhage and endovascular embolization was performed. The patient began intravenous methylprednisolone 500 mg, gradually tapering, while continuing intravenous acyclovir. Steroid and antiviral therapy concluded after 16 days and 1 month, respectively, due to progressive resolution of fever and headache. The patient was transferred to a subacute facility for motor rehabilitation. The patient repeated an MRI in Oct-2023, the aneurismatic lesions were significantly decreasing. The patient is virologically suppressed on bicittegravir/emtricitabine/tenofovir alafenamide. The only residual neurological symptoms are mild paresthesias, in active follow up.

Conclusion

We here describe a case of CNS-associated VZV vasculopathy with cerebral ischemia, hemorrhage and several mycotic aneurysms in a woman living with HIV and low CD4+ counts. Early suspicion of VZV vasculopathy and a multidisciplinary approach in patients diagnosed with cerebral ischemia and recent history of VZV are crucial²⁻³⁻⁴; a brief course of steroids in association with antiviral therapy, reducing the inflammatory response to VZV, seems associated with clinical benefit.

References

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