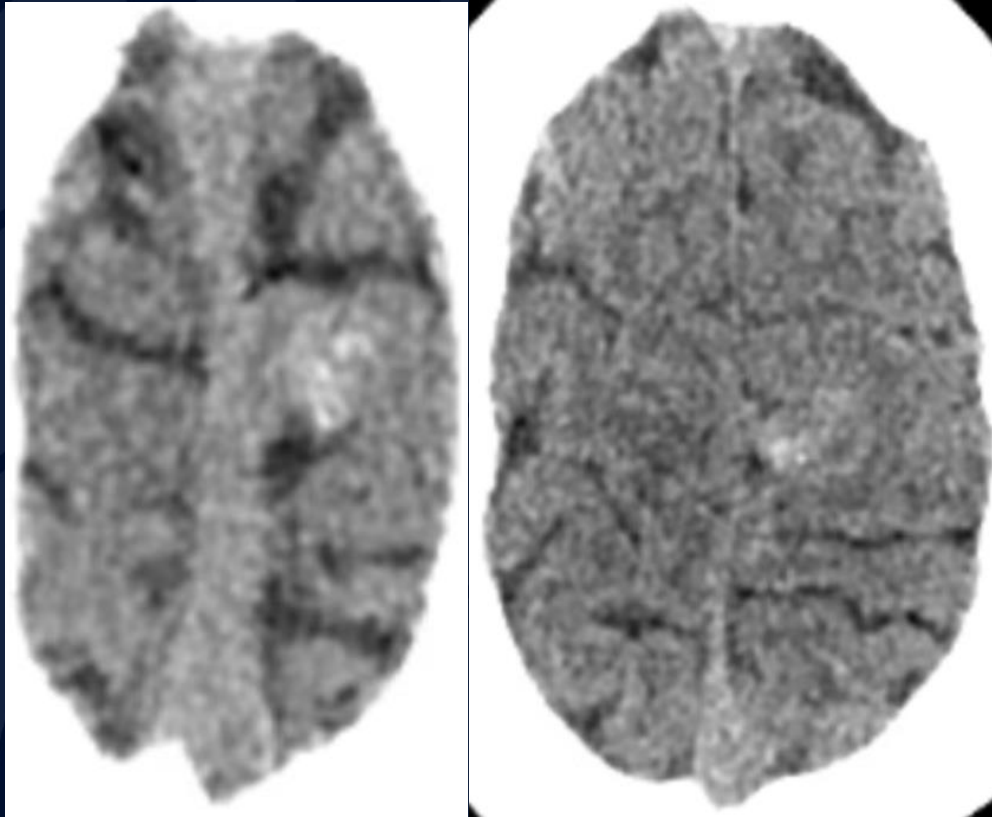
A large, stylized oak leaf graphic in a dark blue color, positioned on the left side of the slide, partially overlapping the text area.

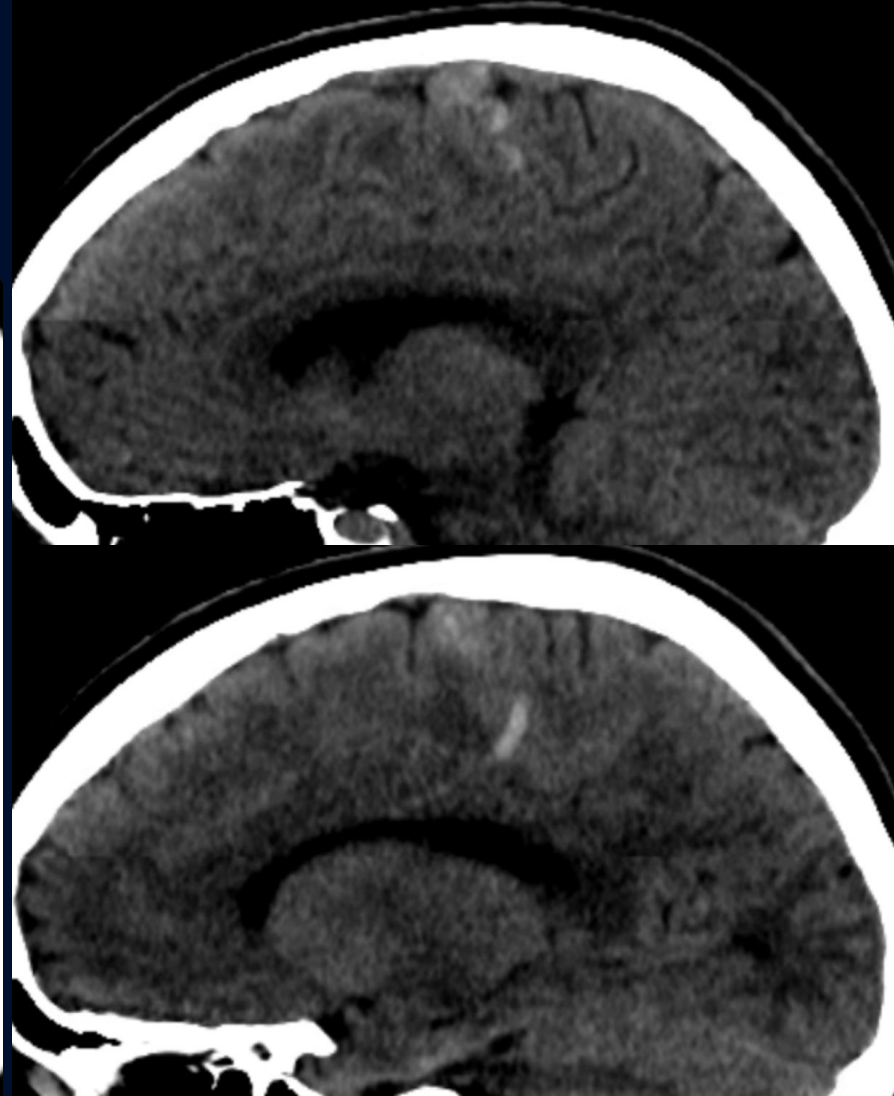
20-year-old female presenting with generalized tonic-clonic seizure and recent history of strep pharyngitis

Shashank Patil, MD
Gary Gong, MD PhD

CTA Brain

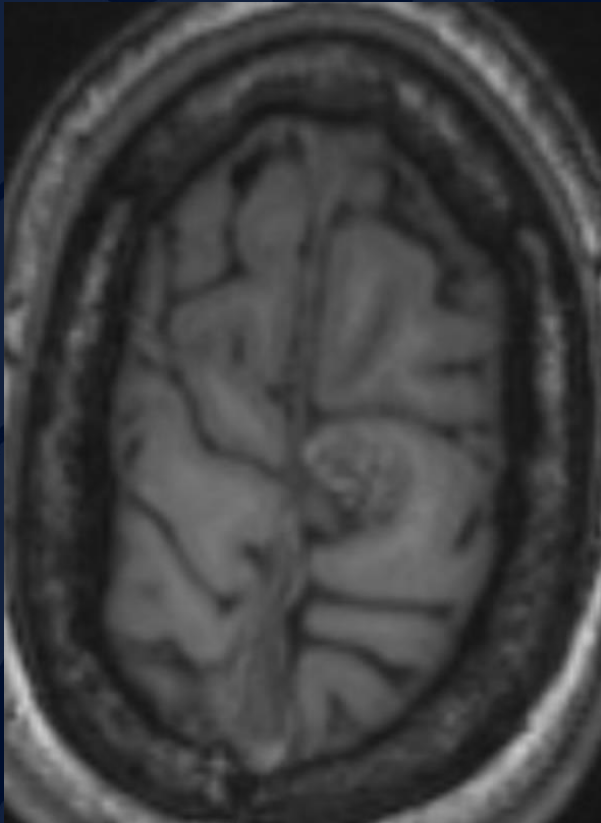


Axial (with contrast staining)

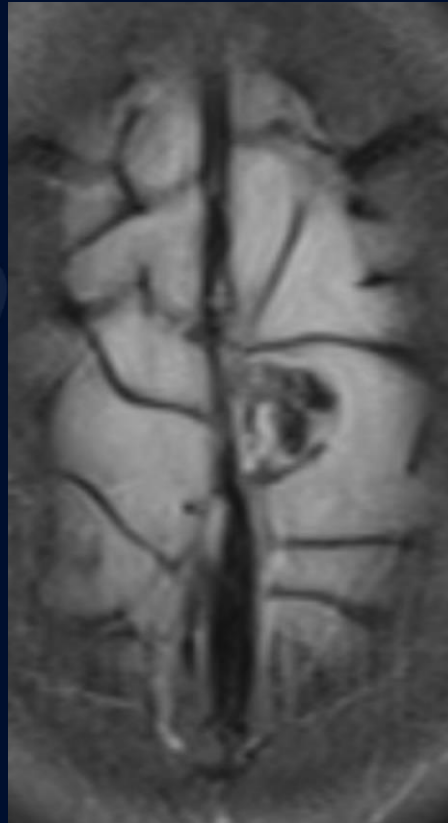


Left Parasagittal

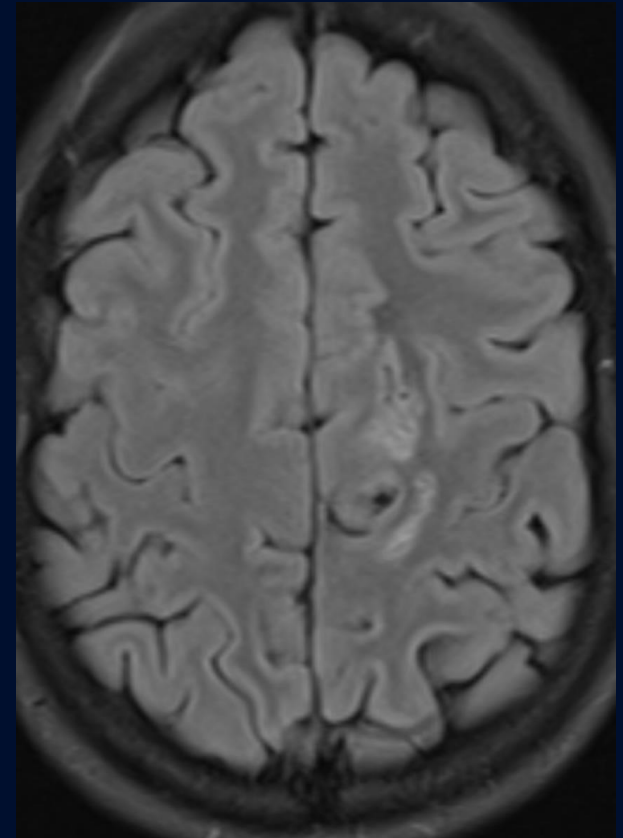
MRI Brain



T1 Pre-contrast Axial

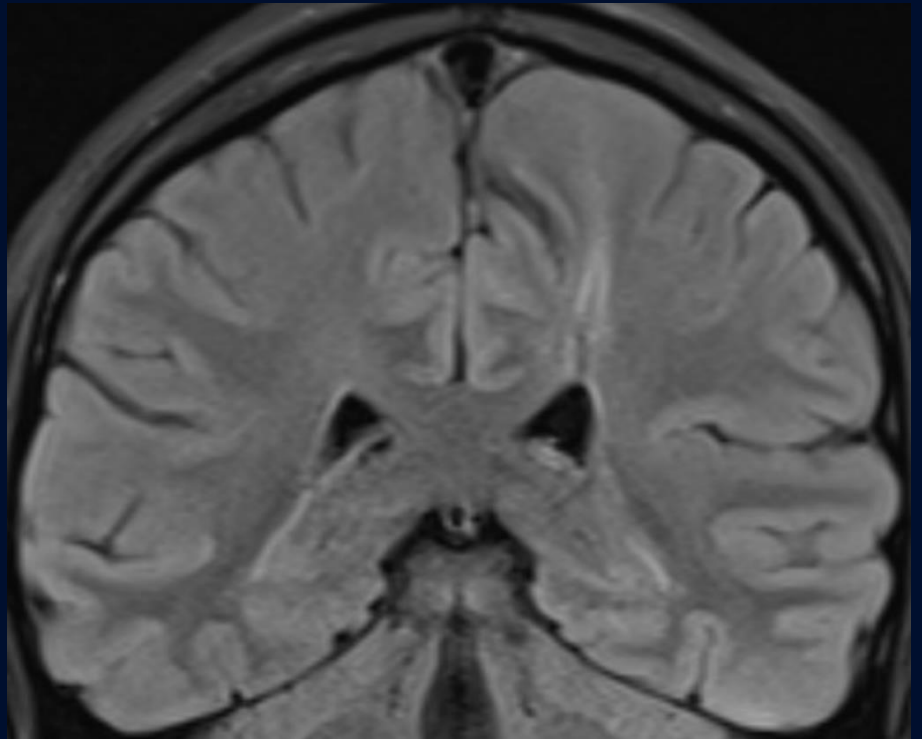
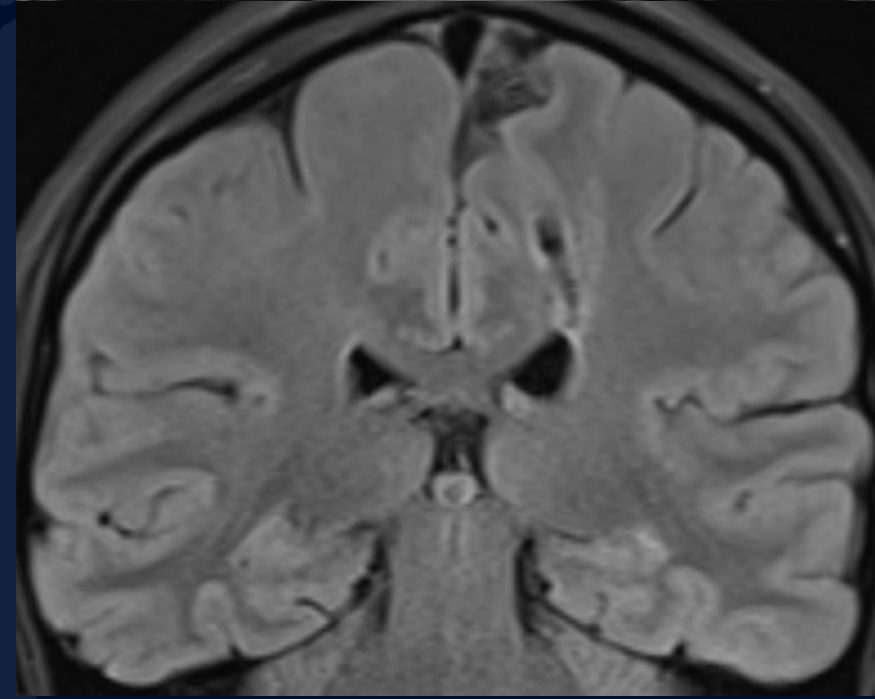
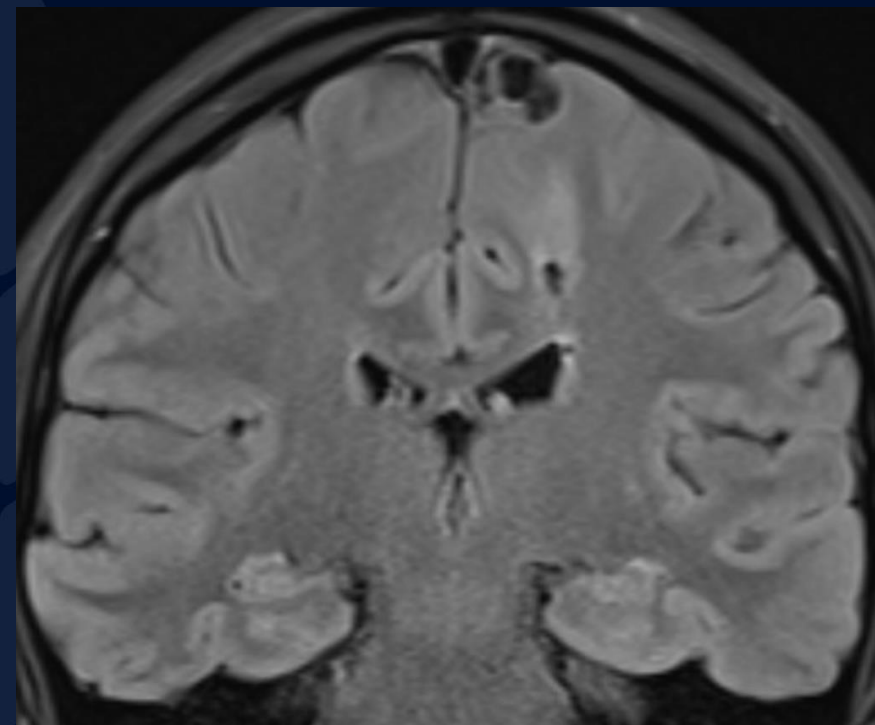


T2 FLAIR Axial

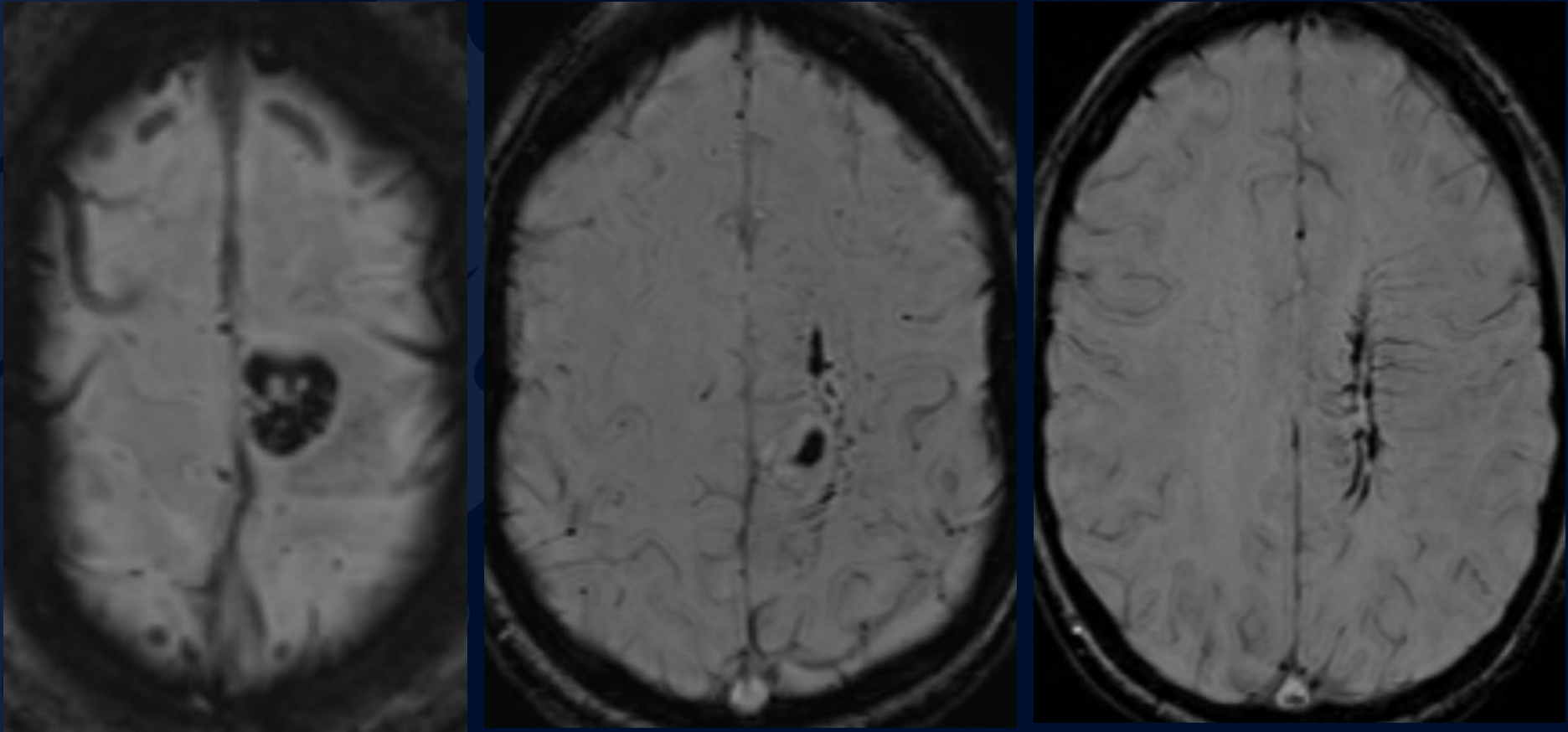


T2 FLAIR Axial

MRI T2 FLAIR Coronal



Susceptibility-Weighted Imaging



Cerebral Angiogram – Left ICA Late Venous Phase

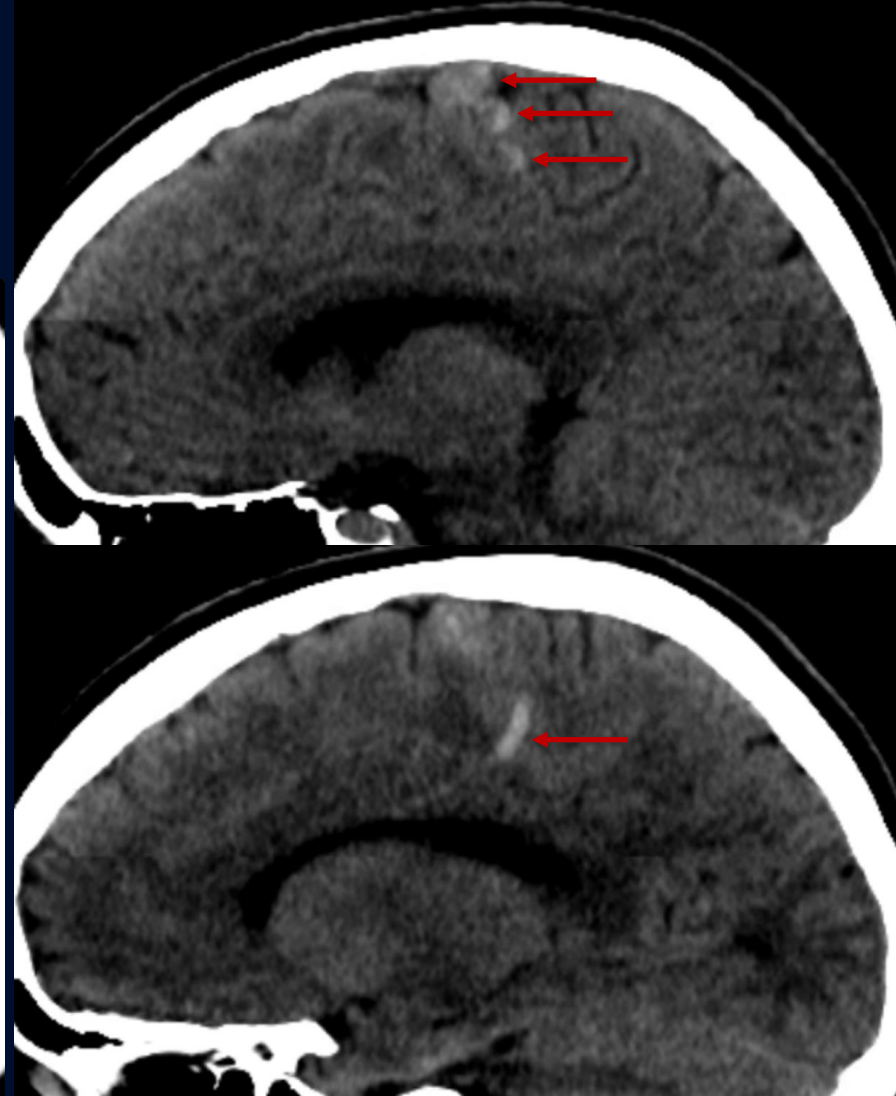
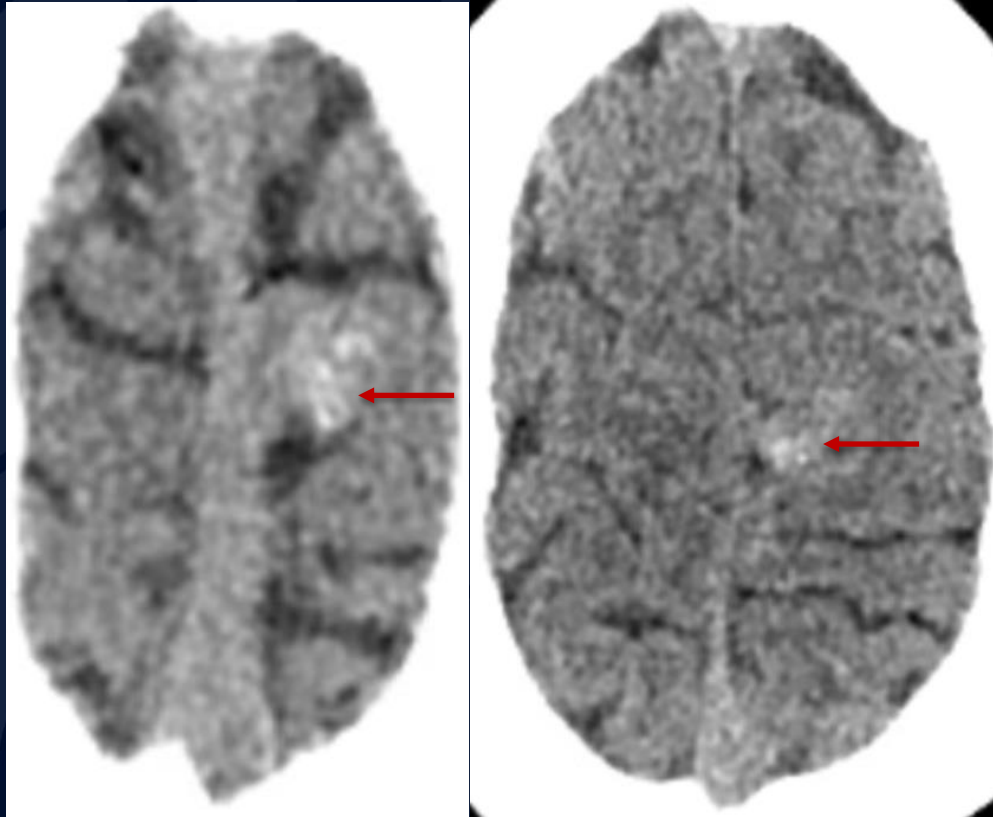




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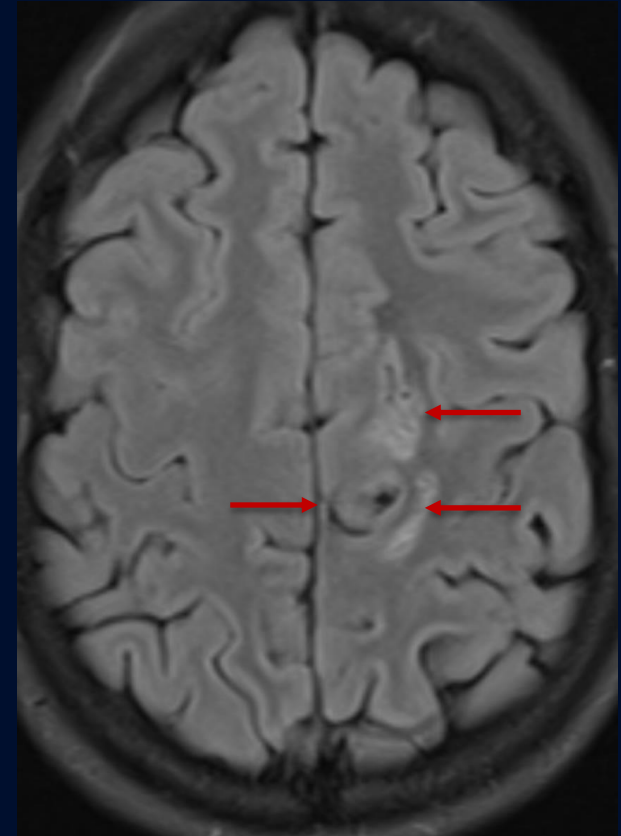
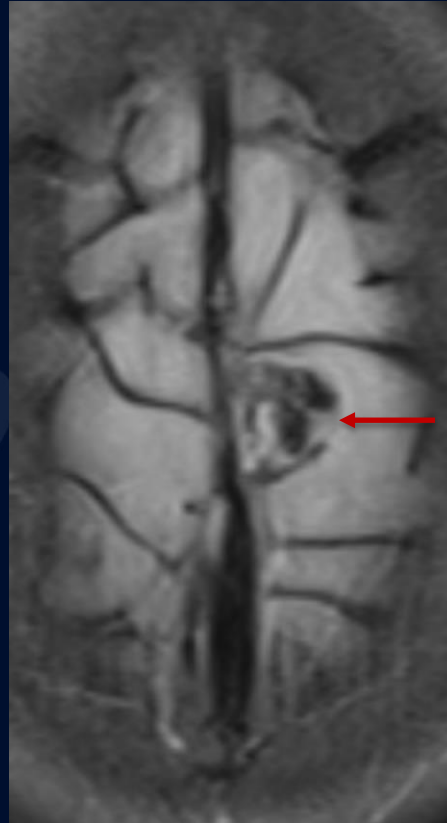
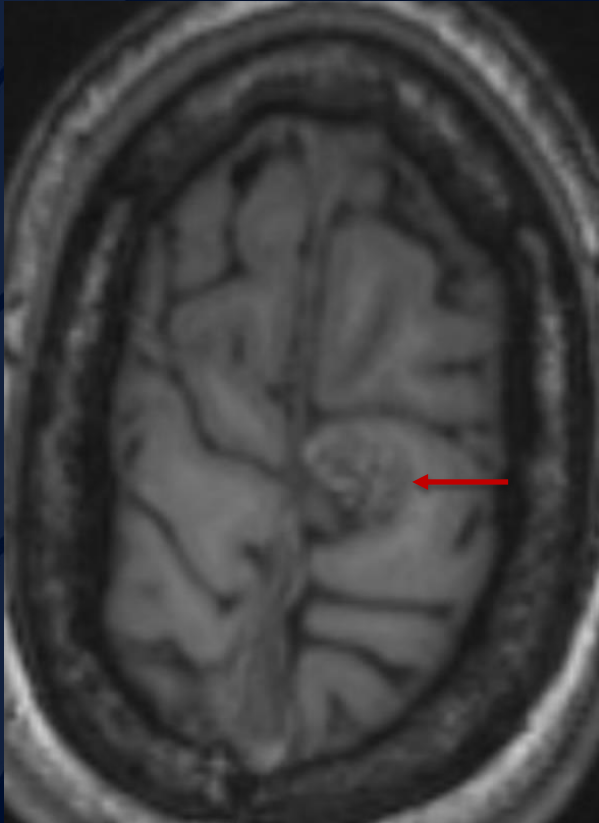
Developmental Venous Anomaly

CTA Brain

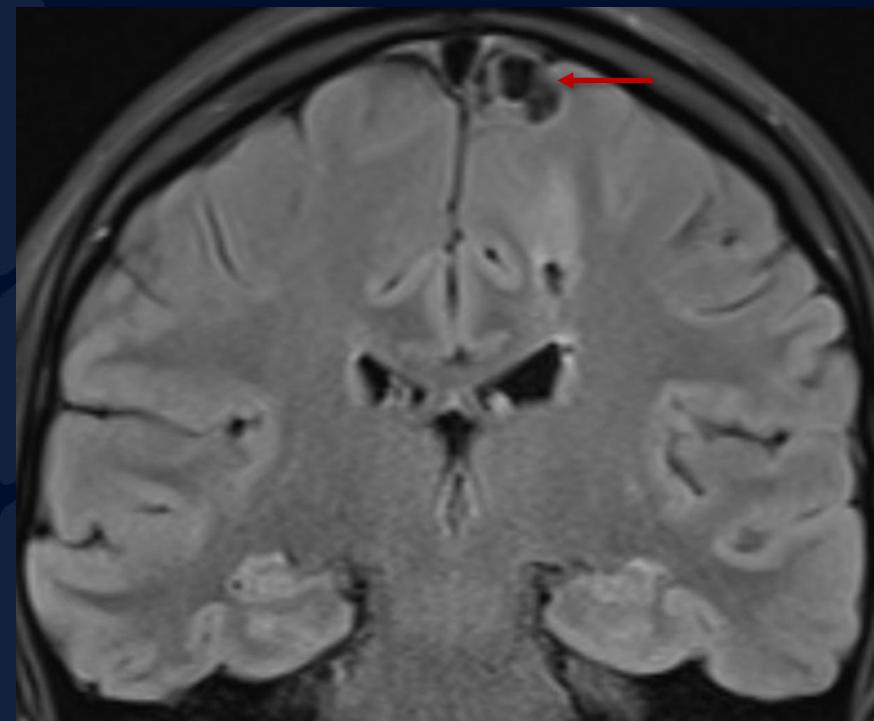


Tortuous hyperdensity in left frontal lobe extending from the left centrum semiovale to the superior sagittal sinus. Postcontrast images demonstrated heterogeneous area consistent with thrombosis of prominent left developmental venous anomaly.

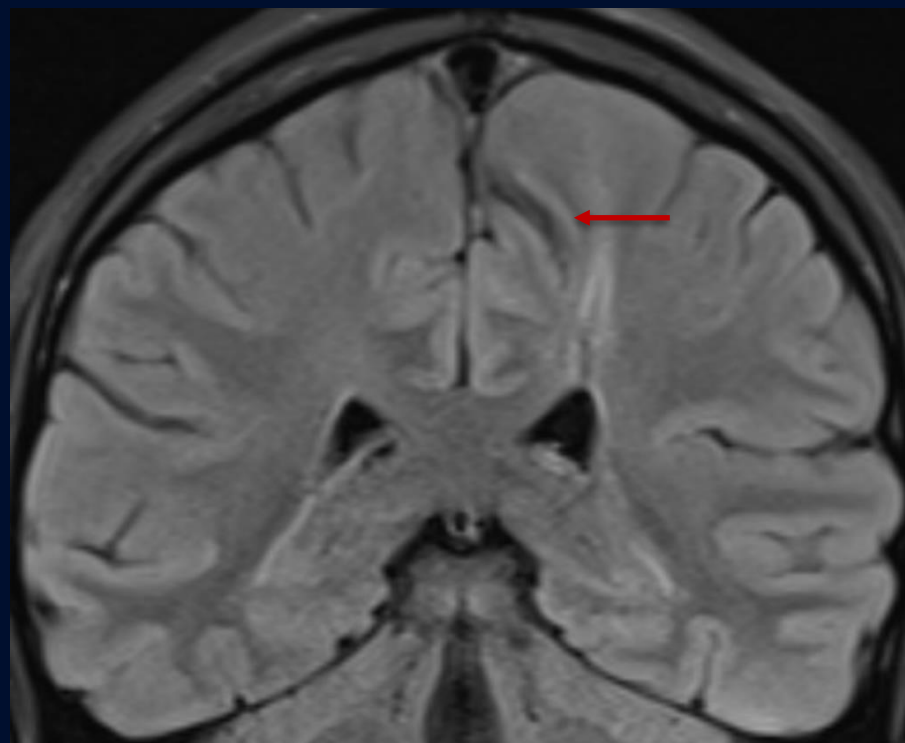
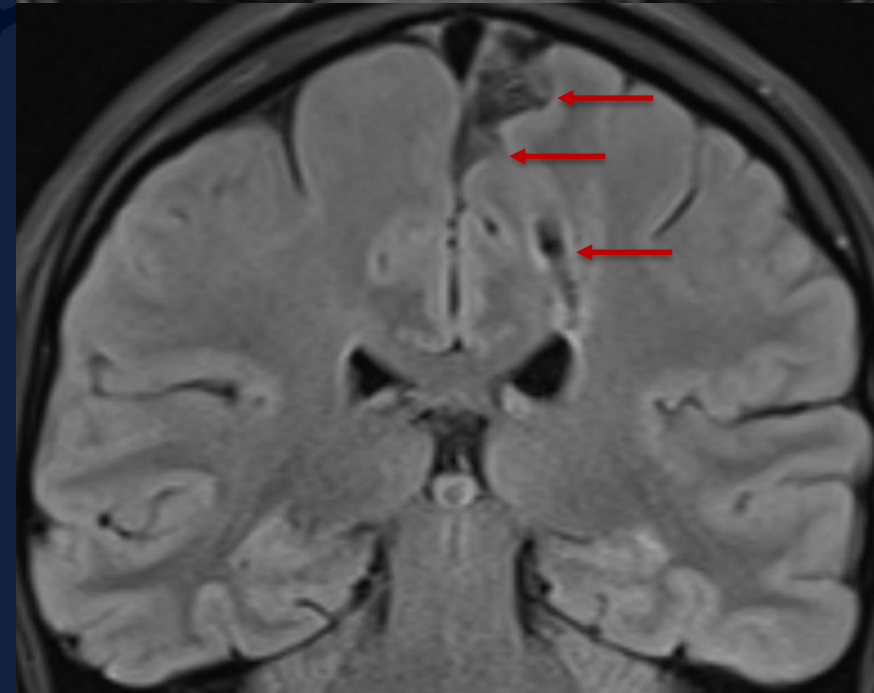
MRI Brain



Region of T1 hyperintensity within the superior posterior left frontal lobe showing mixed T2 intensity with hemosiderin ring corresponding to the area of presumed prior thrombosis of a prominent left-sided cerebral developmental venous anomaly/stent.

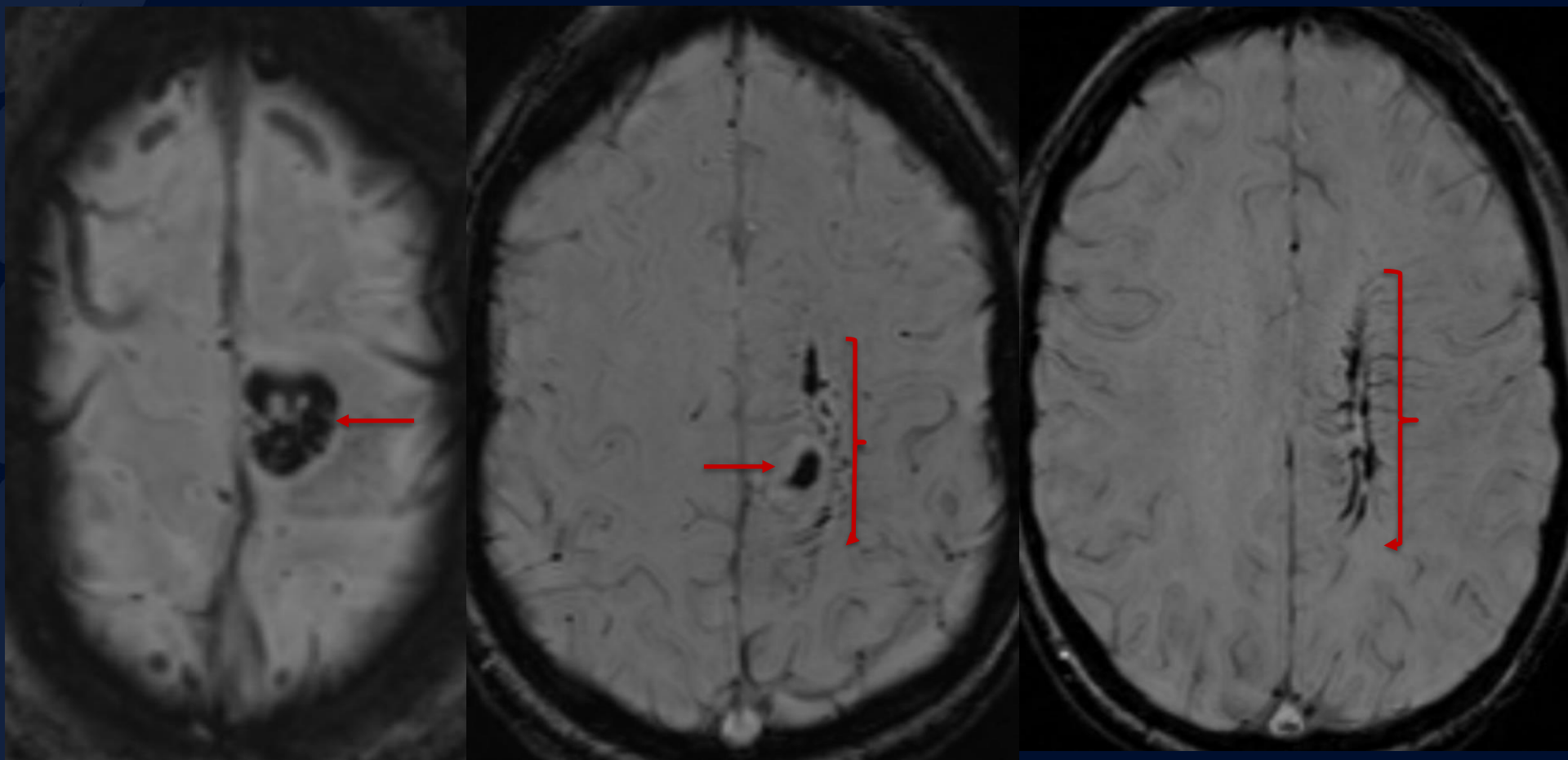


Left parasagittal developmental venous anomaly and drainage pattern redemonstrated with previously noted intraluminal thrombus.



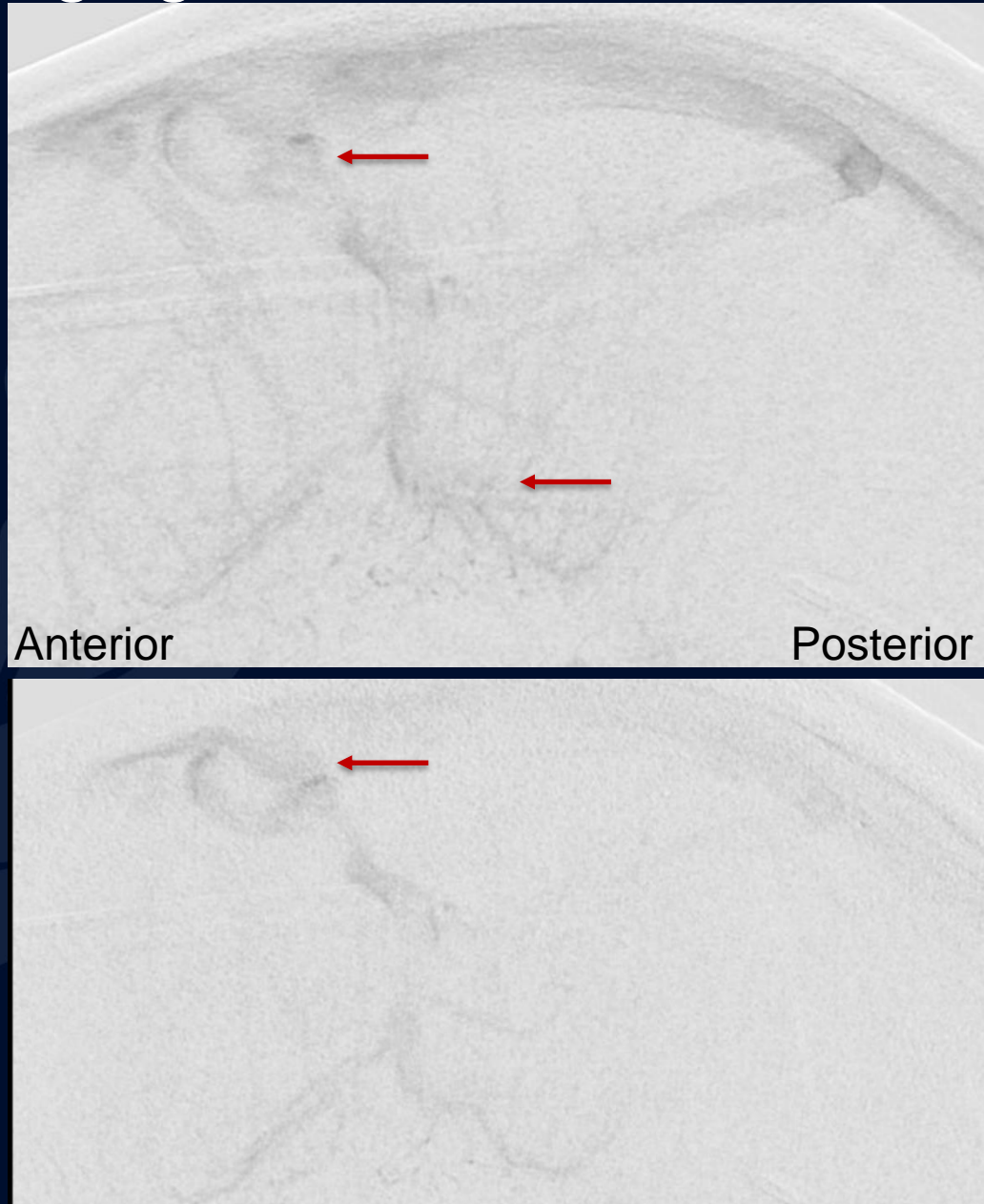
MRI T2 FLAIR Coronal

Susceptibility-Weighted Imaging



SWI show prominent tortuous veins in the left frontal region.

Cerebral Angiogram – Left ICA Late Venous Phase



Collection of small tortuous veins, "caput medusae," draining into a left anterior parasagittal venous anomaly

Developmental Venous Anomaly (DVA)

- AKA Cerebral Venous Angioma
- Definition: Congenital malformation of veins which drain normal brain
- Epidemiology: Most common cerebral vascular malformation (account for 55% of all such lesions)
 - Very common incidental finding, with an estimated prevalence of 2.5-9% on contrast-enhanced MRI scans
- Presentation: Typically, an incidental finding but patients can present with intracranial hemorrhage (1-5%). An association has also been described with ischemic stroke and epilepsy.
- Pathophysiology: Etiology remains uncertain but may relate to arrested development of venous structures. Histologically they consist of many abnormally thickened veins with normal feeding arteries and capillaries.
- Locations: can appear anywhere intracranially
 - Frontoparietal region (Most common, 36-64%), usually draining towards the frontal horn of the lateral ventricle
 - Cerebellar hemisphere (14-27%) draining towards the 4th ventricle
- Associations:
 - Lesions usually solitary (75%)
 - ~20% (range 8-33%) of cases are associated with cavernous malformations
- Imaging Findings:
 - **CT**: If large, the draining vein may be seen on non-contrast CT and is confirmed with contrast administration as a linear or curvilinear enhancing structure
 - **MRI**: SWI is the preferred sequence in venous anomalies and proved to have better detectability of venous structures than conventional T2-weighted imaging. Signals on SWI are not compromised by low-velocity venous flow.
 - **Angiography**: Caput medusae or pam tree appearance (collection of dilated medullary veins converge in an enlarged transcortical or subependymal collector vein) is pathognomonic and seen only in the venous phase. Arterial phase appears normal although late capillary blush may be present.

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