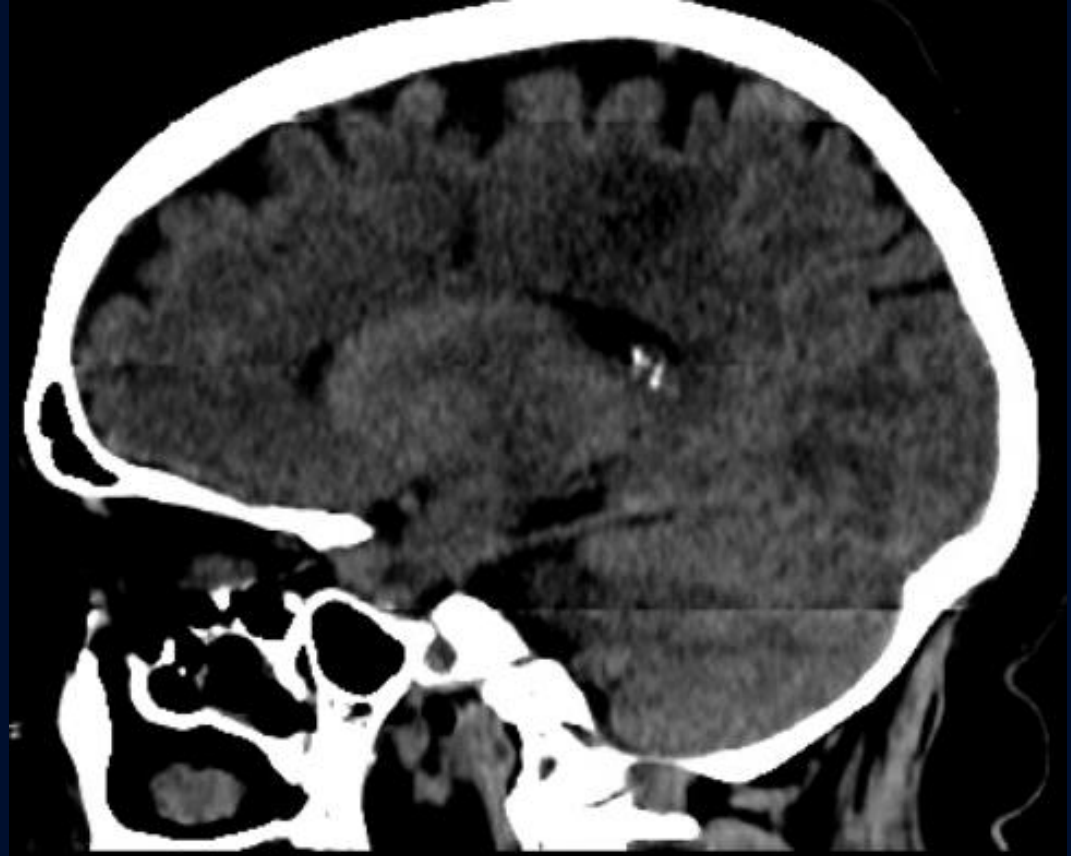


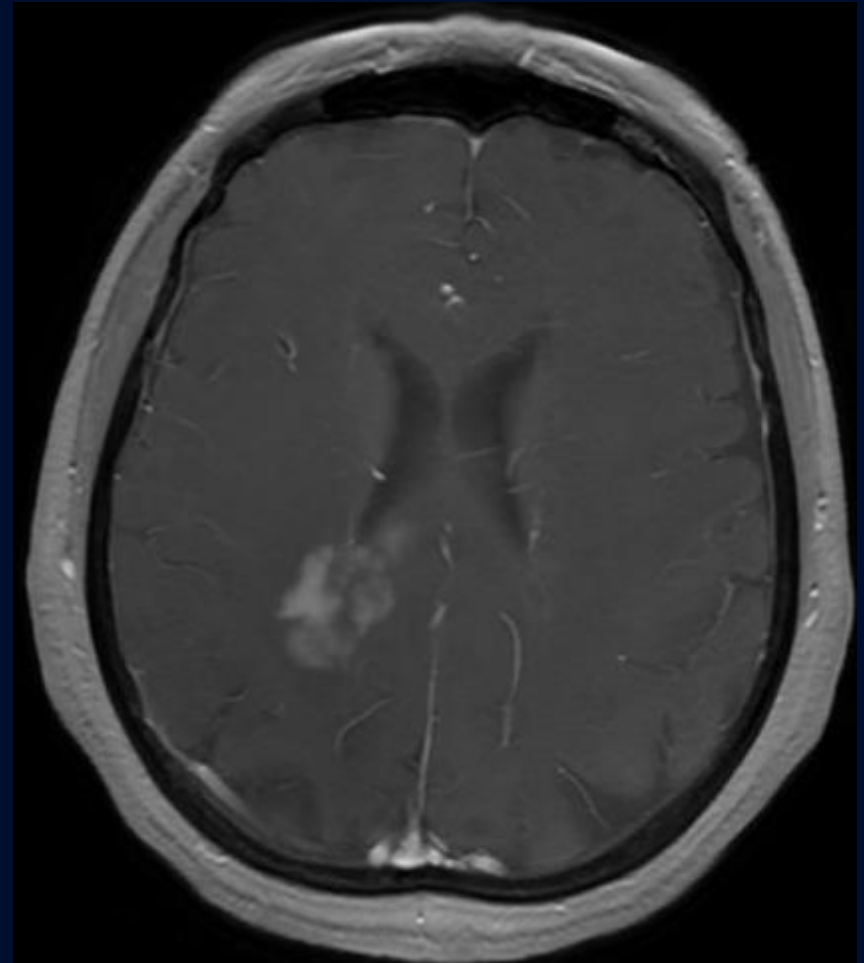
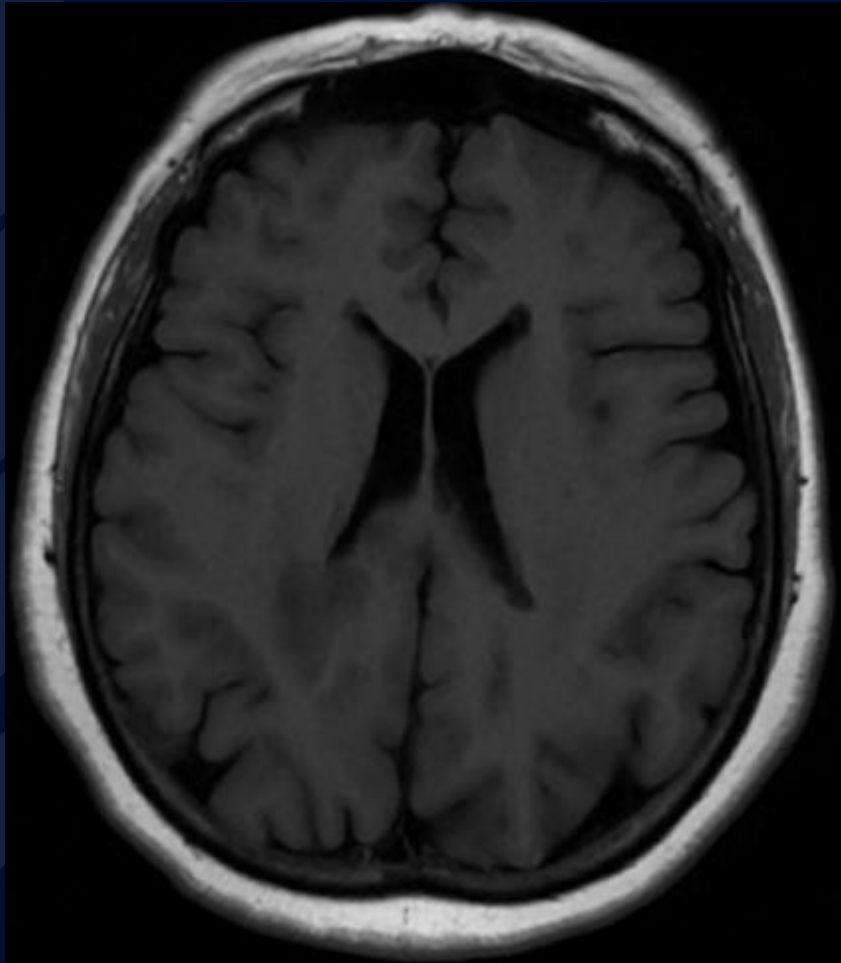
# 59-year-old female with left sided weakness and ataxia

Jonathon Peters, MS3

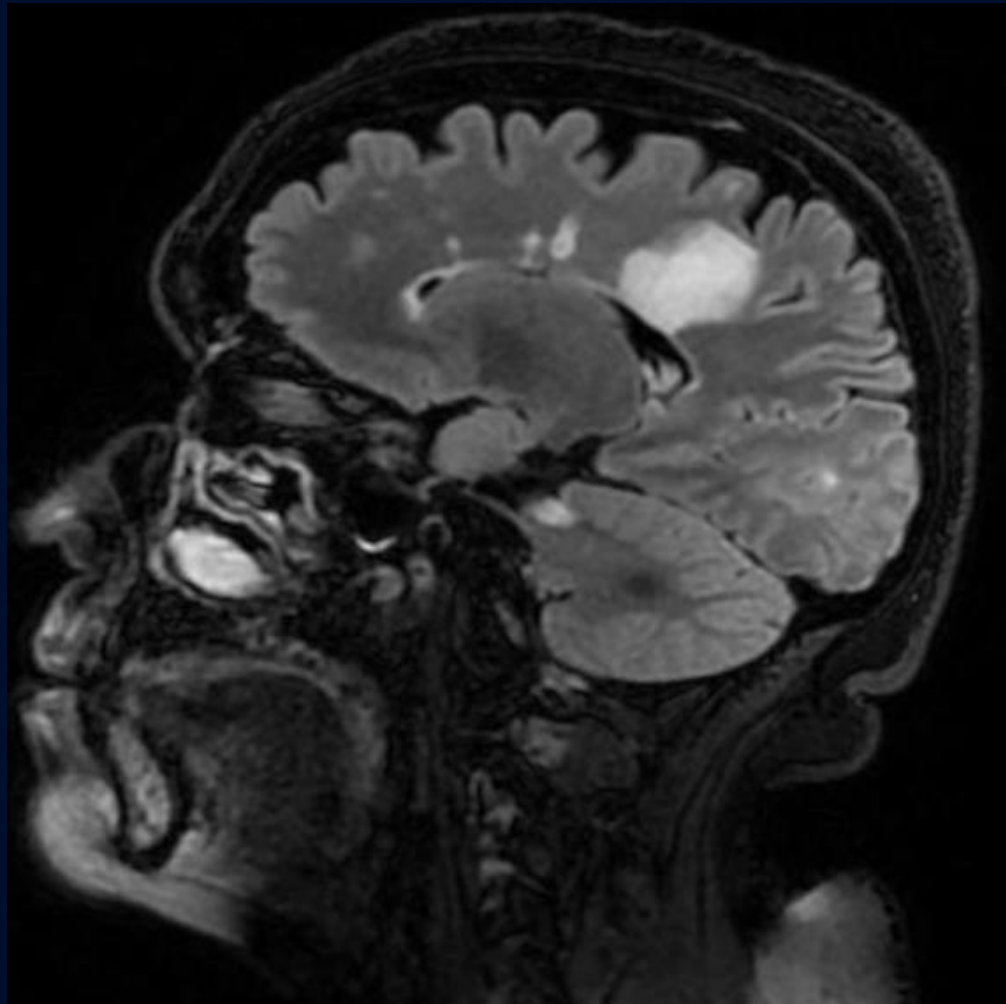
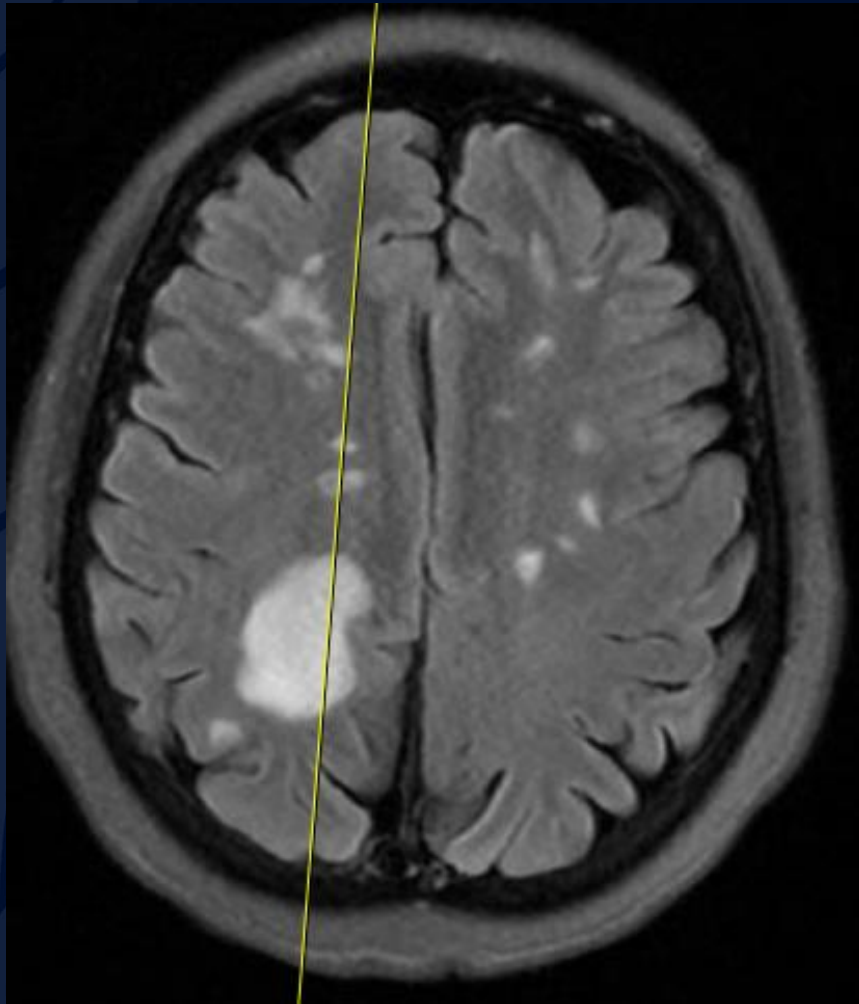
# Non-contrast CT



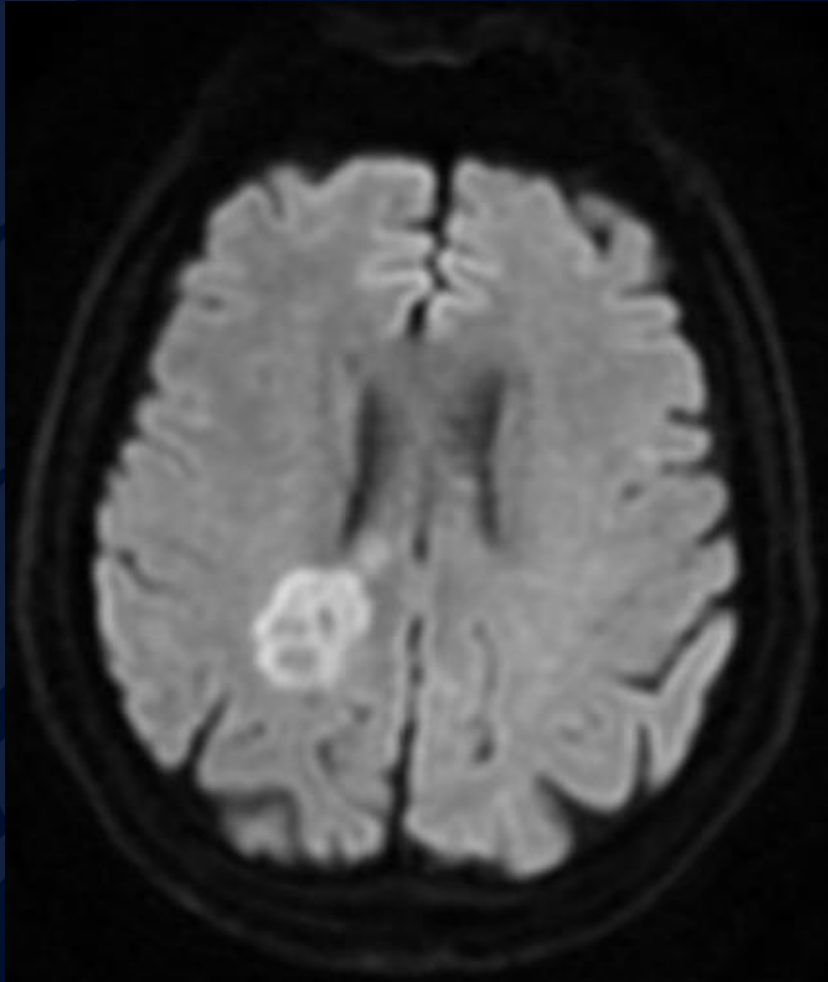
# T1 with and without contrast



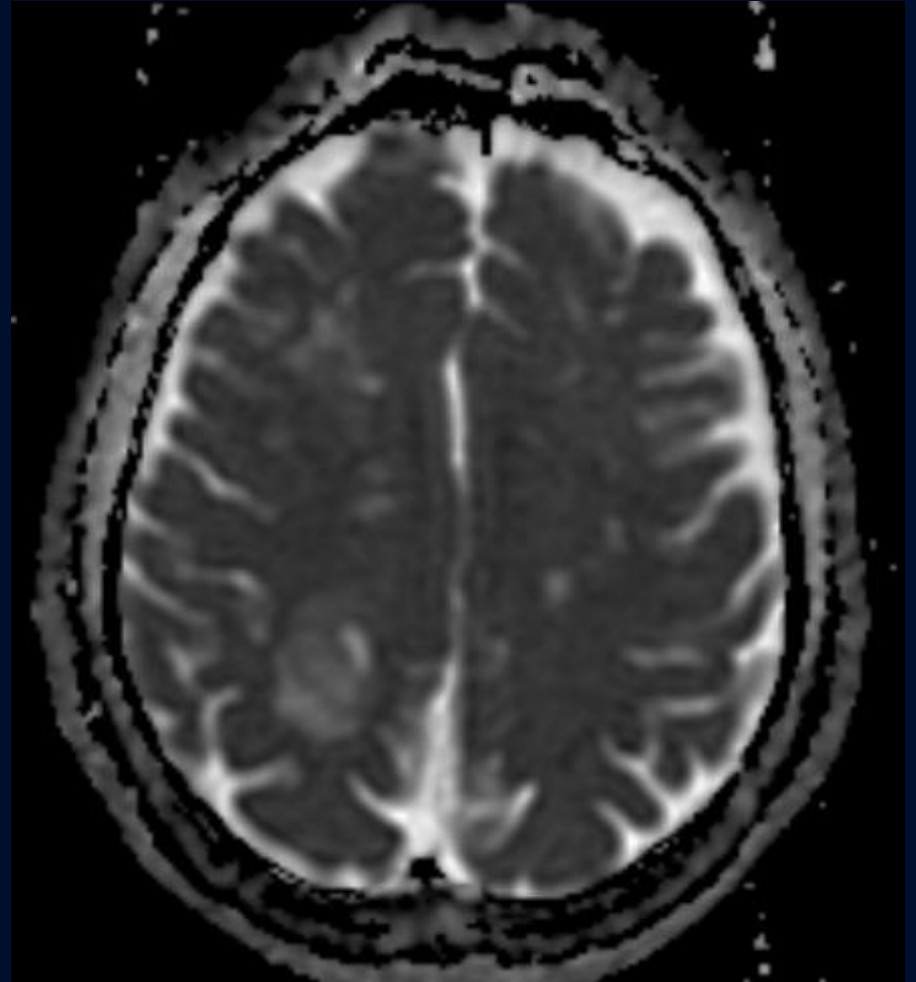
# T2 FLAIR



DWI



ADC



A large, stylized oak leaf graphic in a dark blue color, positioned on the left side of the slide. The leaf has a prominent central vein and several smaller veins branching off, with a wavy, lobed edge.

?

# Tumefactive Multiple Sclerosis

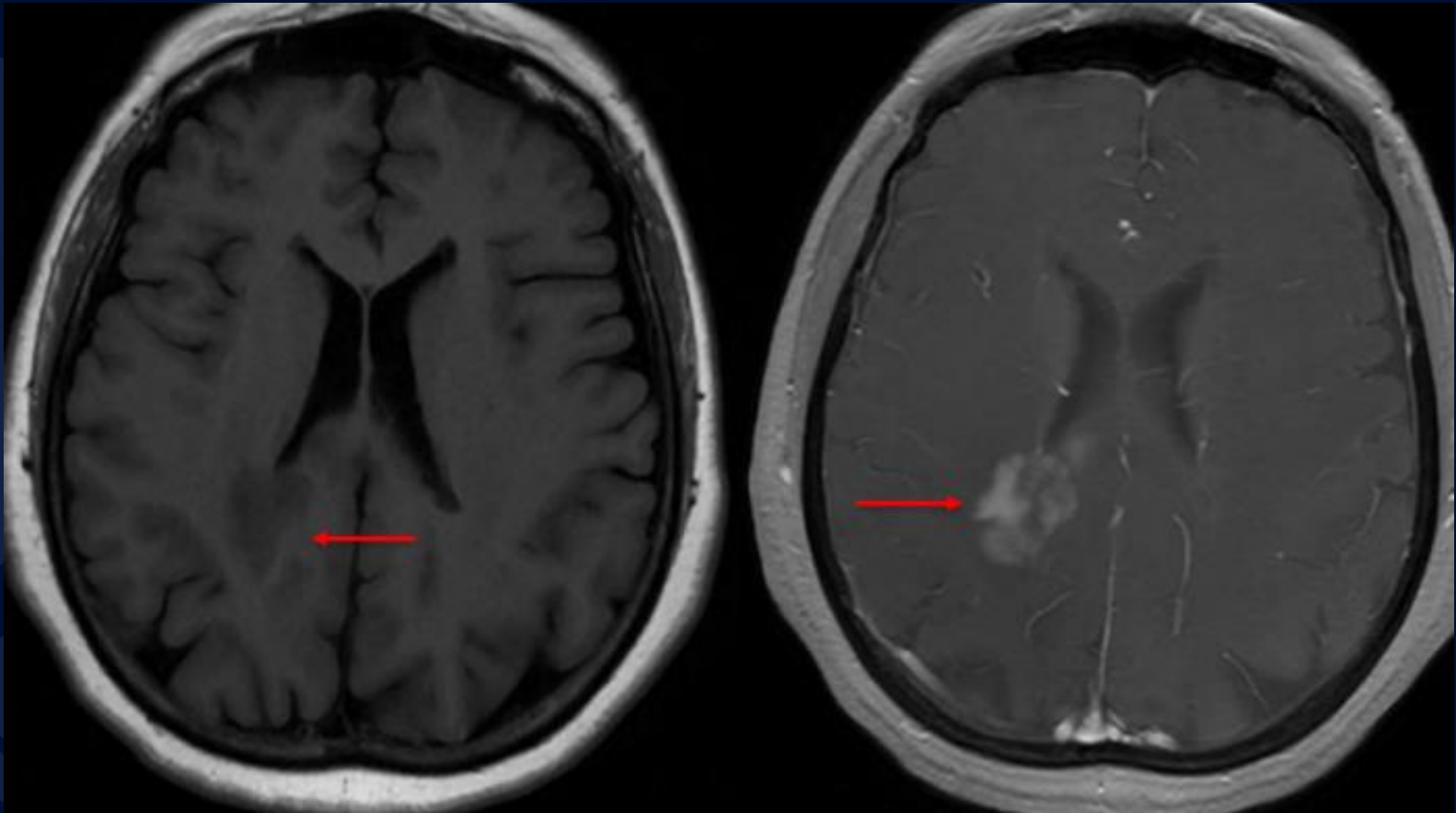
# Non-contrast CT



Hypodensity in the right frontoparietal region

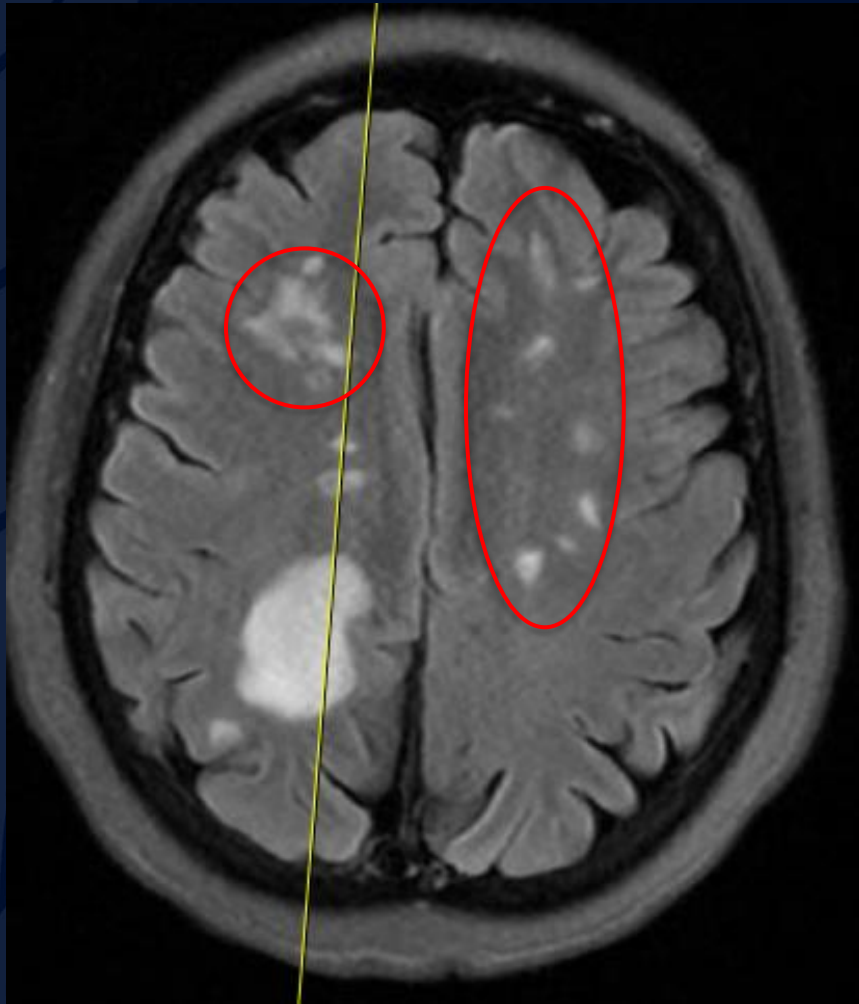


# T1 with and without contrast

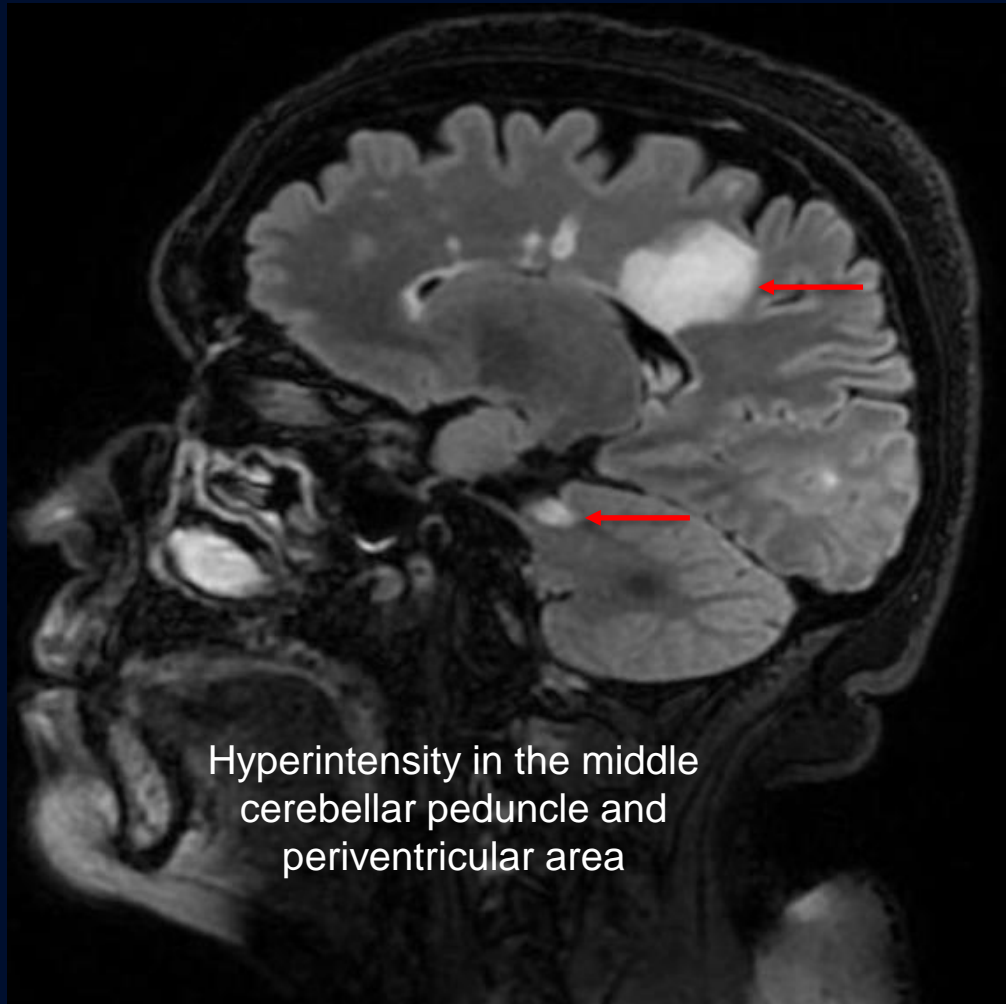


Incomplete peripheral enhancement around lesion in the right parietal centrum semiovale, involving the corpus callosum.

# T2 FLAIR

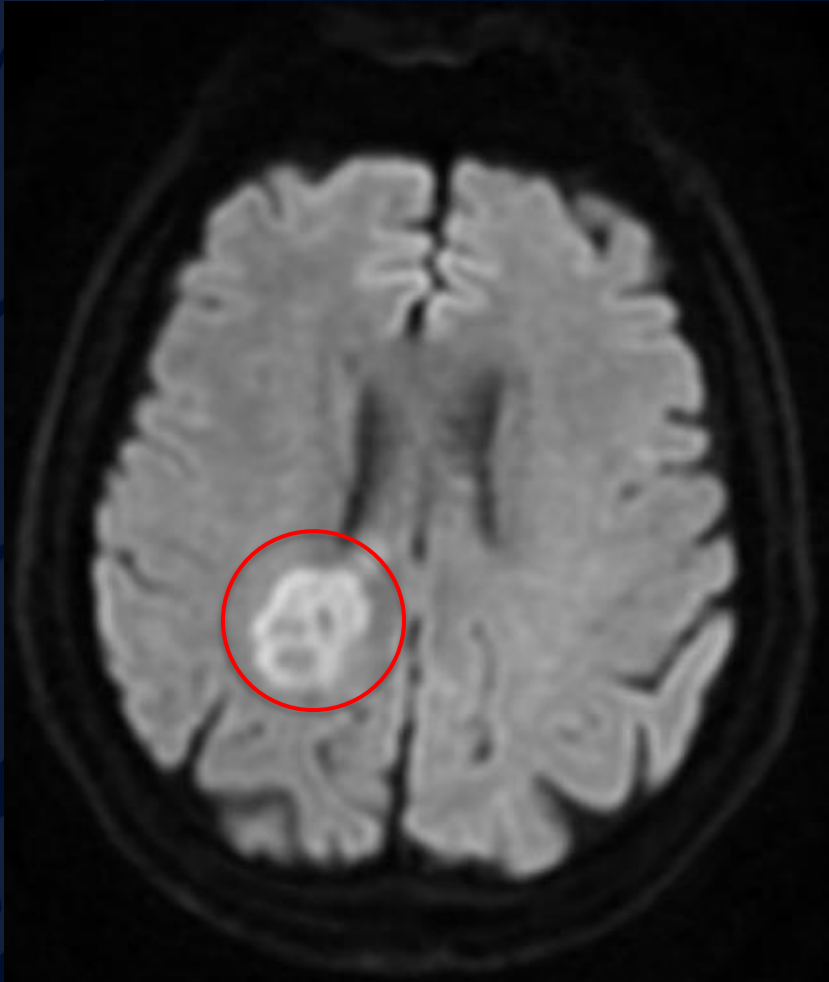


Small hyperintensities throughout white matter



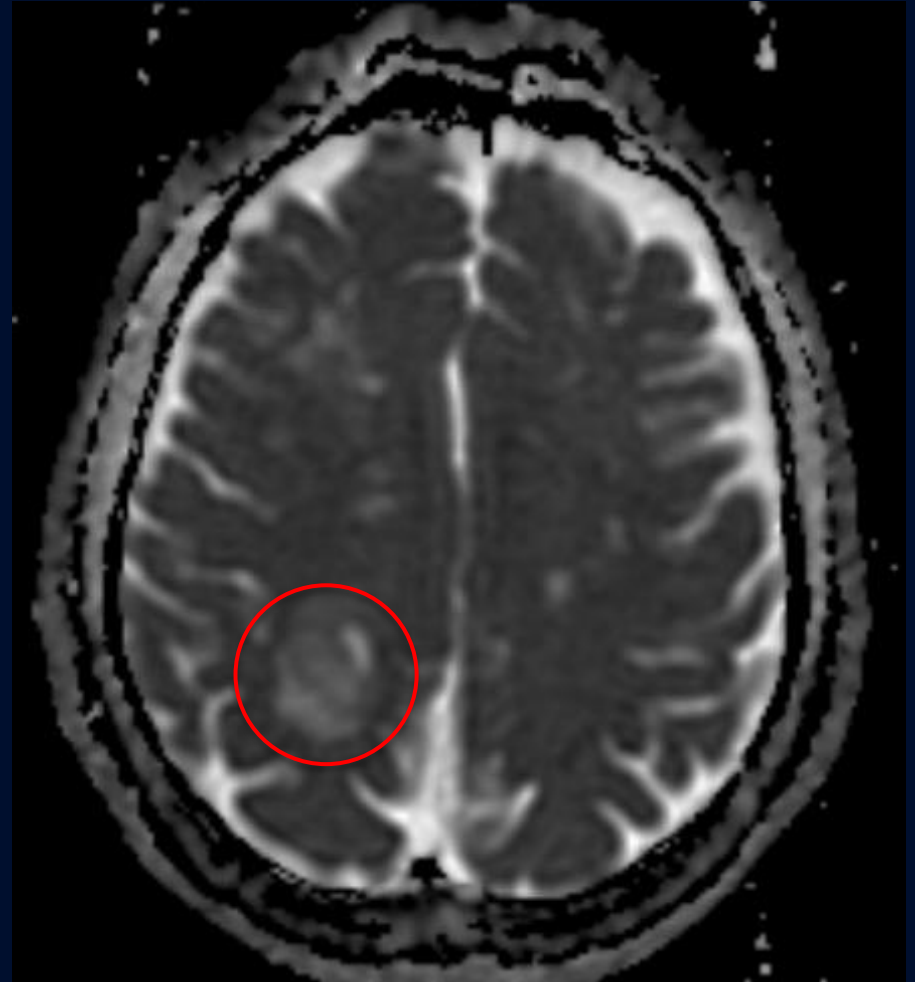
Hyperintensity in the middle cerebellar peduncle and periventricular area

DWI



Hyperintense rim on DWI

ADC



Frontoparietal area shows mild increase on ADC centrally, with lower levels peripherally

# Tumefactive Multiple Sclerosis

- **Definition:** a variant of MS with demyelinating lesions greater than 2 cm on T2-weighted MRI
- **Epidemiology:** most common in female patients in their 30's
- Pathogenesis is currently unknown
- **Clinical Presentation:**
  - MS-like presentation
  - Aphasia
  - Seizures
- **Treatment:**
  - Acute therapy: these therapies are escalated in the absence of symptomatic or imaging response
    - High-dose IV Corticosteroids
    - Plasma exchange therapy
    - Cyclophosphamide + Rituximab
  - Disease modifying therapy: no evidence that shows a preferred agent
    - Caution with fingolimod, associated with worsening of tumefactive MS

# Differential Diagnosis

- High Grade Glioma:
  - Complete ring enhancement
  - Vasogenic edema
- CNS Lymphoma:
  - Most commonly a solidly enhancing area, without central non-enhancement
- Cerebral Abscess:
  - DWI hyperintensity
  - Low intensity on ADC
- Marburg Variant of MS:
  - Incomplete ring enhancement
  - Younger patients
  - Mass effect on imaging

# Imaging Findings

- Common Sites: Frontal and parietal lobes
- **CT**
  - Low attenuation areas corresponding to MRI enhancement
- **MRI**
  - T1 Contrast: Patchy and diffuse, cotton-ball, nodular areas of contrast enhancement
  - T2: Hypointense rim, absent/mild mass effect and edema
  - DWI: Hyperintense rim
  - ADC: High values in center of lesion with lower values on the outside

# References

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