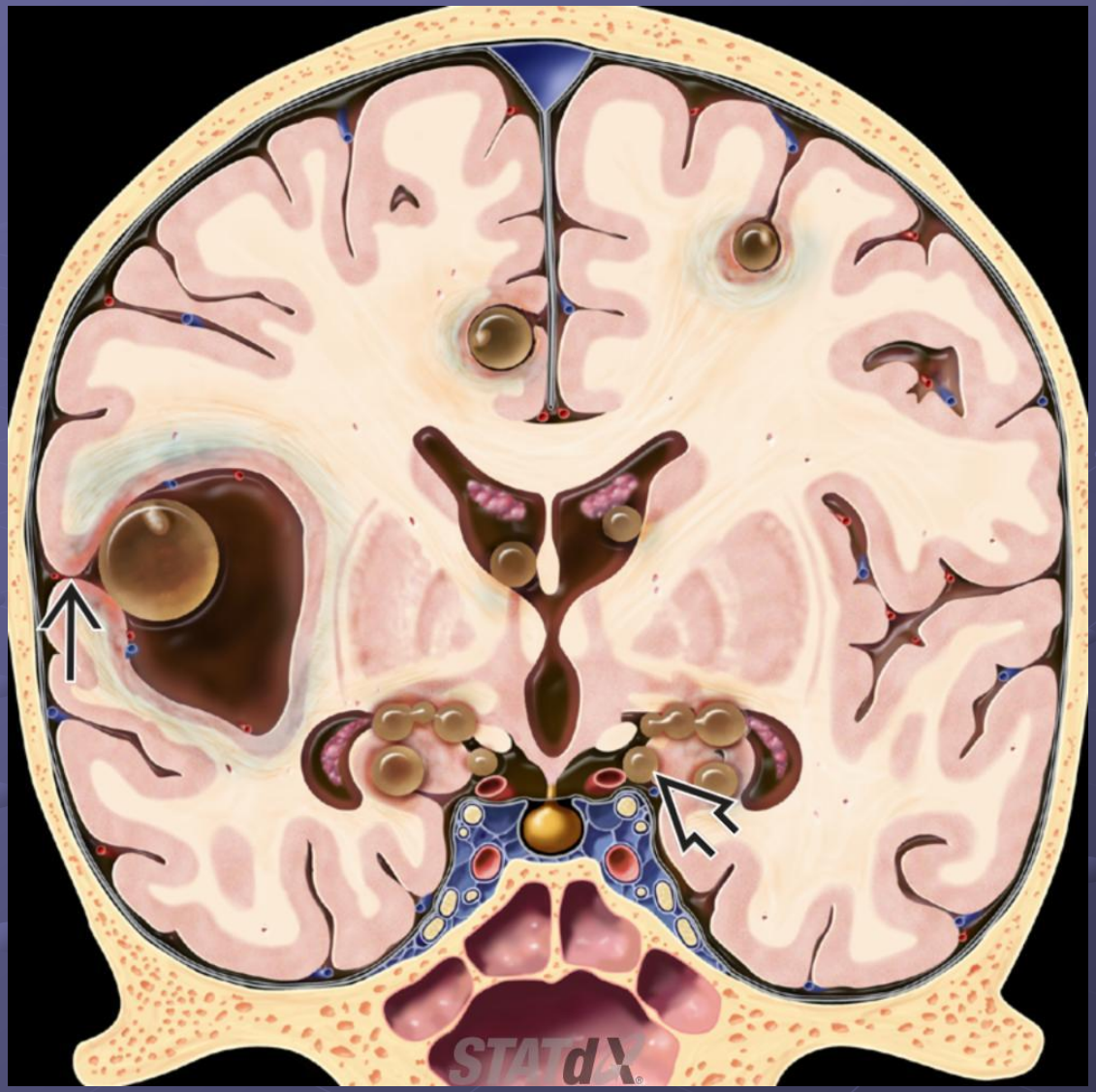
Neurocysticercosis

- CNS infection with the pork tapeworm *Taenia solium*, which is endemic in most low-income countries where pigs are raised. This form of cysticercosis is a relevant cause of seizures in endemic areas.
- Endemic in Central and South America, Asia and Africa.
- The perpetuation of this parasitic disease is related to poor sanitation and hygiene.

Imaging

- Best diagnostic clue: Cyst with "dot" inside
- Convexity subarachnoid spaces most common location
  - Inflammatory response around cyst may seal sulcus, making lesions appear intraaxial
- May involve cisterns > parenchyma > ventricles
- Intraventricular cysts are often isolated
- Basal cistern cysts may be racemose (grape-like)
- Imaging varies with development stage and host response
- Lesions may be at different stages in same patient
- FLAIR and T1 MR helpful to identify scolex and intraventricular lesions
- GRE/SWI helpful in young adults presenting with seizures



Coronal graphic shows subarachnoid and ventricular cysts. The convexity cysts have a scolex and surrounding inflammation. Note that the inflammation around the largest cyst "seals" the sulcus (black solid arrow) and makes it appear parenchymal. Racemose cysts (black open arrow) are multilocular, nonviable, seen in the basal cisterns and typically lack a scolex.

Stages

- **Vesicular:**
  - viable parasite with intact membrane and therefore no host reaction.
- **Colloidal vesicular:**
  - parasite dies within 4-5 years [1] untreated, or earlier with treatment and the cyst fluid becomes turbid. As the membrane becomes leaky edema surrounds the cyst. This is the most symptomatic stage.
- **Granular nodular:**
  - edema decreases as the cyst retracts further; enhancement persists.
- **Nodular calcified:**
  - end-stage quiescent calcified cyst remnant; no edema.

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Sagittal STIR MR shows multiple hyperintense cysts in the quadrigeminal cistern (white open arrow) and basal subarachnoid spaces (white solid arrow) related to racemose NCC. Note the typical lack of a scolex. (Courtesy E. Bravo, MD.)

Axial T1WI C+ MR shows a NCC cyst (white open arrow) with an enhancing nodule in the posterior 3rd ventricle. Note the associated acute obstructive hydrocephalus, a common complication of intraventricular cysts. Intraventricular cysts are often isolated, with the 4th ventricle most commonly involved. (Courtesy N. Fischbein, MD.)