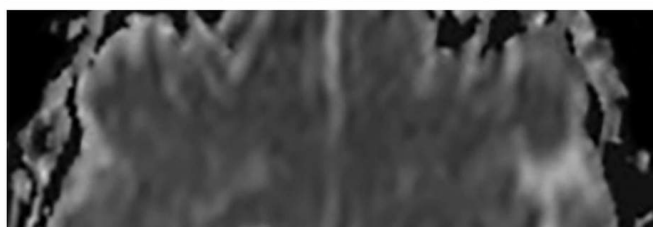
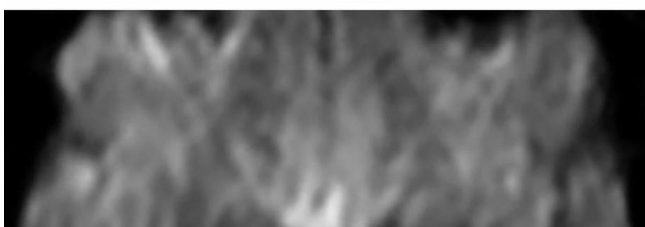
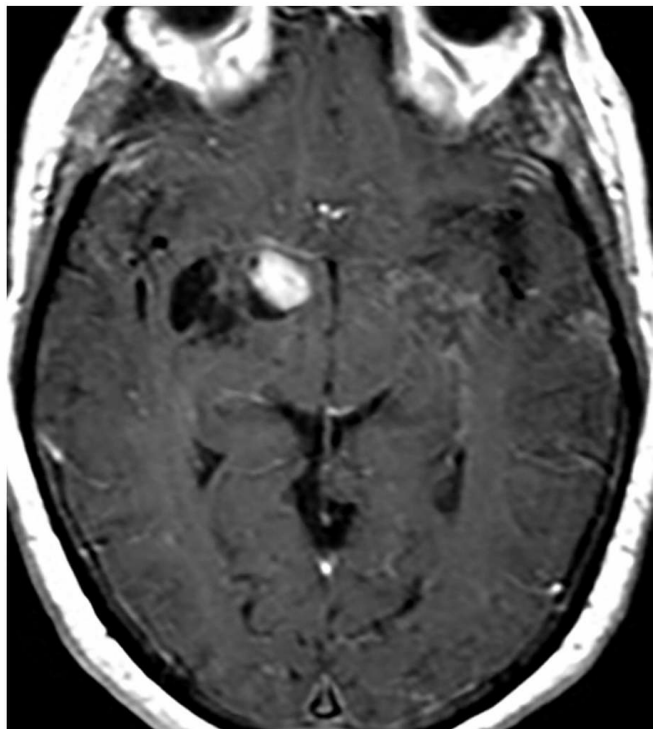
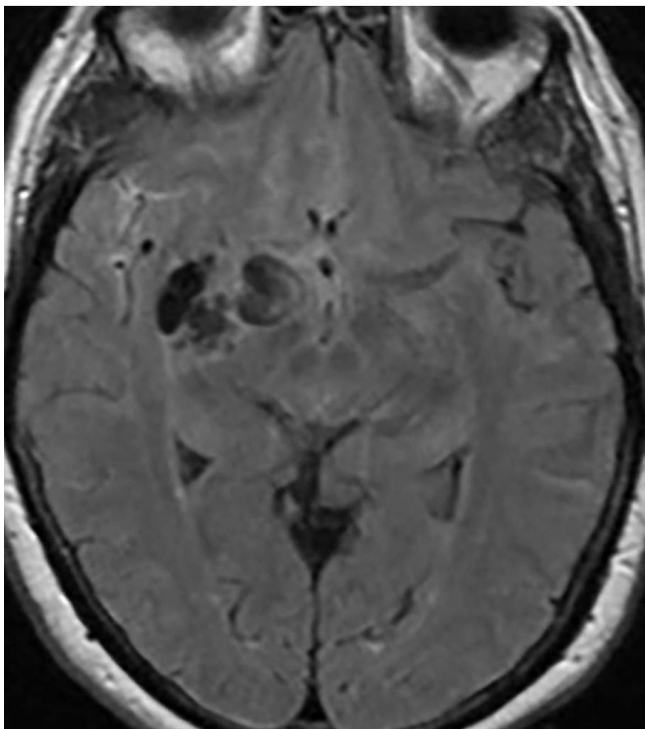
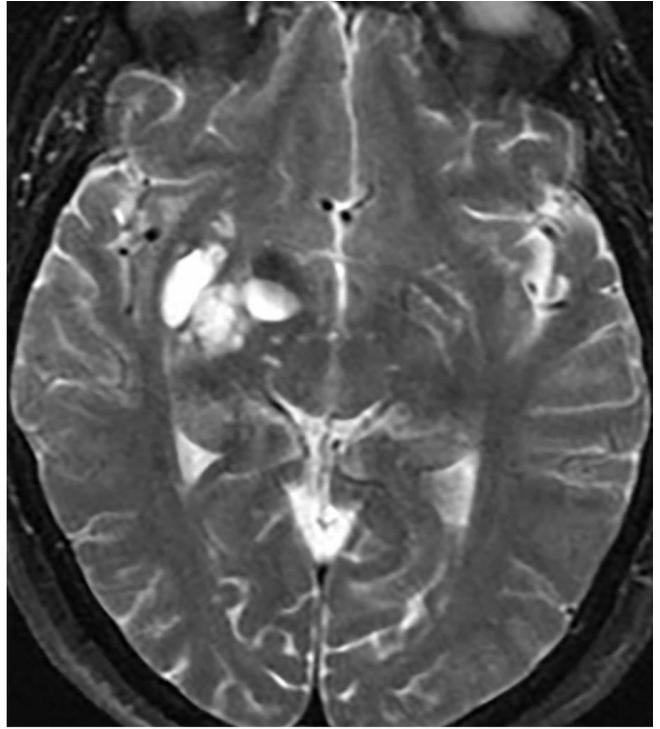
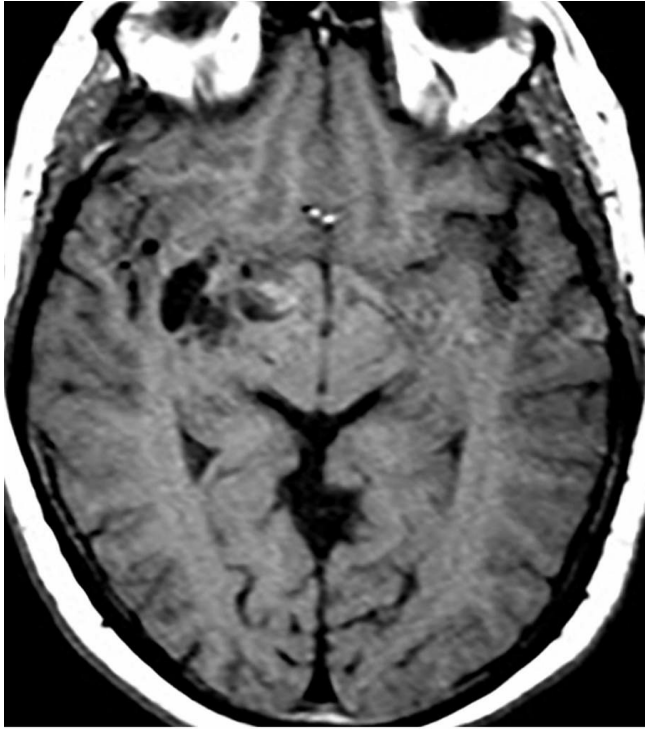
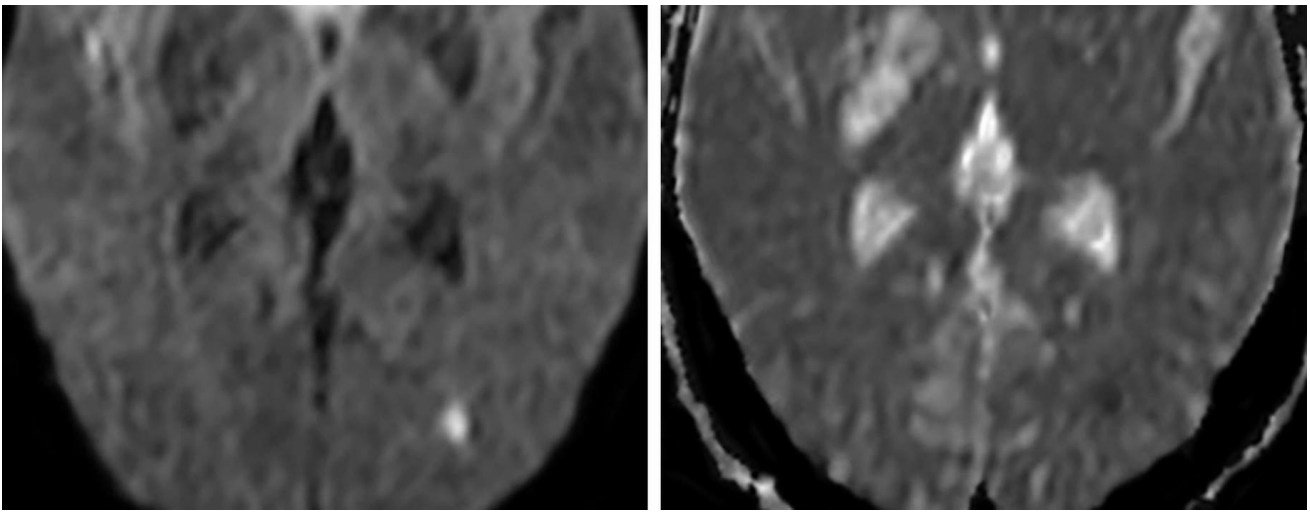




# Cryptococcosis

*Last Updated: July 5, 2021*





**Figure 1:** In this HIV-positive patient, there is a cluster of dilated perivascular spaces and pseudocysts with signal isointense to CSF on T1-weighted (top left), T2-weighted (top right), and FLAIR (middle left) imaging. (Middle Right) The medial-most lesion demonstrated more heterogeneous signal with a solid enhancing component along the medial margin. (Bottom Left and Bottom Right) The majority of these lesions in the basal ganglia demonstrate normal or increased diffusivity on DWI/ADC, a common finding in many atypical infections.

## Description

- Opportunistic fungal infection (*Cryptococcus neoformans*)
- Strongest risk factor is T-cell dysfunction and, thus, is seen most commonly in patients with HIV/AIDS

## Pathology

- Encapsulated, yeast-like fungus that is found in animal droppings
- Infection in the lung spreads through the perivascular spaces into the deep gray nuclei, midbrain, and cerebellum

## Clinical Features

- Signs and symptoms
  - Headache is most common
  - Seizure, blurred vision, focal deficits

- Hydrocephalus
- Gender
  - Male > female
- Prognosis
  - Mortality rates approach 100% in the untreated population; improves significantly with treatment to 15% to 30%

## Imaging

- General features
  - Most common finding is nonspecific meningitis
  - A more specific finding is usually small gelatinous pseudocysts in the deep gray nuclei, cerebellum, and white matter along the perivascular spaces
  - Cryptococcoma can simulate a tumor in the cerebral or cerebellar parenchyma or brainstem
- Modality specific
  - CT
    - Often normal
  - MRI
    - T1WI
      - Dilated perivascular spaces and pseudocysts isointense to cerebrospinal fluid (CSF)
      - Cryptococcoma: hypointense
    - T2WI
      - Dilated perivascular space isointense to CSF
      - Pseudocysts will have a hypointense ring surrounding a hyperintense center
      - Cryptococcoma: hyperintense
    - DWI
      - Normal diffusivity
    - Contrast
      - If the patient is immunocompetent, the lesion might demonstrate low-level enhancement

- Cryptococcomas demonstrate solid or rim enhancement
- Gelatinous pseudocyst
  - T1-hypointense, T2-hypointense ring surrounding a hyperintense center
- Imaging recommendations
  - Standard protocol MRI (including DWI) with intravenous contrast
- Mimic
  - Can be difficult to distinguish between tuberculous and toxoplasma infections, but for a patient with AIDS with dilated perivascular spaces, this should be at the top of the differential diagnosis; when in the form of a cryptococcoma, will mimic all other ring-enhancing lesions

For more information, please see the corresponding chapter in [Radiopaedia](#), and the [Cryptococcosis](#) chapter within the [Cerebral Infectious Diseases](#) subvolume in *The Neurosurgical Atlas*.

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