Tuberculomas Mimicking Posterior-Circulation Stroke

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Dear Editor,

Posterior-circulation stroke is of grave concern to any physician versed with the mortality and morbidity associated with the condition. Various nonvascular neurological and nonneurological conditions may mimic posterior-circulation stroke.

We report a 29-year-old male with no prior comorbidities who presented to the emergency room of a tertiary-care hospital in northern India with sudden-onset alteration in consciousness following severe vertigo with multiple episodes of vomiting and gait imbalance.

Detailed history-taking revealed the presence of pain in the nape of the neck and low-grade fever for the previous 10 days and a history of chiropractic neck manipulation for the previous 7 days. The possibility of acute posterior-circulation stroke following vertebral artery dissection was considered, and a computed tomography (CT) scan of the head was performed on an emergency basis. The CT scan revealed a large hypodensity in the midbrain, pons, and cerebellum (Fig. 1A). However, CT angiography of the neck and the intracranial vessels did not show any evidence of vertebral artery dissection. Routine hemogram, biochemistry, and chest X-ray findings were normal. The possibility of an alternative diagnosis was considered, based specifically on the history of preceding fever and the normal CT angiography findings. Magnetic resonance imaging (MRI) of the brain revealed multiple ring enhanced lesions in the cerebellum with significant surrounding perilesional edema (Fig. 1B and C). Cerebral spinal fluid (CSF) analysis showed a total count of 250 cells/mm³, predominantly lymphocytes, with proteins 90 at mg/dL and sugar at 35 mg/dL. Cryptococcal antigen, acid fast bacilli stain, and fungal smear findings were negative in the CSF. The blood sugar level was 121 mg/dL. The possibility of multiple infratentorial tuberculomas was considered, and the patient was started on antitubercular therapy with steroids. The patient was completely asymptomatic after 6 months of treatment.

Posterior-circulation stroke is associated with grave mortality and morbidity statistics.¹ A population-based case-control study² found that chiropractic manipulation was positively correlated with vertebrobasilar accidents, specifically in subjects aged <45 years. There are abundant data in the Western literature that have increased public concern about the safety of chiropractic manipulation, but the situation is different in developing countries.

Various nonvascular neurological and nonneurological conditions may mimic posterior-circulation stroke, including acute peripheral vestibular dysfunction, acute intracranial hemorrhage, subarachnoid hemorrhage, basilar migraine, hypoglycemia, central pontine myelolysis, postinfectious disorders, tumors, and many toxic and metabolic disturbances.³ Although chronic infectious and inflammatory disorders may also simulate this condition, a hyperacute presentation should always be addressed immediately.

Tuberculosis is a "great imitator." In 1961, Sievers⁴ termed tuberculosis as the second great imitator after syphilis, based on his observations in the Indian population of southwestern United States suffering from tuberculosis. Tuberculomas of the brain account for 20–30% of lesions occupying the intracranial space in India, and multiple such lesions are present in 15–30% cases.⁵

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Fig. 1. A: Contrast enhanced CT head showing hypodensity of pons and cerebellum. B and C: Shows multiple ring enhancing lesions in cerebellum on contrast enhanced, T1 weighted MRI brain.

Tuberculomas can affect any part of brain, but those with an infratentorial origin are rare. There are isolated cases of brainstem or cerebellar tuberculomas reported in the literature. Though uncommon, infratentorial tuberculomas can be life-threatening.⁶ Gadolinium-enhanced MRI of the brain is a more sensitive modality for detecting tuberculomas.

A retrospective analysis after performing brain MRI in the present patient produced consistent findings. While CT can be performed in most centers, it is not the diagnostic modality of choice, specifically when considering infratentorial lesions. Though clinically hyperacute presentations always warrant consideration of a vascular event, it must be remembered that tuberculosis is a great mimic, and can present with hyperacute presentations as described in the present case.

Conflicts of Interest

The authors have no financial conflicts of interest.

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