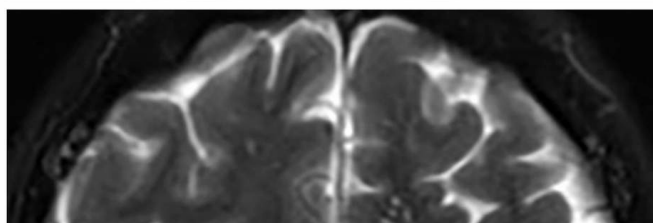
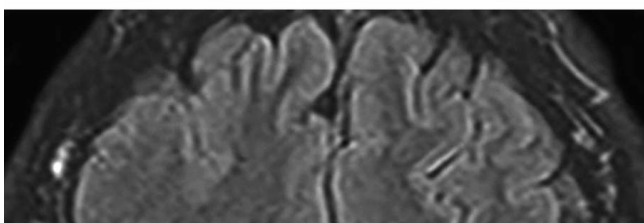
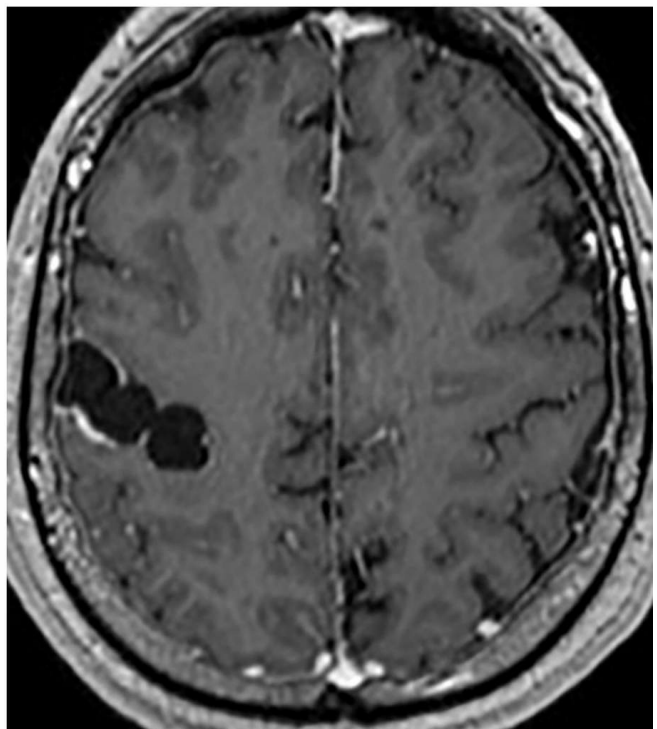
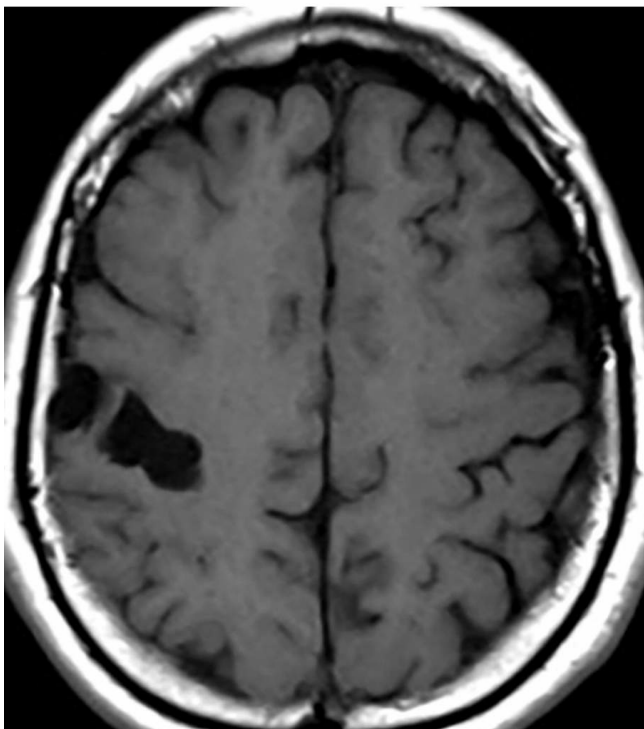
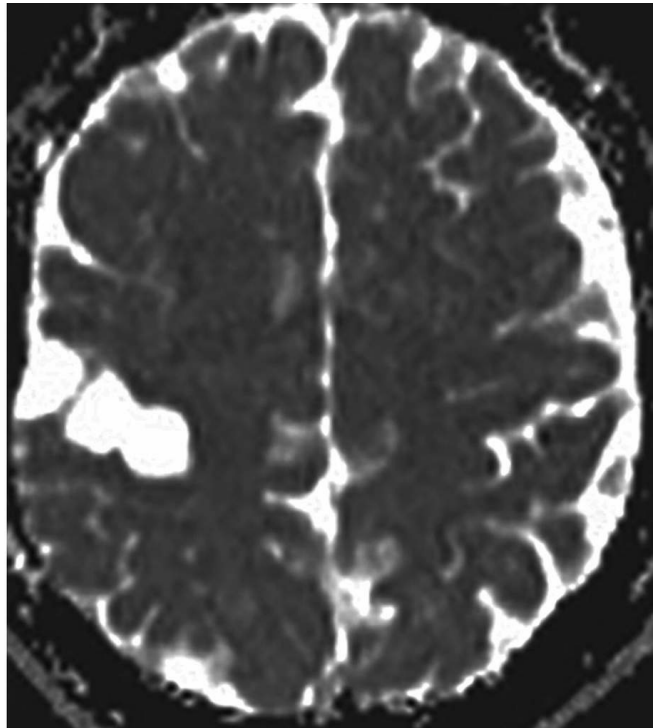
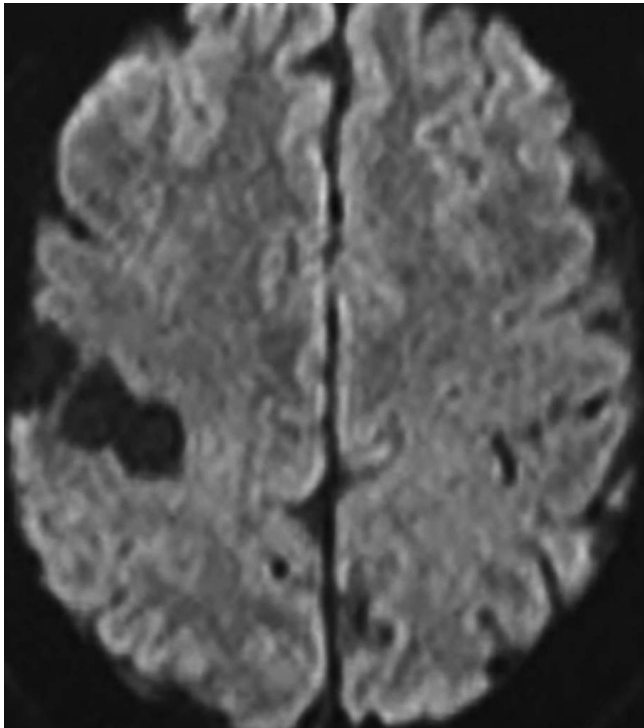




Neurocysticercosis

Last Updated: July 8, 2021



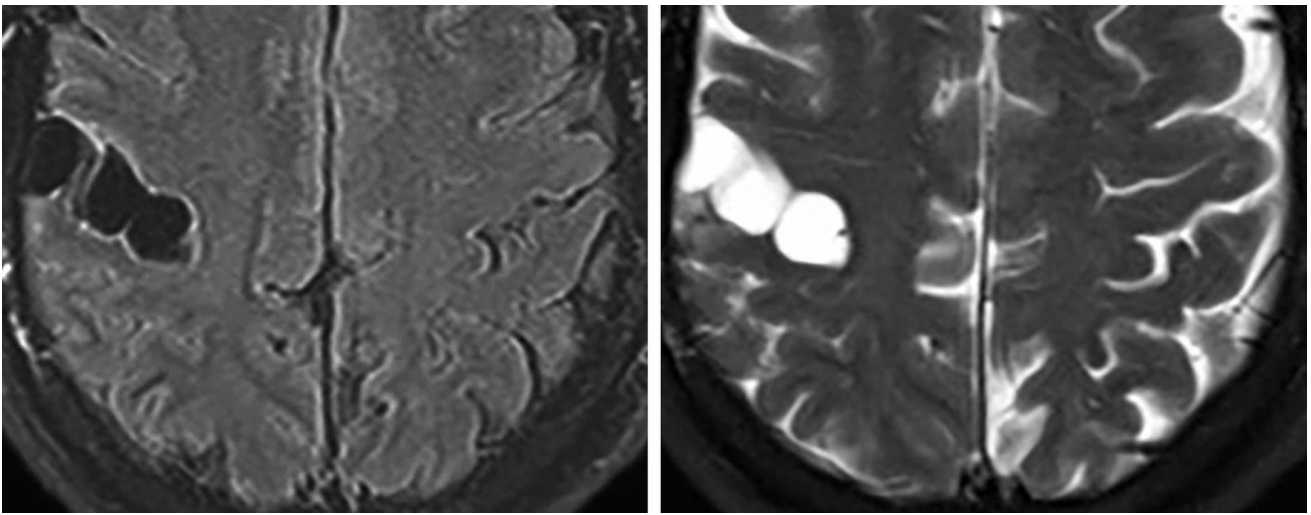
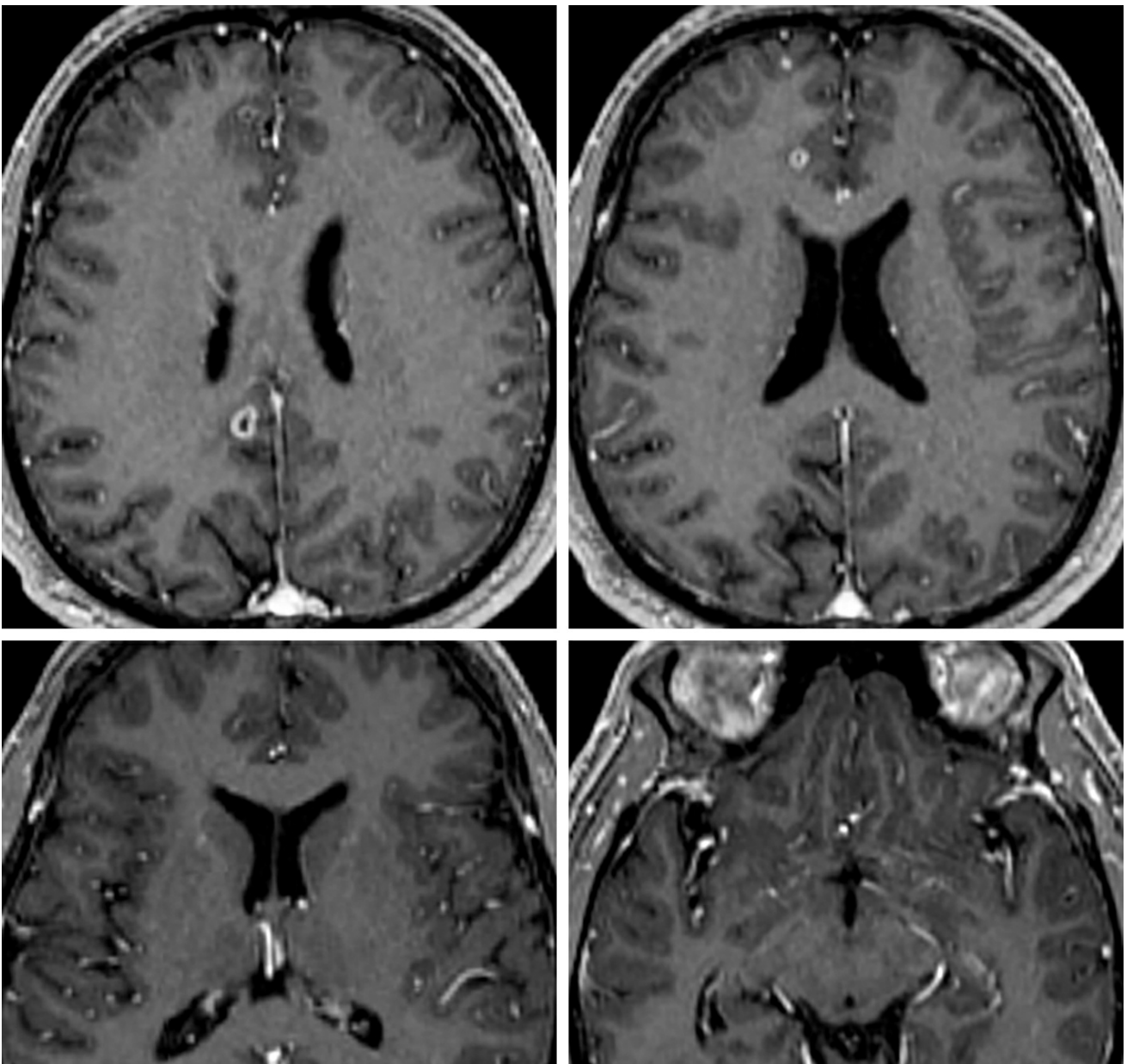


Figure 1: Cluster of cyst-like structures in the right central sulcus compatible with racemose neurocysticercosis. (Middle Right) Notice that there is only minimal rim enhancement. Often, when in the subarachnoid space or basilar cisterns, neurocysticercosis will take on a grape-like appearance with minimal to no enhancement.



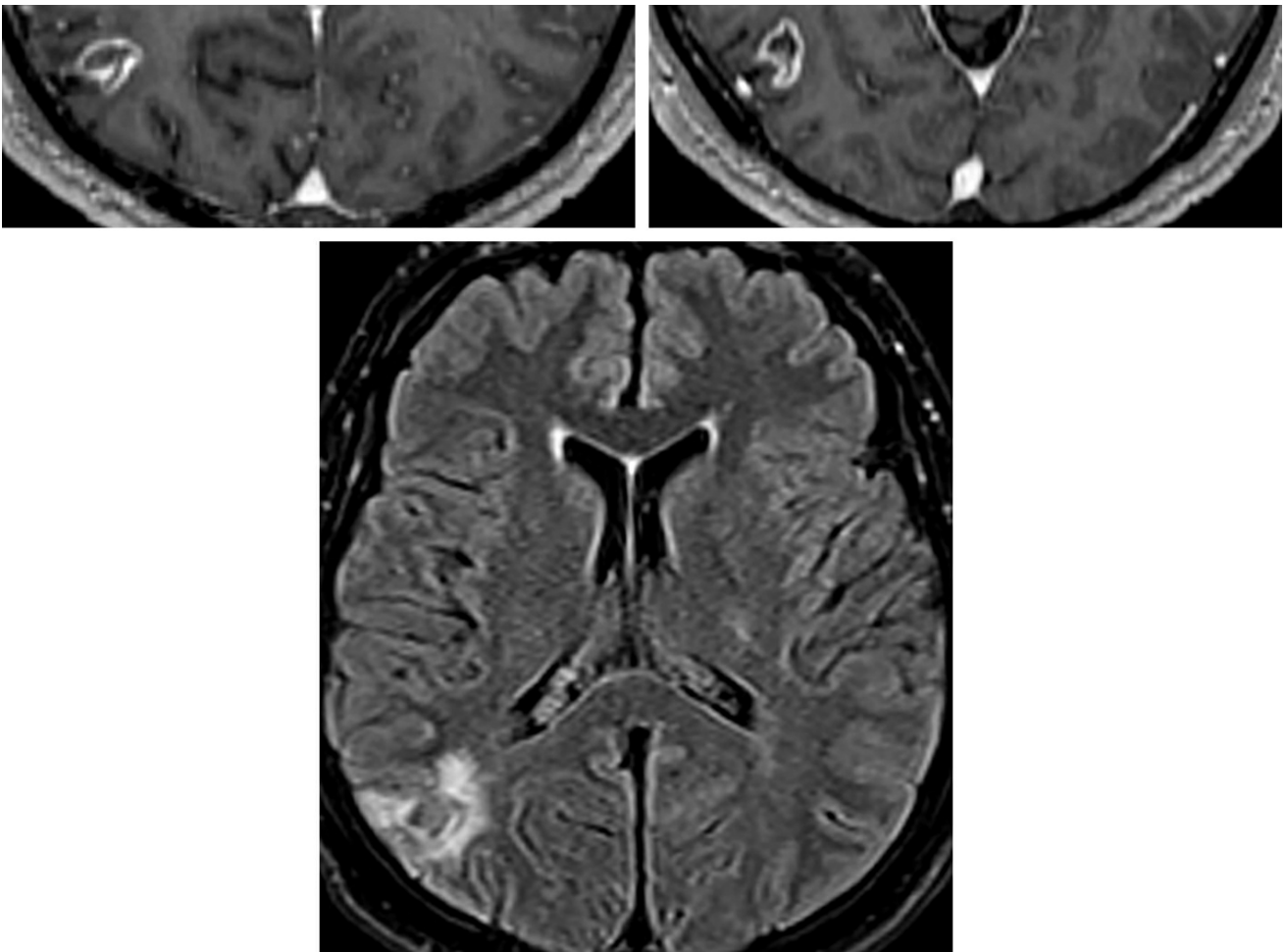


Figure 2: Multiple peripherally enhancing neurocysticercosis lesions (top left, middle right) look remarkably similar to brain metastases, with a similar amount of associated hyperintense vasogenic edema on FLAIR imaging (bottom). (Middle Left) The patient's clinical scenario and the presence of an eccentric mural nodule in some of the lesions can help to narrow the differential.

Description

- Intracranial parasitic infection caused by the pork tapeworm *Taenia solium*

Pathology

- Four pathologic stages
 - Vesicular
 - Colloidal vesicular
 - Granular nodular

- Nodular calcified

Clinical Features

- Symptoms
 - Typically asymptomatic until larvae degenerate
 - Seizure, headaches, hydrocephalus
- Demographics
 - Any age but commonly young and middle-aged adults
 - Slight male predominance
 - More commonly seen in certain locations, such as Latin America
- Prognosis
 - Increased morbidity and mortality with intraventricular neurocysticercosis

Imaging

- General
 - Imaging varies with developmental stage and host response
 - Often multiple stages in same patient
 - Usually small lesions that can have exuberant cerebral edema, depending on the stage
 - Most commonly visible within the subarachnoid space over the cerebral convexities
 - May develop an inflammatory response that seals the sulcus and can be mistaken for a parenchymal lesion
 - Racemose subtype: grape-like lesions in the basal cisterns
- CT
 - Vesicular
 - Small thin-walled cyst isodense to cerebrospinal fluid (CSF)
 - Central dot sign—hyperdense dot within the cyst represents a protoscolex

- Colloidal vesicular
 - Usually small hyperdense cyst with a thick ring-enhancing fibrous capsule and surrounding edema
- Granular nodular
 - Involuting enhancing nodule
- Nodular calcified
 - Small calcified nodule
- MRI
 - Vesicular
 - T1, T2, and FLAIR
 - Cystic lesions isointense to CSF, may see discrete eccentric intermediate-signal-intensity scolex
 - Colloidal vesicular
 - T1, T2, and FLAIR
 - Cyst is hyperintense to CSF
 - Granular nodular
 - T1, T2, and FLAIR
 - Thickened, retracted cyst wall, edema decreases
 - Nodular calcified
 - Shrunken low-signal-intensity lesion on all sequences, seen most easily on GRE/SWI
 - May not be visible
 - DWI: not particularly helpful
 - GRE/SWI: useful for demonstrating calcified scolex
 - Contrast
 - Vesicular: minimal enhancement of the scolex
 - Colloidal vesicular: enhancement of the wall and scolex
 - Granular nodular: nodular or ring-like enhancement
 - Nodular calcified: minimal
- Imaging recommendations
 - MRI with contrast (include SWI)
- Mimic
 - Depends on the phase of disease at which the particular lesion

is. In the vesicular phase, can mimic an [arachnoid cyst](#) or enlarged perivascular space. The multiplicity and location of the lesions can help distinguish them. When in the colloidal vesicular or granular nodular phase, they can be difficult to distinguish from [metastatic disease](#). Oftentimes, the most helpful way to distinguish them is by identifying multiple lesions in multiple different stages.

For more information, please see the corresponding chapter in [Radiopaedia](#).

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