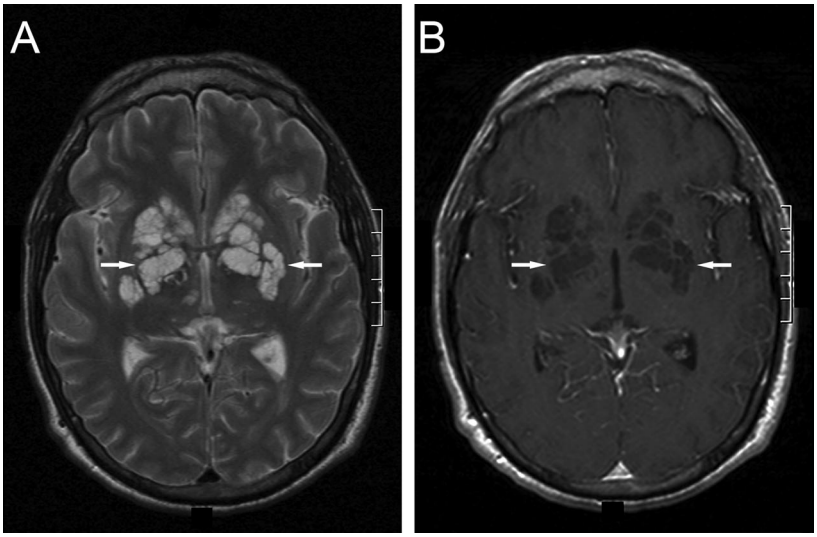
Teaching NeuroImage: Cryptococcal brain pseudocysts in an immunocompetent patient

James Scozzafava, MD
Haley Block, MD
Negar Asdaghi, MD, MSc
Zaeem A. Siddiqi, MD, PhD

Figure CNS cryptococcosis: brain MRI findings



(A) Axial T2 sequence showing bilateral pseudocysts as hyperintensities (arrowheads) predominantly involving the basal ganglia. The pseudocysts are thick walled and septated with a proteinaceous content depicted by their relative hyperintensity compared to CSF. (B) Post-gadolinium MRI sequences showing little to no enhancement of the cysts or surrounding parenchyma.

A 52-year-old man developed fever, meningismus, and decreasing level of consciousness over 2 days. On arrival he was minimally responsive to external stimuli and was profoundly rigid. There was no history of immunosuppression; however, he worked as a vacuum truck operator and reported exposure to chicken and pigeon feces in the weeks prior to his illness. CSF opening pressure was >30 cm of H_2O with a mild lymphocytic pleocytosis (239 × 10*6 cells/L) with protein at the upper limit of normal (0.45 mmol/L), and normal glucose (4.1 mmol/L). HIV serology was negative. ELISA and India ink stain were positive for cryptococcus. CSF cultures identified *Cryptococcus neoformans* var Gatti as the pathogenic species. Other infectious causes, including hepatitis B and C viruses, herpes simplex virus, mycobacterium tuberculosis, and other fungal sources, were all excluded. Brain MRI showed bilateral pseudocysts predominantly involving the basal ganglia, and post-gadolinium sequences showed little enhancement of the cysts or surrounding parenchyma (figure). The patient received IV amphotericin B and flucytosine for 3 weeks followed by maintenance therapy with fluconazole. A lumbar CSF drain was inserted to treat raised intracranial pressure. Serial chest x-rays performed to monitor for pulmonary disease or complications showed no evidence of cryptococcal pulmonary infection. At the time of discharge, the patient had only mild residual bilateral bradykinesia and rigidity.

This case highlights the potentially dramatic imaging appearance of cryptococcal meningoencephalitis. Post-gadolinium MRI sequences showed little to no enhancement of the cysts or surrounding parenchyma, a feature that differentiates this disorder from other inflammatory or malignant processes, which are usually associated

From the Division of Neurology, Department of Medicine (H.B., N.A., Z.A.S.), University of Alberta, Edmonton, Canada; and the Division of Critical Care Medicine (J.S.), University of Calgary, Calgary, Canada.

Address correspondence and reprint requests to Dr. James Scozzafava, Division of Critical Care Medicine, Foothills Medical Centre, 1403 29 St. NW, University of Calgary, Calgary, AB, Canada, T6G 2R7 jjs9@ualberta.caAugust 28, 200769911

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with breakdown of local blood–brain barrier and uptake of gadolinium.[1-3] The case further demonstrates that early and aggressive management of severe cryptococcal meningoencephalitis can lead to a favorable outcome.

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