Necrotizing granulomatous meningoencephalitis due to *Balamuthia* in an immunocompetent child

Figure 1 Brain imaging (CT and MRI) showing mass lesion

(A) Partially calcified mass on CT. (B, C) Pregadolinium and postgadolinium T1-weighted coronal MRI with irregular peripherally enhancing lesion. (D–F) Axial fluid-attenuated inversion recovery images showing serial progression (preoperative and postoperative).

A 4-year-old boy presented with headache for 2 months. Neuroimaging revealed a partially calcified left parieto-occipital lesion suspicious for tumor (figure 1, A–C); biopsy showed necrotizing granulomatous meningoencephalitis. Postoperative MRI showed rapid progression (figure 1, D–F). He developed fever and seizures and died within 3 weeks despite IV vancomycin, ceftazidime, metronidazole, amphotericin, and fluconazole. Autopsy revealed *Balamuthia mandrillaris* (figure 2). This free-living amoeba causes granulomatous encephalitis in immunocompromised and immunocompetent hosts (as was our patient),¹ mimicking tumor and acute disseminated encephalomyelitis. It is usually fatal, without definitive therapy. Clinical presentation and imaging are nonspecific, making antemortem diagnosis challenging.²

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Figure 2 Histopathology from brain lesion

(A) Widespread encephalitis, necrosis, and angiocentric inflammation. (B) Perivascular distribution of amebic trophozoites (arrow).

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