Acinetobacter lwofii Brain Abscess in a Post-Coronavirus Disease 2019 Patient

Lakshmi Krishnasamy1, Venkatraman Indiran2, Santhanam Rengarajan3

1 Department of Microbiology, Sree Balaji Medical College and Hospital, Bharath Institute of Higher Education and Research, India
2 Department of Radiology, Sree Balaji Medical College and Hospital, Bharath Institute of Higher Education and Research, India
3 Department of Neurosurgery, Sree Balaji Medical College and Hospital, Bharath Institute of Higher Education and Research, India

Address for correspondence Santhanam Rengarajan, MCh, Department of Neurosurgery, Sree Balaji Medical College and Hospital, Bharath Institute of Higher Education and Research, Chennai 600044, India (e-mail: santhanamrengarajan@gmail.com).

A 71-year-old man who recovered from coronavirus disease 2019 (COVID-19) pneumonia presented with seizures without any neurological deficits. Contrast magnetic resonance imaging scan brain revealed a rounded thin-walled peripherally contrast-enhancing lesion in the left frontal lobe with perilesional edema, mass effect, and midline shift with few eccentric nodular areas without restriction on diffusion-weighted images with lipid lactate peak in MR spectroscopy.

Fig. 1 (A) Contrast MRI brain showing left frontal peripherally enhancing cystic lesion with central nonenhancing areas and focal isointense particulate material in the walls. (B) T2-weighted image showing hyperintense cyst with hypointense rim and nodular foci; diffusion-weighted image showing the lack of restriction in the contents with hemorrhagic areas in the wall of the cyst. MRI, magnetic resonance imaging.

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Possibilities of neoplastic versus fungal abscess were considered. The hemorrhagic aspirate revealed *Acinetobacter lwofii* sensitive to cefoperazone and meropenem. Follow-up scan showed complete resolution of the abscess (Fig. 2).

Meningitis, ventriculitis, and brain abscess caused by *Acinetobacter baumannii* species have been reported earlier.\(^1\)\(^2\) This is the first-ever report of brain abscess caused by *A. lwofii*. The radiological features of this case were also peculiar, though not characteristic. The absence of restriction on diffusion-weighted images in the contents of the cyst with hemorrhagic areas in the wall favored the possibility of either a neoplastic cyst or a fungal abscess and was not consistent with pyogenic abscess.

Though abscesses classically show restricted diffusion in the central portion, a dual rim sign on susceptibility-weighted imaging, and increased flow in perfusion imaging, exceptions have been observed in the form of low diffusion signal comparable with brain tumors. Newly formed thin vessels seen in the abscess wall may rupture with rising intracranial pressure, resulting in hemorrhage within the abscess. Thus, even though hemorrhage in brain abscess is rare, the diagnosis needs to be considered when appropriate.

Multidrug resistance among the *Acinetobacter* species makes the treatment of the cases a great challenge. In our case, the response to cefoperazone and meropenem was good and resulted in complete clearance of the infection. The rarity of brain abscess being caused by a commonly found organism such as *A. lwofii* along with peculiar radiological findings makes this case report interesting as a good learning material. The surgical strategies would be different for neoplastic lesions, and obtaining the correct diagnosis early helped in avoiding major surgical interventions in this patient who was recovering from COVID-19 pneumonia along with multiple comorbidities.

Brain abscess in humans due to *A. lwofii* is being reported for the first time. The peculiar radiological features signal the possibility of alternative and uncommon diagnoses. Early diagnosis of *A. lwofii* infection and appropriate antibiotic therapy based on the culture and susceptibility report are essential in preventing the emergence of antibiotic resistance.

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**Conflict of Interest**
None declared.

**References**
\(^1\) Chen SF, Chang WN, Lu CH, et al. Adult *Acinetobacter meningitis* and its comparison with non-*Acinetobacter* gram-negative bacterial meningitis. Acta Neurol Taiwan 2005;14(3):131–137