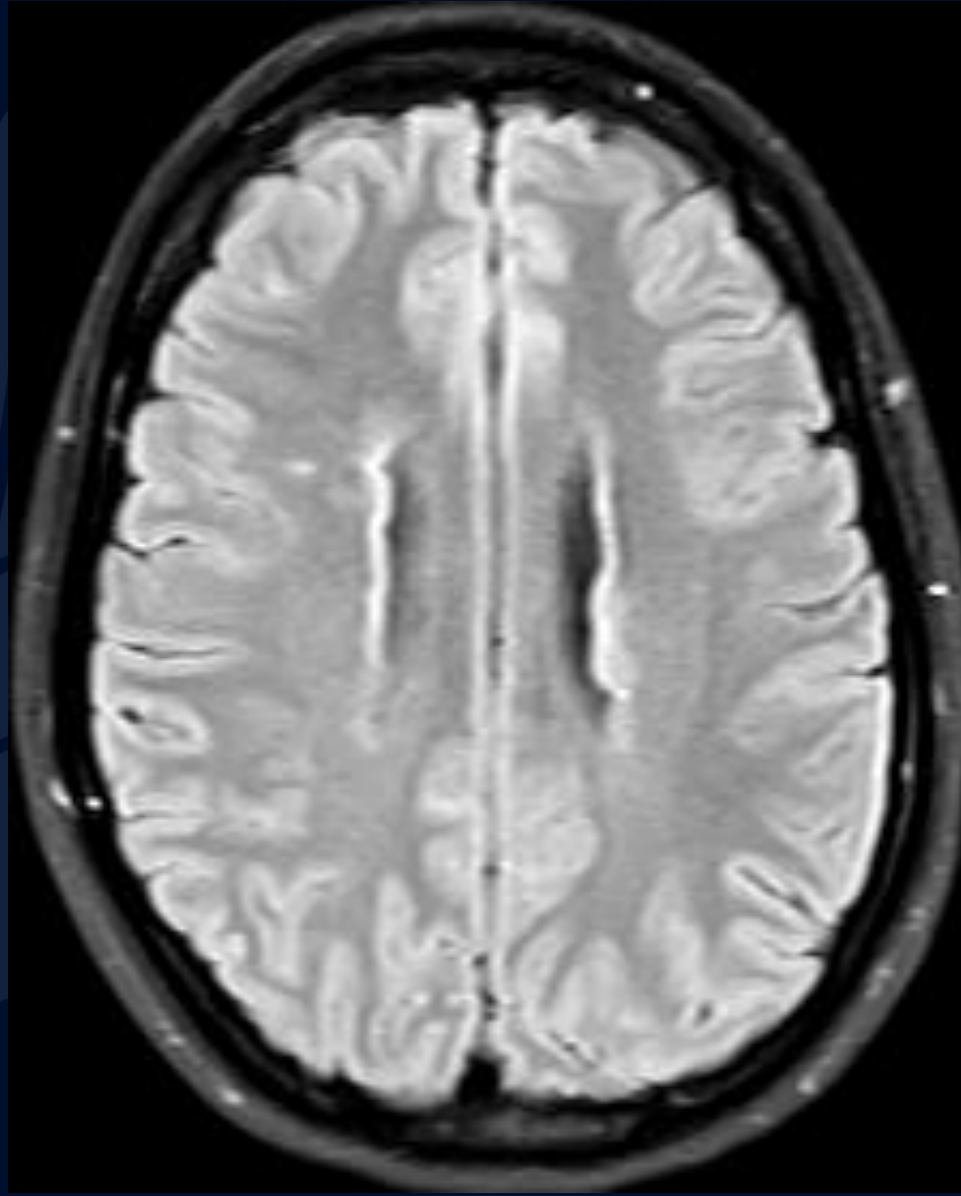


31-year-old male with a history of seizures

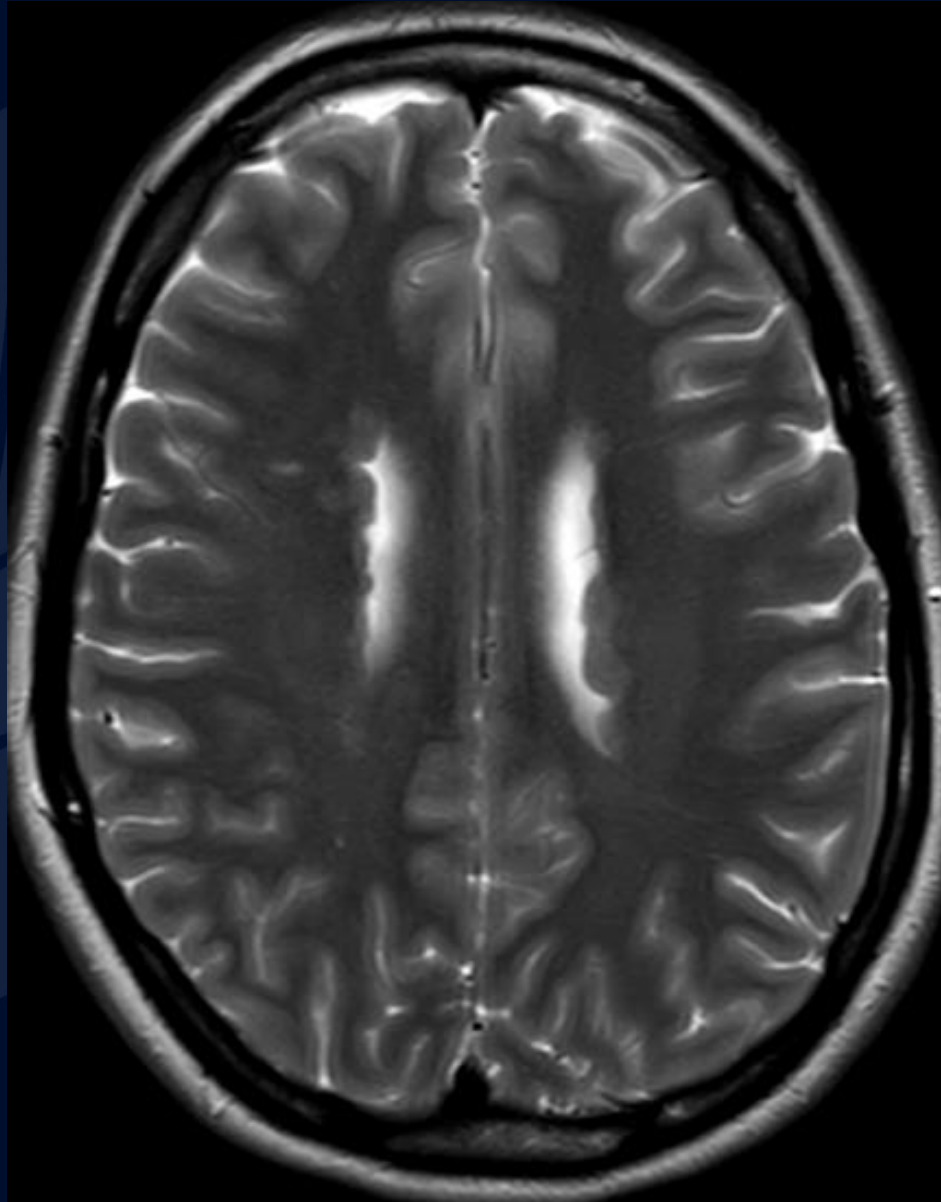
Andrew Klufas, MD MBA

Racquel Helsing, MD

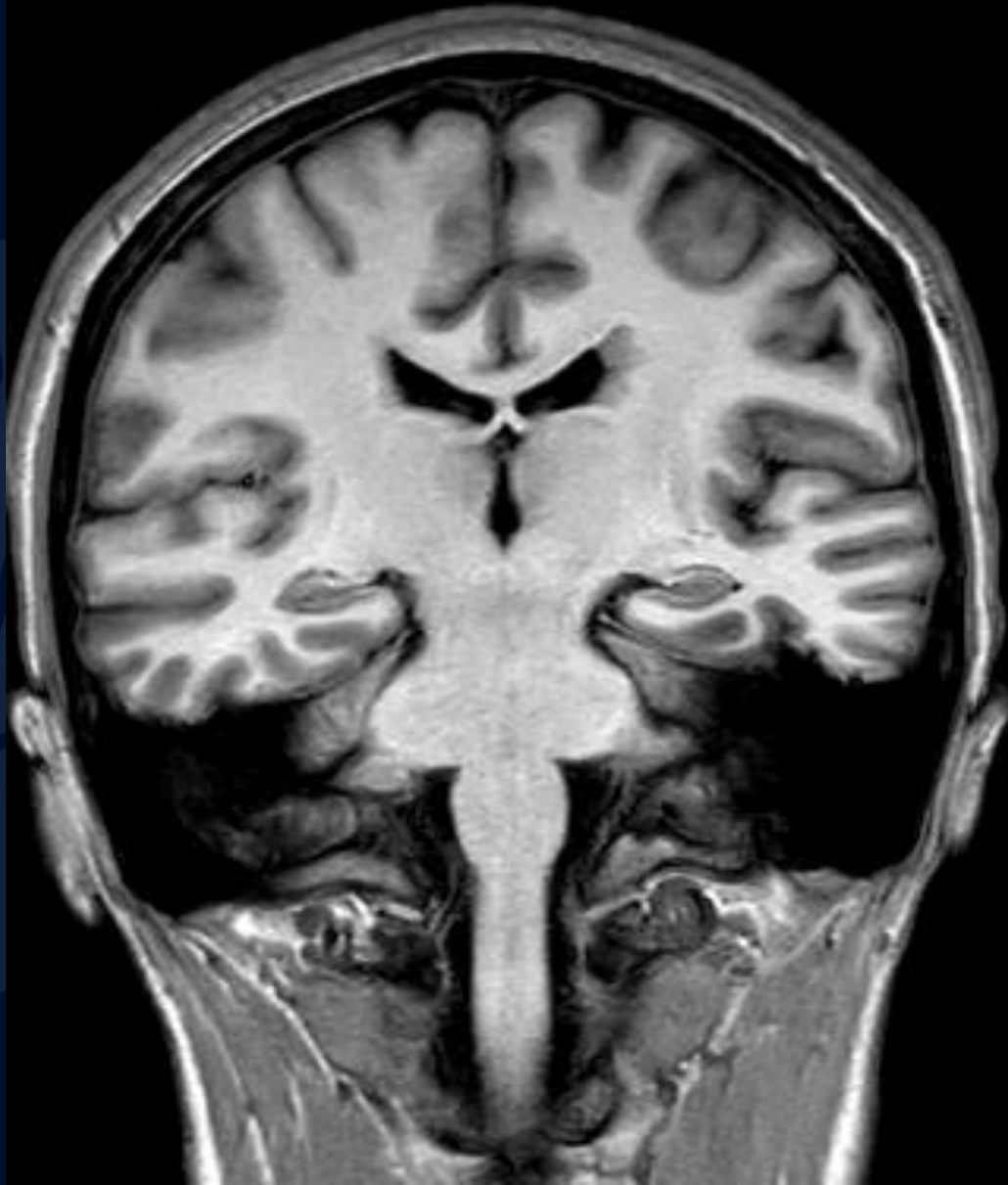
MR FLAIR



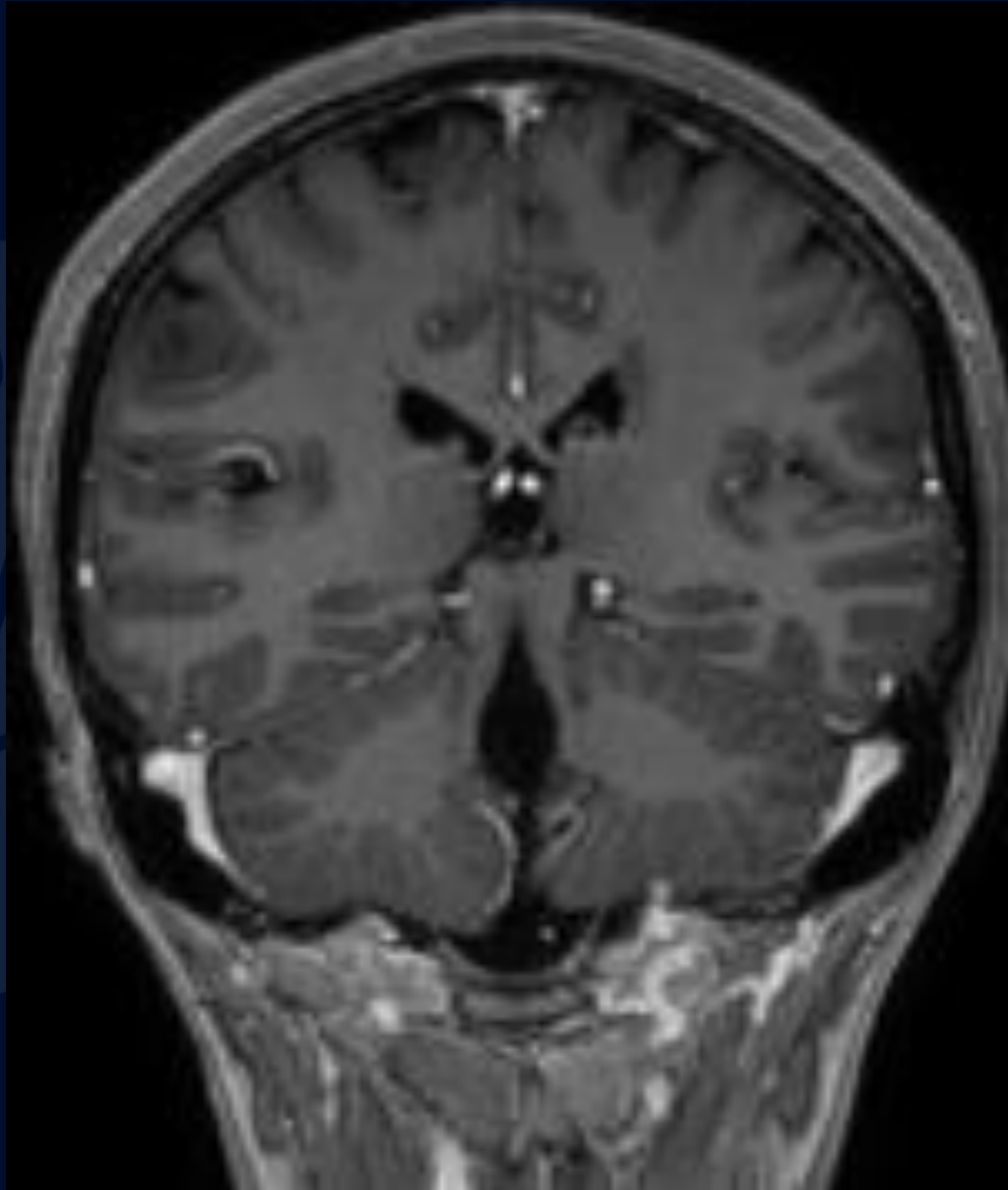
MR T2



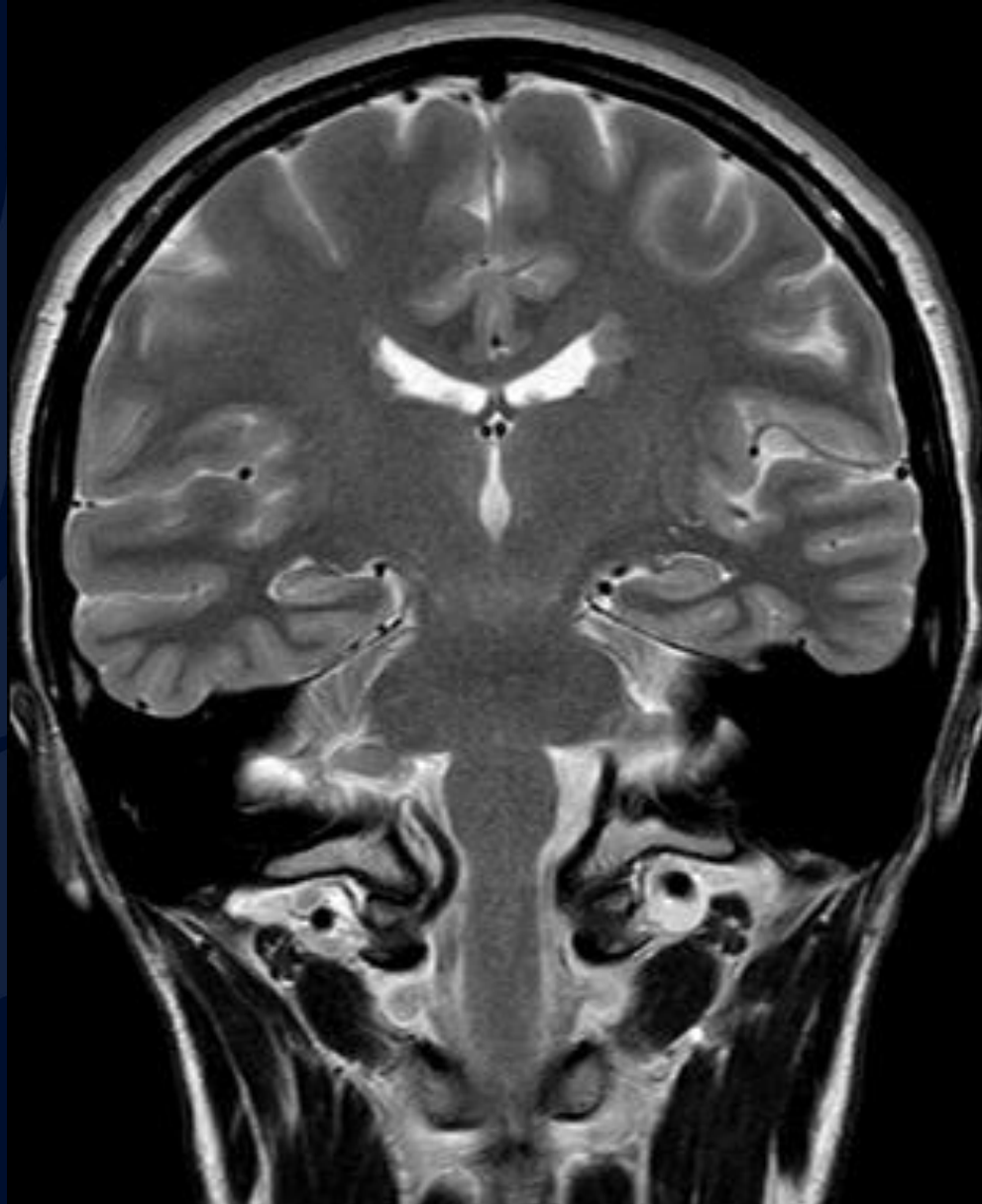
MR T1



MR T1 C+



MR T2

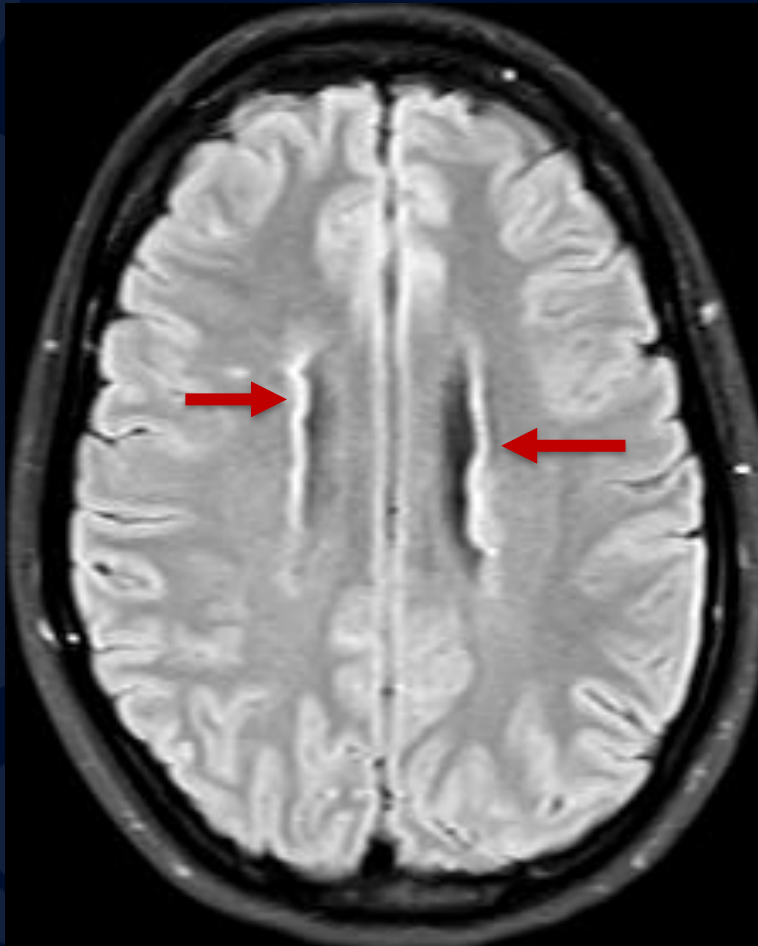




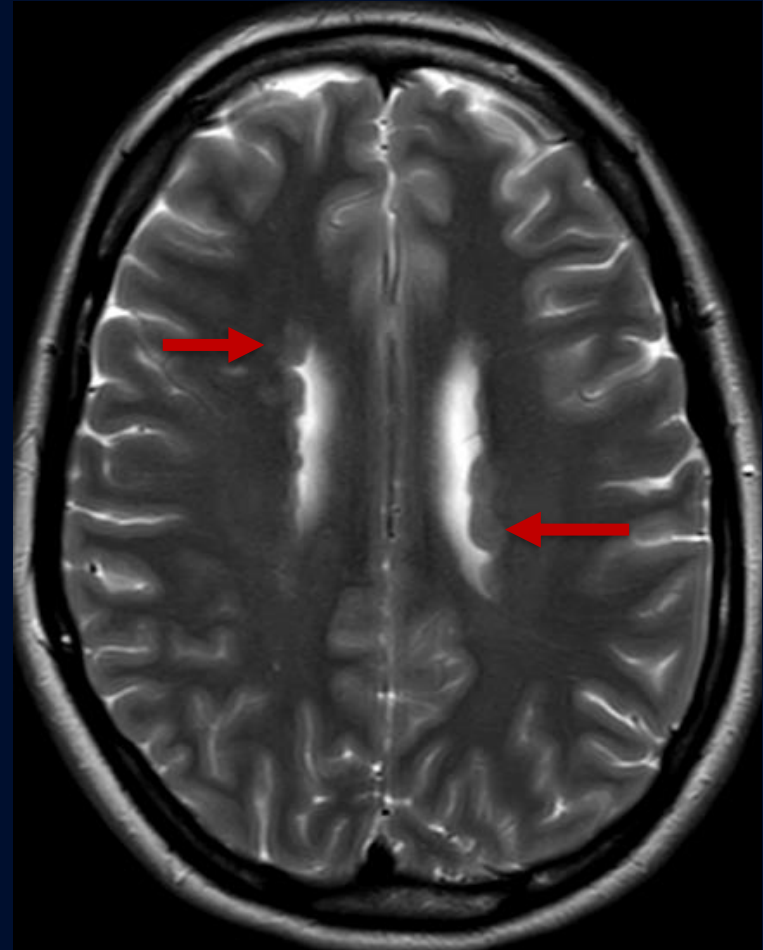
?

Grey Matter Heterotopia

T2 FLAIR



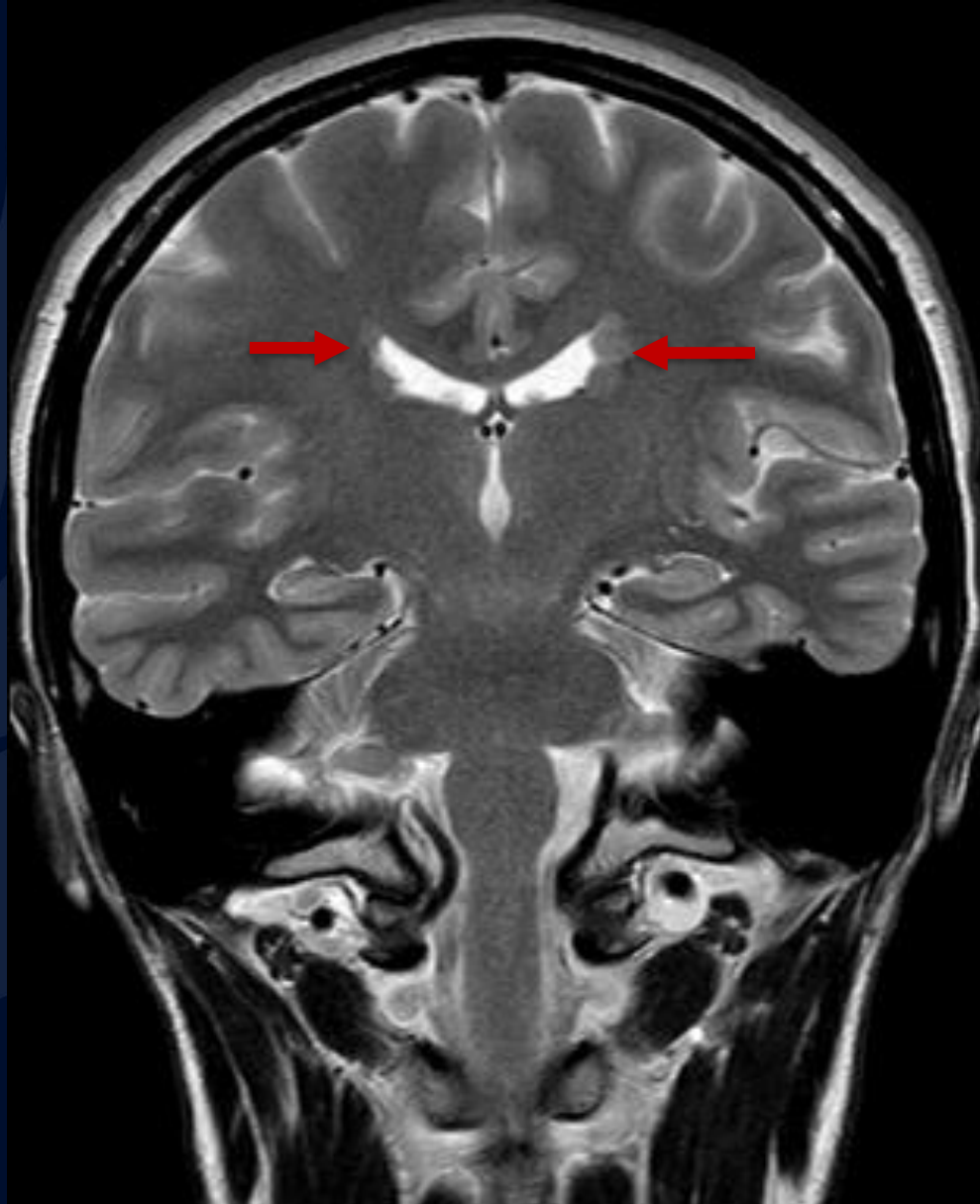
T2



Periventricular, nodular ribbons of ectopic tissue
isointense to grey matter on all sequences

MR T2

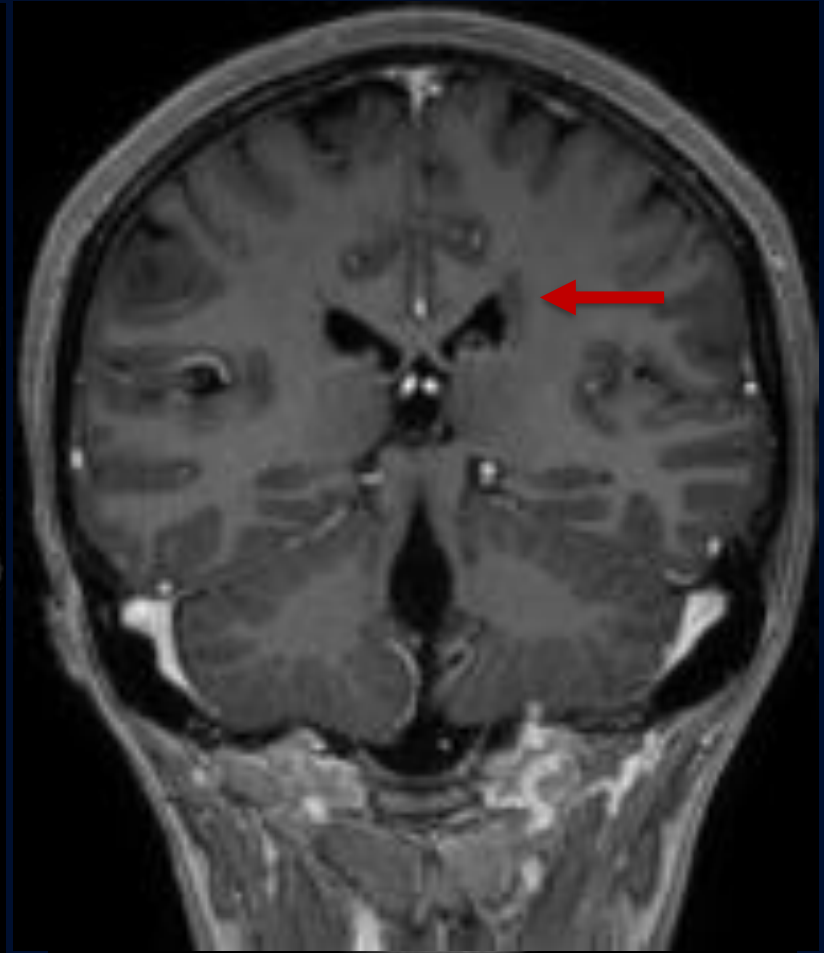
Periventricular,
nodular ribbons of
ectopic tissue
isointense to grey
matter on all
sequences



T1



T1 MPR



Periventricular, nodular ribbons of ectopic tissue
isointense to grey matter on all sequences

Grey Matter Heterotopia

Interruption of the normal migration of neurons from the periventricular telencephalic germinal matrix to the cortex due to genetic abnormalities or infection/trauma

Divided macroscopically into

- Nodular heterotopias
 - Subependymal – most common
 - Subcortical
- Diffuse heterotopias
 - Band- also known as double cortex heterotopia and x-linked lissencephaly
 - Lissencephaly- types I and II
 - Laminar

Grey Matter Heterotopia

Clinical Presentation

- Most commonly present with focal seizures in the second decade of life
- +/- developmental delay or intellectual disability

Grey matter heterotopias are commonly associated with other congenital central nervous system anomalies including:

- Corpus callosum agenesis
- Schizencephaly
- Chiari II malformation
- Pachygyria, polymicrogyria
- Basilar cephaloceles

Imaging Findings

CT has limited use

- Difficult to appreciate small/focal involvement
- Slightly denser than surrounding white matter

MRI study of choice

- Heterotopic tissue follows same signal characters as grey matter on all sequences
- Also warrants careful examination to identify associated anomalies
- fMRI can demonstrate activation in heterotopic nodules, making epileptogenic EEG discharges

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