Venous Sinus Dysplasia Masking the Diagnosis of Cryptococcal Meningitis

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To the Editor: On November 12, 2015, a 63-year-old woman was referred to a local hospital with a 2-week history of headache and vomiting. She described her headache as generalized and without photophobia or any other visual abnormalities. She was afebrile over the course of the disease. An examination of the cerebrospinal fluid (CSF) was performed 2 days after admission and revealed a white blood cell (WBC) count of 3.8×10^7 cells/L, intracranial pressure of 30 cmH_2O (1 cmH_2O = 0.098 kPa), normal biochemistry, and absence of *Cryptococcus*. Cranial magnetic resonance imaging showed a normal parenchymal image, and magnetic resonance venography (MRV) showed venous sinus dysplasia, possibly indicating left transverse sinus thrombosis [Figure 1a]. Other laboratory studies were unremarkable. However, her vision and hearing decreased within 3 weeks of admission.

On December 22, 2015, the patient was admitted to our hospital presenting with neck stiffness, and Kernig's sign was positive. Both her hearing and vision were decreased, as assessed by physical examination. She had no muscle weakness, sensory disturbance, and ataxia. The tendon reflexes were normal. Fundus examination showed bilateral disc edema. The MRV showed nonvisualization of the left transverse sinus, and the left sigmoid sinus that did not confirm the diagnoses of venous sinus dysplasia or sinus thrombosis [Figure 1b]. One day thereafter, lumbar puncture was performed, revealing an opening pressure of over 40 cmH_2O. We treated her with intravenous mannitol immediately, and the intracranial pressure dropped to 18 cmH_2O, the Queckenstedt test was negative, CSF examination revealed a WBC count of 16/mm^3 and normal glucose and protein levels, while the cryptococcal antigen test was positive. Subsequently, she was diagnosed with cryptococcal meningitis, and treatment with amphotericin B and 5-flucytosine was initiated. Eight days after admission, a repeat lumbar puncture was performed, showing an opening pressure of 30 cmH_2O. CSF was positive for cryptococcal antigen and culture, confirming the diagnosis. In the following days, the headache and blurred vision improved. Informed consent was obtained for this study. The patient was subsequently discharged from the hospital after prescribing oral fluconazole.

Cryptococcal meningitis is a common outcome of cryptococcosis. Its diagnosis can be challenging because of the subacute onset of symptoms and nonspecific presentation. As reported, new onset headaches in elderly adults are rare and likely caused by serious conditions.[1] In addition, 30% of all cryptococcal meningitis cases have no apparent underlying cause or identifiable risk factors.[2] The diagnosis for this patient was challenging, the only presenting symptom was headache, and CSF test was negative for cryptococcal antigen at the time of admission to the local hospital, and she had no apparent underlying cause or identifiable risk factors for cryptococcal meningitis. Notably, MRV revealed venous sinus dysplasia, possibly indicating left transverse sinus thrombosis; however, a normal Queckenstedt test and D-Dimer level ruled out sinus thrombosis. CSF examination revealed that both WBC count and intracranial pressure progressively increased in the 3 weeks following admission. Both levels improved with the administration of amphotericin B and 5-flucytosine, which indicated cryptococcosis, and a differential diagnosis of cryptococcal meningitis was ascertained.

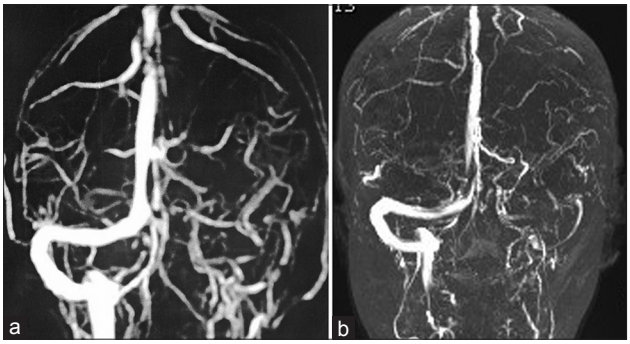

Figure 1: MRV of the patient. (a) MRV of the patient at a local hospital shows left venous sinus dysplasia that does not rule out left transverse sinus thrombosis. (b) MRV of the patient at our hospital shows nonvisualization of the left transverse and sigmoid sinus. MRV: Magnetic resonance venography.

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To our knowledge, there are few reports of venous sinus dysplasia occurring concurrently with cryptococcal meningitis. This case highlights the importance of considering cryptococcal meningitis in elderly adult patients with venous sinus dysplasia. Although cryptococcal meningitis is rare, lumbar puncture and cryptococcal antigen test should be performed in elderly adults with venous sinus dysplasia to aid the differential diagnosis and avoid delays in the initiation of treatment.

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Conflicts of interest

There are no conflicts of interest.

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