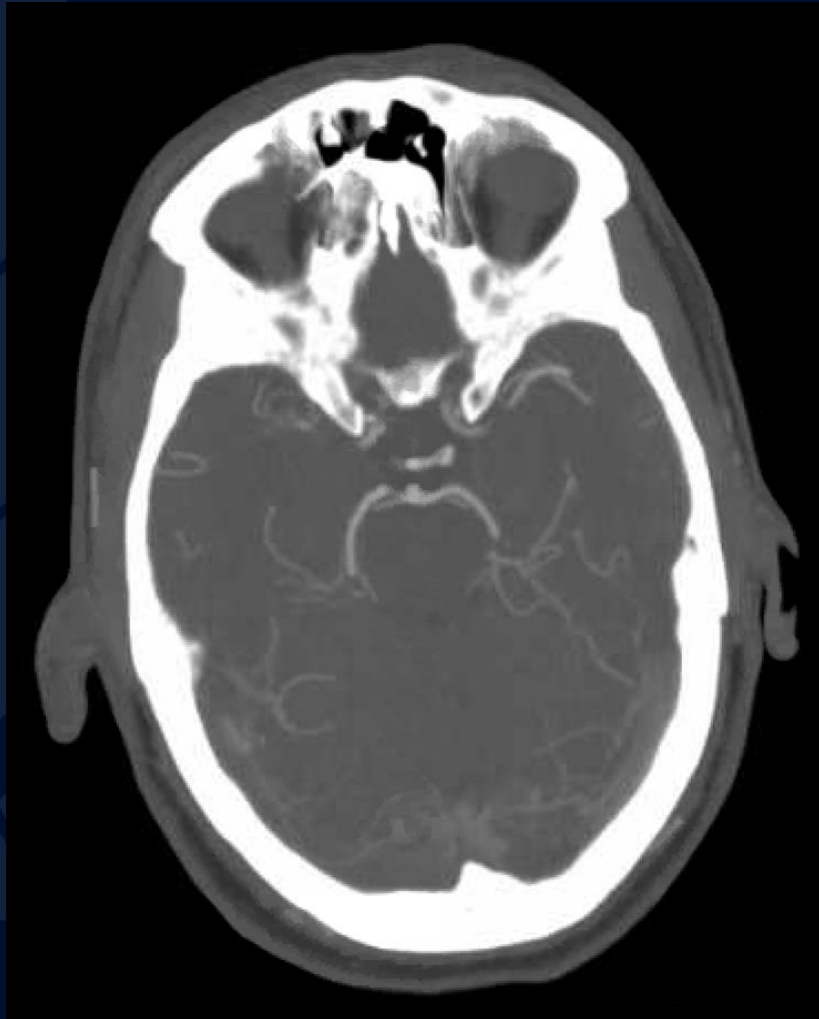


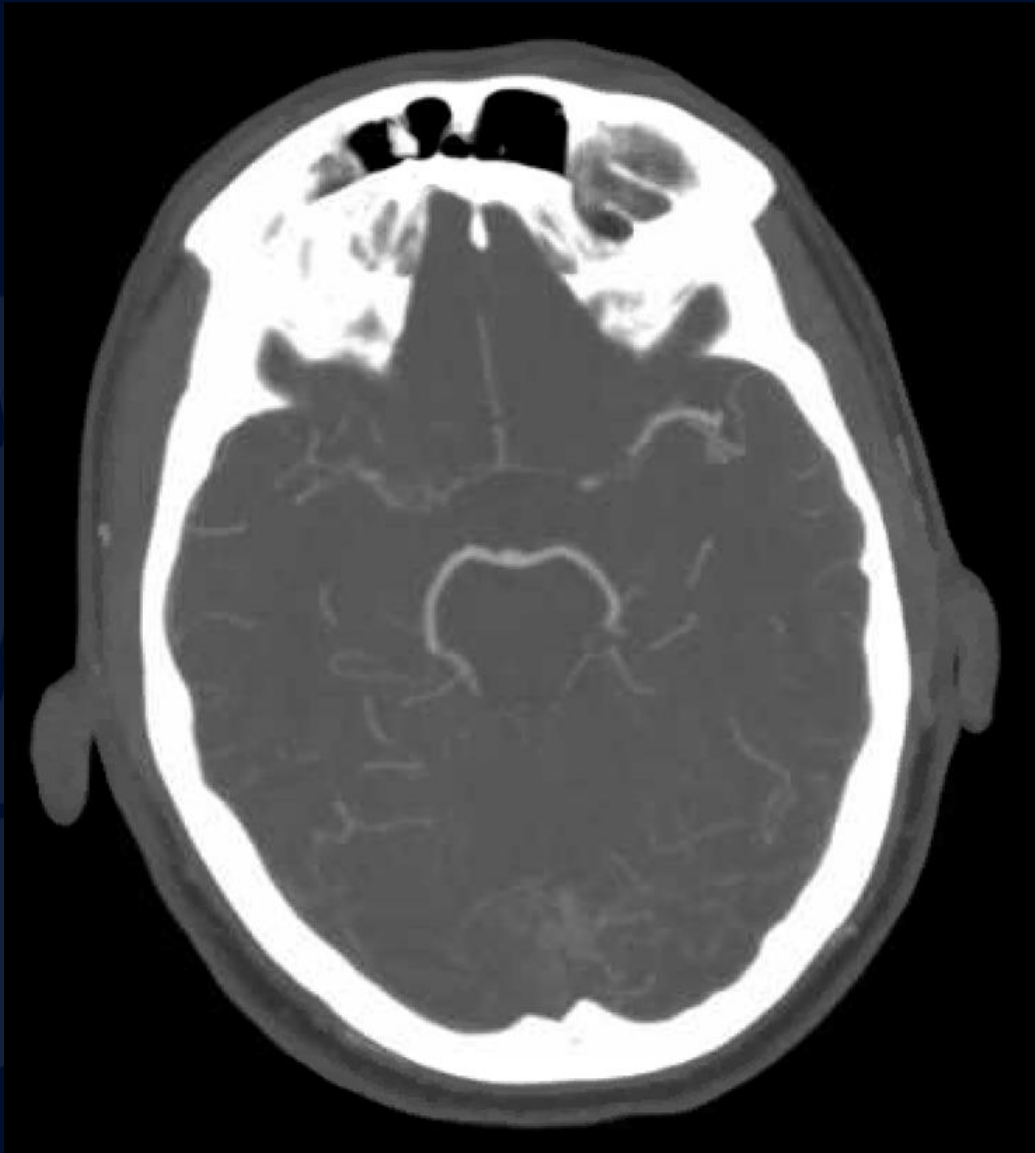
A large, stylized oak leaf graphic in a dark blue color, positioned on the left side of the slide and partially overlapping the main text area.

45-year-old male presenting with acute right hemiparesis and aphasia

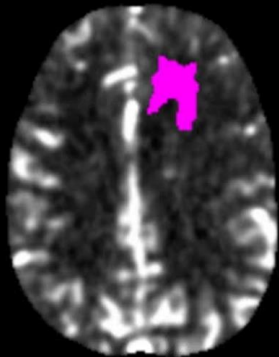
Zoe Garvey, M4
Racquel Helsing, MD





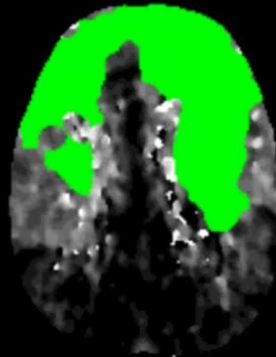


CBF



● CBF < 30%: 9 ml

Tmax

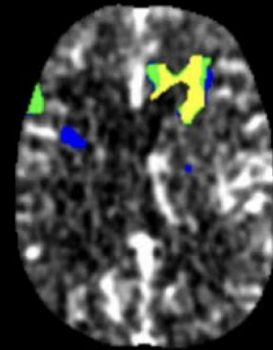


● Tmax > 6.0s: 185 ml

Mismatch volume: 176 ml

Mismatch ratio: 20.6

CBV



● CBV < 34%: 14 ml

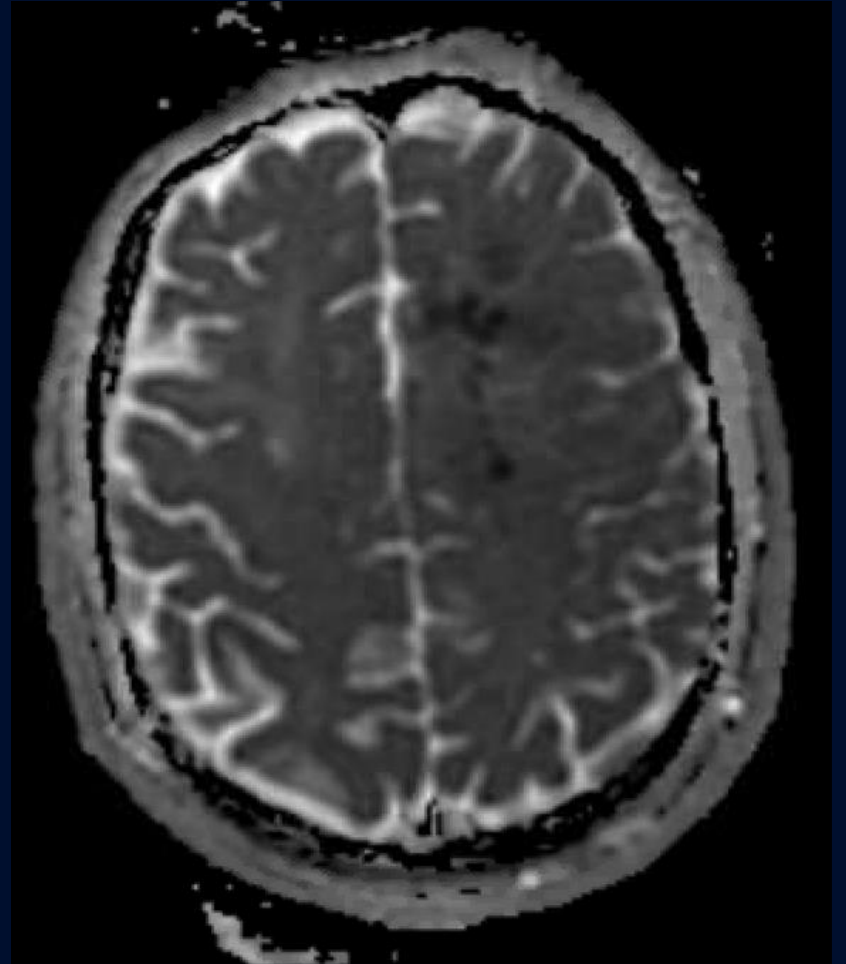
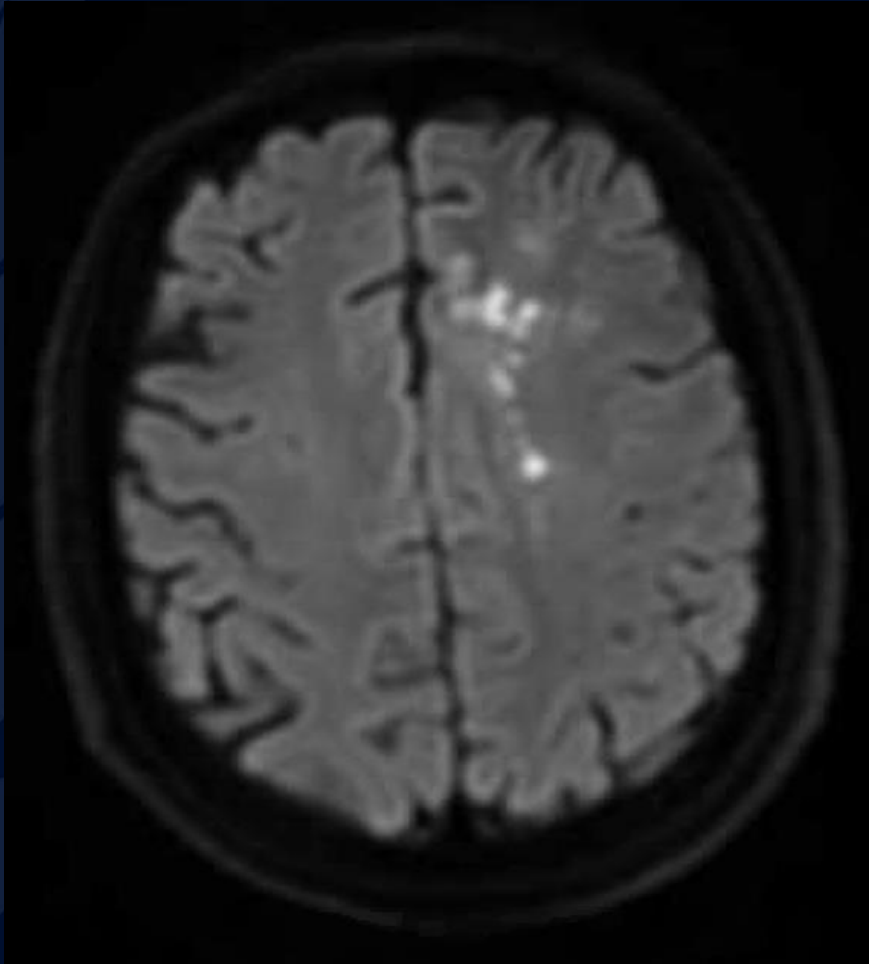
● CBV < 38%: 28 ml

● CBV < 42%: 36 ml

CBV Index (rCBV in Tmax > 6s): 0.7

RAPID





A large, stylized oak leaf graphic in a dark blue color, positioned on the left side of the slide. It features detailed vein patterns and a lobed edge.

?

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

Acute Stroke in Moyamoya Disease

CT non-contrast

Encephalomalacia



Left paramedian hypodensity, concerning for acute infarct

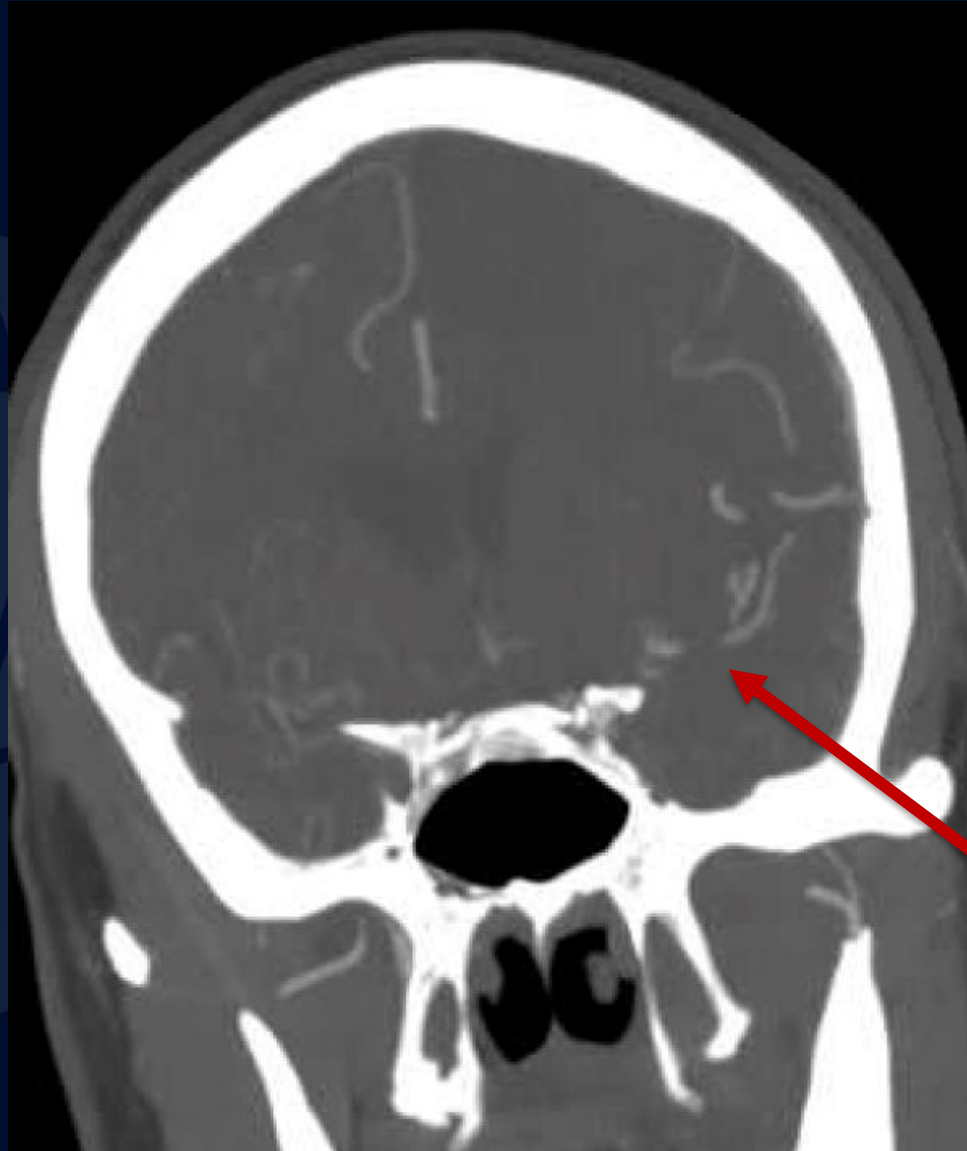
CT angiogram



Right M1 occlusion

Left M1 occlusion
versus high-grade
stenosis

CT angiogram

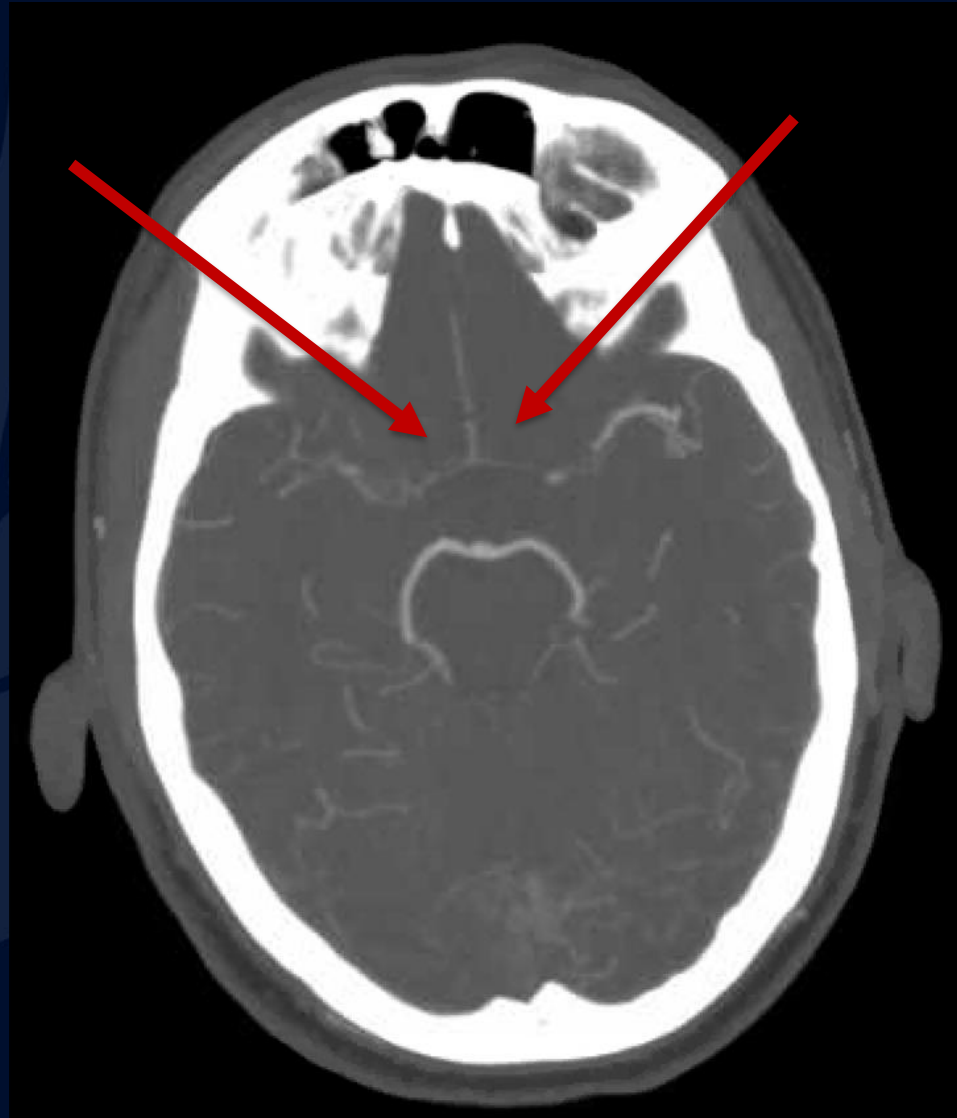


Lack of opacification of the right MCA

Left M1 occlusion versus high-grade stenosis

CT angiogram

Right ACA high grade stenosis



Left ACA high grade stenosis

CT perfusion

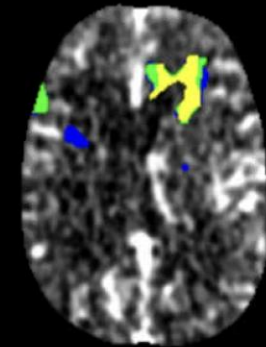
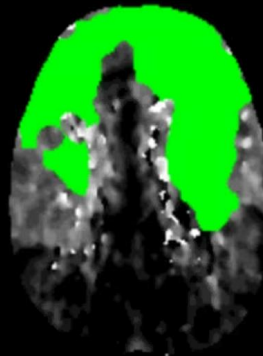
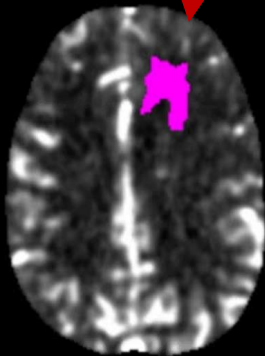
Core

Penumbra

CBF

Tmax

CBV



● CBF < 30%: 9 ml

● Tmax > 6.0s: 185 ml

Mismatch volume: 176 ml

Mismatch ratio: 20.6

● CBV < 34%: 14 ml

● CBV < 38%: 28 ml

● CBV < 42%: 36 ml

CBV Index (rCBV in Tmax > 6s): 0.7

RAPID

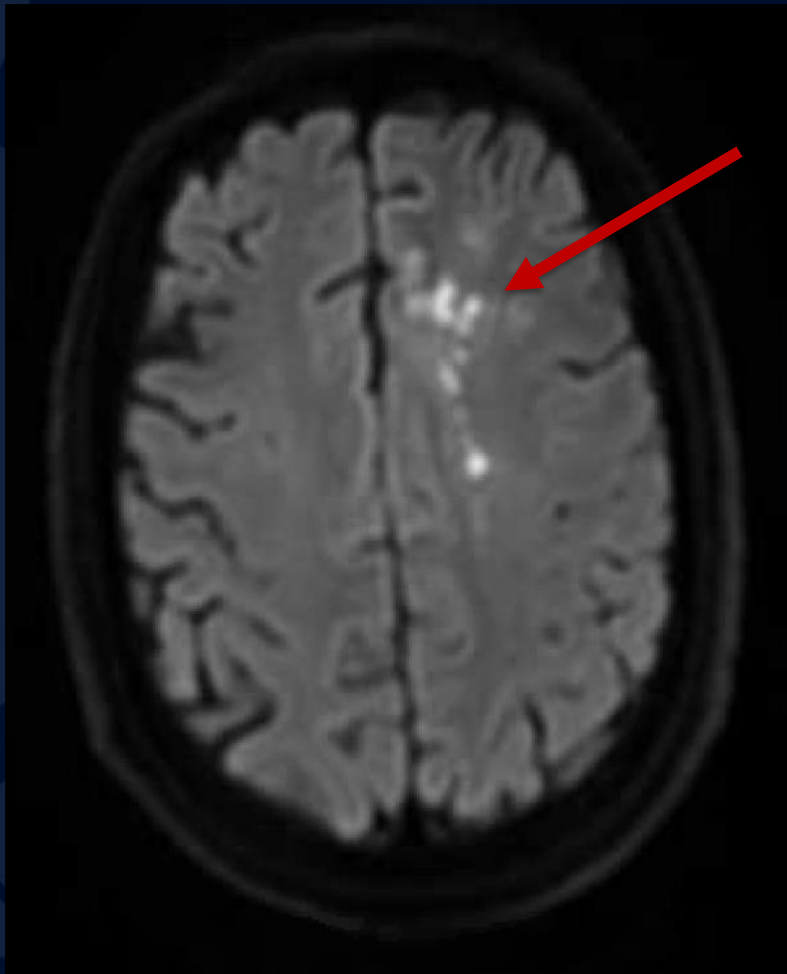
Left ICA angiogram



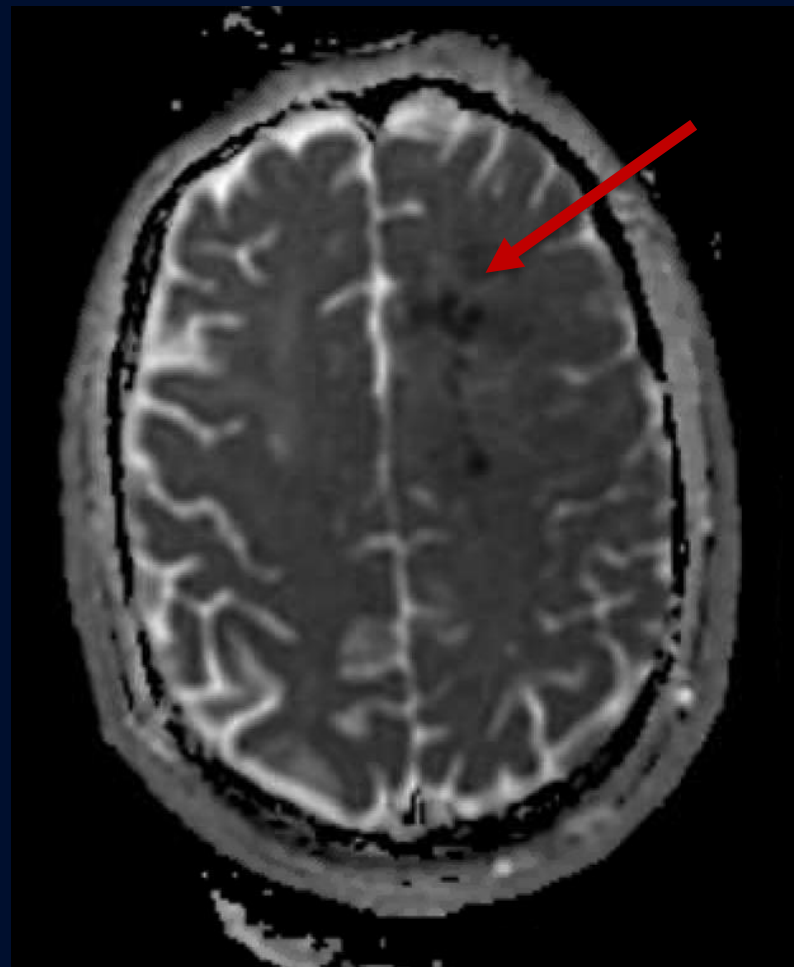
Left ICA bifurcation
with high-grade
stenosis in both left
ACA and left MCA

"Puff of Smoke"

MRI DWI



MRI ADC



DWI hyperintensity corresponding to ADC hypointensity = diffusion restriction, as may be seen in the setting of acute ischemic infarction

Moyamoya

Moyamoya disease is an idiopathic, progressive, non-inflammatory, non-atherosclerotic, vaso-occlusive disease characterized by progressive narrowing of distal ICA/proximal circle of Willis vessels with secondary collateralization.

The term moyamoya disease (MMD) should be reserved for an idiopathic condition.

Moyamoya syndrome can be due to numerous conditions causing arterial occlusion of the circle of Willis with resultant collateralization. May have similar appearance to Moyamoya disease.

Moyamoya

Epidemiology

- Bimodal distribution
 - 5-10 years and second peak during 4th decade
- Most frequent cause of stroke in Asian children

Presentation

- Most common is ischemic stroke followed by TIA and intracranial hemorrhage
- Less frequently present with seizure

Imaging Findings

Cerebral angiogram

- Small abnormal net-like vessels proliferate giving characteristic “puff of smoke” sign

CT without contrast

- 50-60% of affected children show anterior>posterior atrophy
- Stroke (children)
- Intracranial hemorrhage (more common in adults)
- Well circumscribed, hypodense lesions measuring simple fluid density

CT with contrast

- Enhancing dots (enlarged lenticulostriate arteries) in basal ganglia
- Abnormal netlike vessels at base of brain

CT perfusion

- Depicts penumbra and infarct core in acute ischemia

Imaging Findings

MRI

- T1: multiple dot-like flow voids in basal ganglia
- T2: increase sign in small vessel cortical and white matter infarcts, collateral vessels = net-like filling defects in basal cisterns
- Flair: Bright sulci = leptomeningeal poison ivy sign, slow-flowing engorged pial vessels, thickened arachnoid membranes, correlates with decreased cerebral vascular reserve
- DWI: helpful for “acute on chronic” disease
- T1+C: enhancing “dots” in basal ganglia and net-like thin vessels in cisterns, leptomeningeal enhancement

References

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