

Mycobacterium infection as a mimicker of brain metastasis

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Abstract

Mycobacterium infection is a differential diagnosis to be considered in brain multifocal lesions with peripheral enhancement.

KEYWORDS

infectious diseases, neurology, neurosurgery, oncology

A 52-year-old Caucasian man presented with headache, progressive left eye sight impairment and 18 Kg weight loss in 5 months.

Brain computed tomography (CT) and brain magnetic resonance imaging (MRI) are demonstrated (Figure 1A,B).

A chest CT showed mediastinal lymph node enlargements, without parenchymal lesions. Cerebral spinal fluid analysis and cultures showed no abnormalities.

Biopsy showed a granulomatous lesion with detection of acid-alcohol resistant bacilli (Figure 1C,D).

The patient received treatment for quaternary tuberculosis, with significant clinical improvement.

Multifocal lesions with peripheral enhancement (ring-enhancing pattern) can be a diagnostic challenge. Even advanced sequences, such as perfusion, can be confusing, as mycobacterium infection lesions can show hyperperfusion, which is most typically seen in multiple metastatic lesions.¹

Cerebrospinal fluid (CSF) findings could be unremarkable or demonstrate a nonspecific increase in protein.² CSF culture is usually negative and the diagnosis usually depends of neuroimaging findings, protein-purified derivative reactivity, and response to antituberculous therapy.²

Early recognition on the imaging and treatment of this condition plays an important role in patient morbidity and mortality.²

Biopsy is still the main tool for the definitive diagnosis.²

Mycobacterium infection is a differential diagnosis to be considered in multifocal ring-enhancing lesions.

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CONFLICT OF INTEREST

The authors declare no competing interest.

AUTHOR CONTRIBUTIONS

GSOW: drafting the article and final revising. GRA-M: histological evaluation and final revising. LSQ: histological evaluation and final revising. FR: conceived of the presented idea; neuroimaging evaluation; and drafting the article and final revising. All authors contributed to the final manuscript.

ETHICAL APPROVAL

This study was approved by our Institutional Ethics Committee (CAE number 36223320.7.0000.5404).

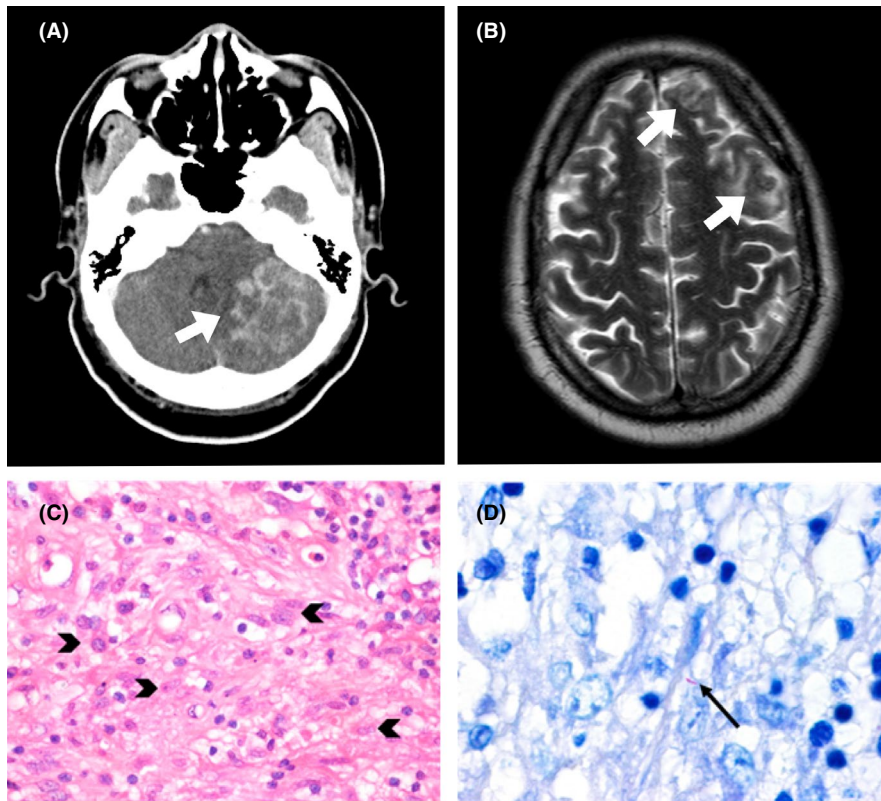



FIGURE 1 A, Axial brain computed tomography (CT) with contrast showing multiple ring-enhancing lesions with perilesional edema and mass effect in the left cerebellar hemisphere (white arrow). B, Axial brain magnetic resonance imaging (MRI) with a heterogeneous lesion in the left frontal lobe with hypointensity on T2-weighted image (white arrow). C, Brain histology with hematoxylin and eosin staining, 400× magnification, showed epithelioid histiocytes (black arrowheads). D- Ziehl-Neelsen staining, 1000× magnification, revealed scattered bacilli (black arrow)

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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