Neurobrucellosis Presenting with Tumor-Like Lesion and Vasculitic Involvement

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A 35-year-old man arrived at the emergency department with headache, nausea, and vomiting persisting for 1 week. No abnormalities were detected by neurological examination. On laboratory testing of the patient without a high fever, the C-reactive protein level was 2.88 mg/l, and the erythrocyte sedimentation rate was 46 mm/h. The white blood cell count, hemoglobin level, and platelet count were within the normal range.

Contrast-enhanced cranial magnetic resonance imaging (MRI) detected a peripheral contrast-enhancing nodular lesion close to the Sylvian fissure in the temporal lobe, with widespread vasogenic edema (Figure 1a-c). Diffusion imaging did not identify any characteristics indicative of a particular pathological condition. Computed tomography angiography revealed wall thickening and notable lumen narrowing near the lesion at the M2 segment of the middle cerebral artery (Figure 2). The spinal MRI did not detect abnormal findings.

The cerebrospinal fluid (CSF) analysis revealed a protein level of 125 mg/dl and a cell count of 150/mm^3, with a predominance of leukocytes. The polymerase chain reaction test for *Mycobacterium tuberculosis*, herpes simplex viruses 1-2, cytomegalovirus, and other infectious agents and autoimmune encephalitis antibodies yielded negative results. The *Brucella* agglutination titer was positive at 1/360. The patient was diagnosed with neurobrucellosis based on imaging, laboratory, and clinical assessment findings. Subsequently, a treatment regimen consisting of a daily dosage of 600 mg rifampicin and 200 mg doxycycline was initiated. Control imaging performed 1 week after treatment revealed lesion size reduction and surrounding edema.

Brucella is a zoonotic infection endemic in the Middle East and Mediterranean regions and has the potential to affect several organs and systems.[1] Neurobrucellosis, a condition characterized by central nervous system (CNS) involvement, manifests in approximately 5% of those diagnosed with brucellosis, resulting in notable morbidity and mortality.[2]

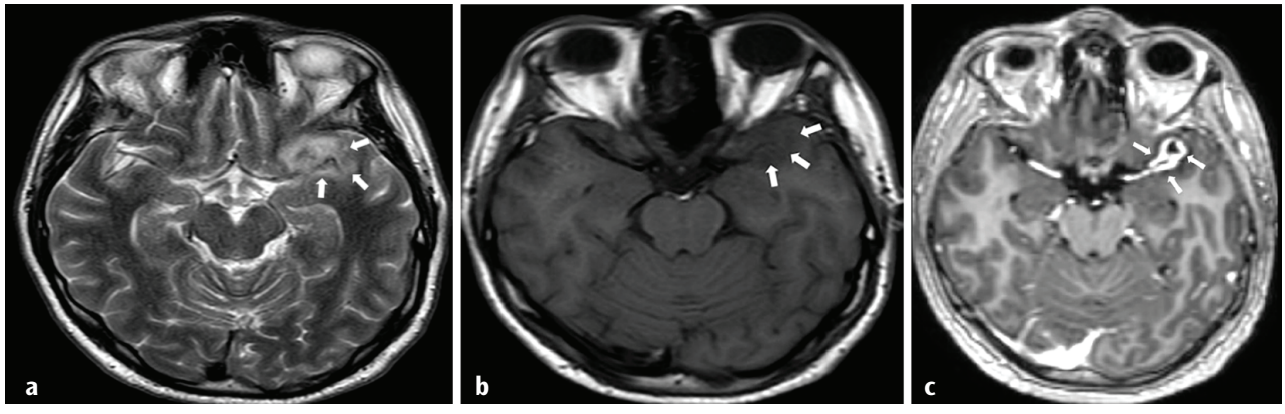

FIG. 1. (a-c) A brain lesion adjacent to the left Sylvian fissure exhibits hyperintensity on T2-weighted images (WI) (a) and low signal intensity on T1-WI (b). Peripheral contrast enhancement is evident in contrast-enhanced 3D-T1 imaging (c).

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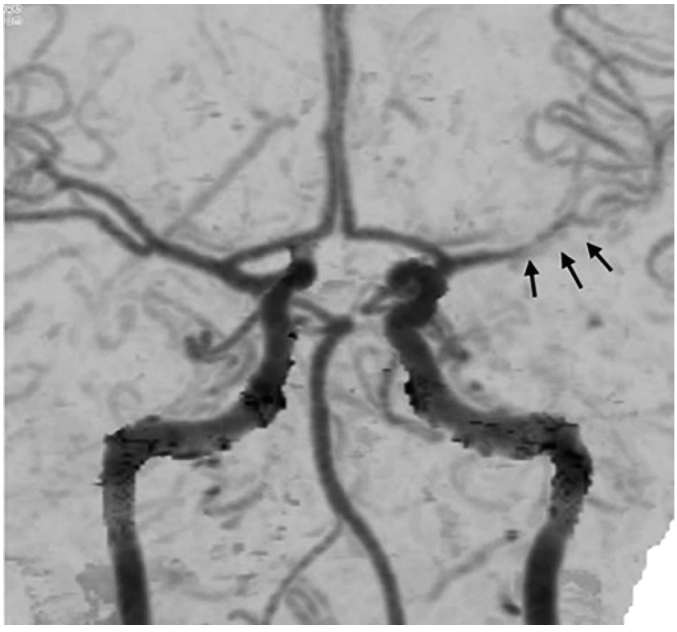

FIG. 2. Cranial computed tomography angiography detected stenosis and irregularities in the wall of the M1 segment of the left middle cerebral artery.

Brucellosis can cause various CNS conditions, including meningitis, meningoencephalitis, abscess formation, cranial nerve damage, mass-like lesions, and vasculitis. Meningitis and meningoencephalitis are the most common brain complications, whereas tumor-like occurrence and vasculitic involvement are extremely uncommon.[2,3]

Early diagnosis and treatment are crucial for patient prognosis; therefore, the condition should always be considered, particularly in endemic regions. In patients with clinically and radiologically suspected neurobrucellosis, the diagnosis may be confirmed by culture and serological assays of the serum and CSF.[4]

In the presented case, rare imaging features, such as mass-like lesions and vasculitic involvement, were observed in a patient with neurobrucellosis.

Informed Consent: Written informed consent was obtained from the patient.

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