PEDIATRIC STROKE AS AN INITIAL MANIFESTATION OF MOYAMOYA DISEASE

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Southeastern Neuroradiological Society (SENRS) 2026
October 15–18, 2026

UNC SCHOOL OF MEDICINE

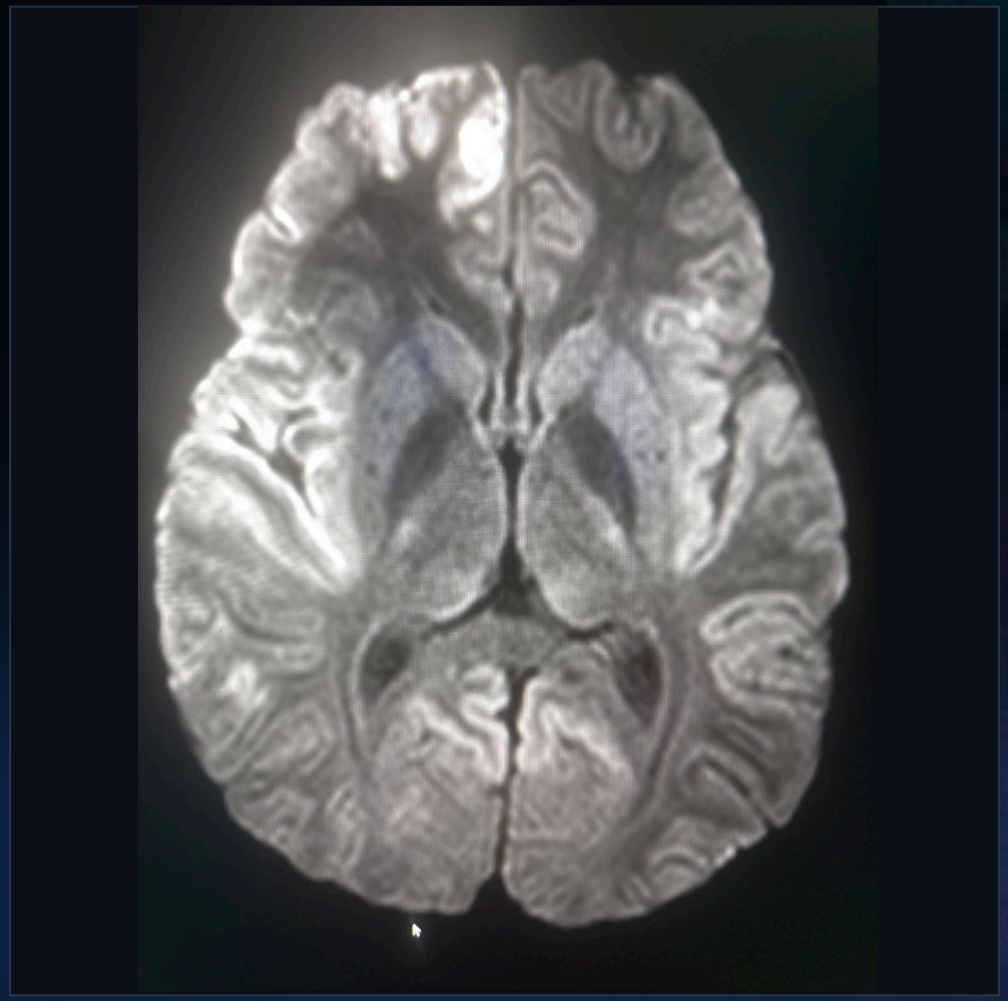
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CLINICAL PRESENTATION

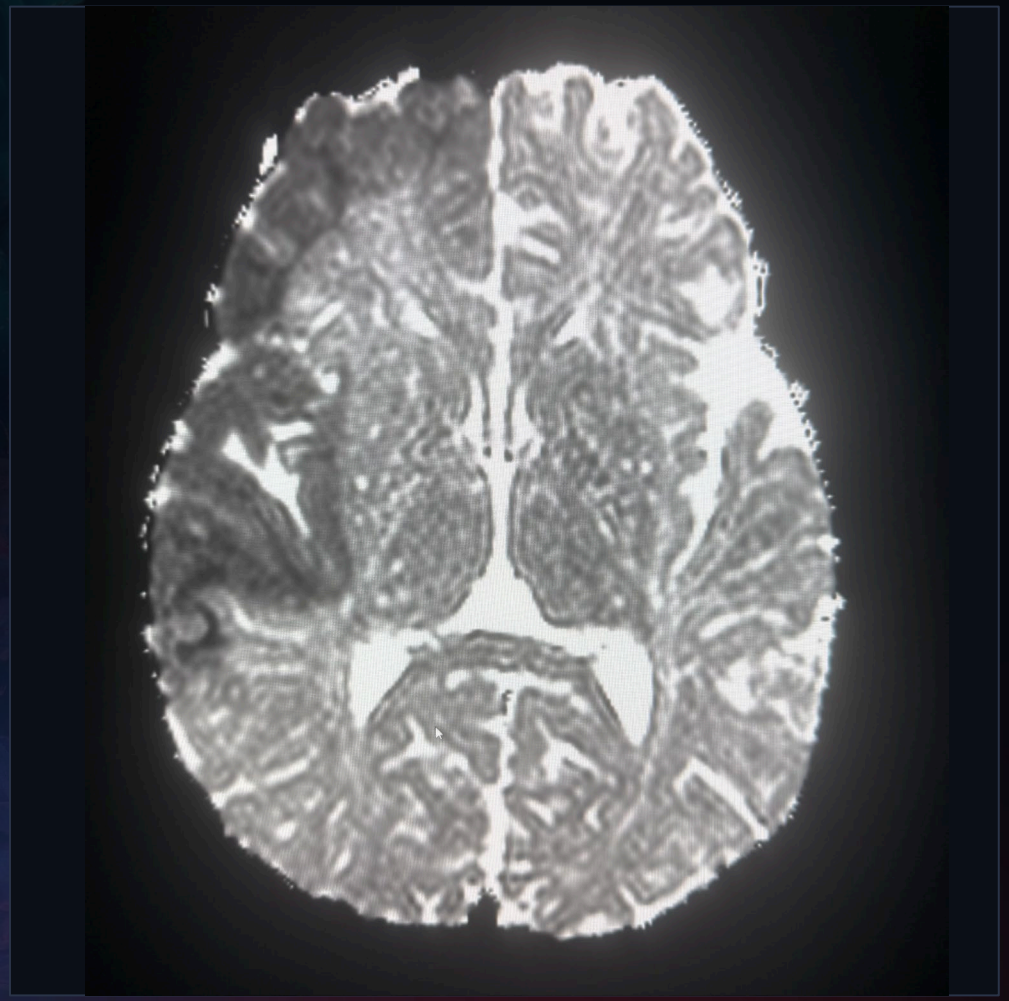
9 y.o. male, previously healthy

- Intermittent headache and left arm pain
- Acute left upper extremity weakness
- Outside CT: right frontal ischemia
- Transfer for stroke workup

IMAGING: MRI

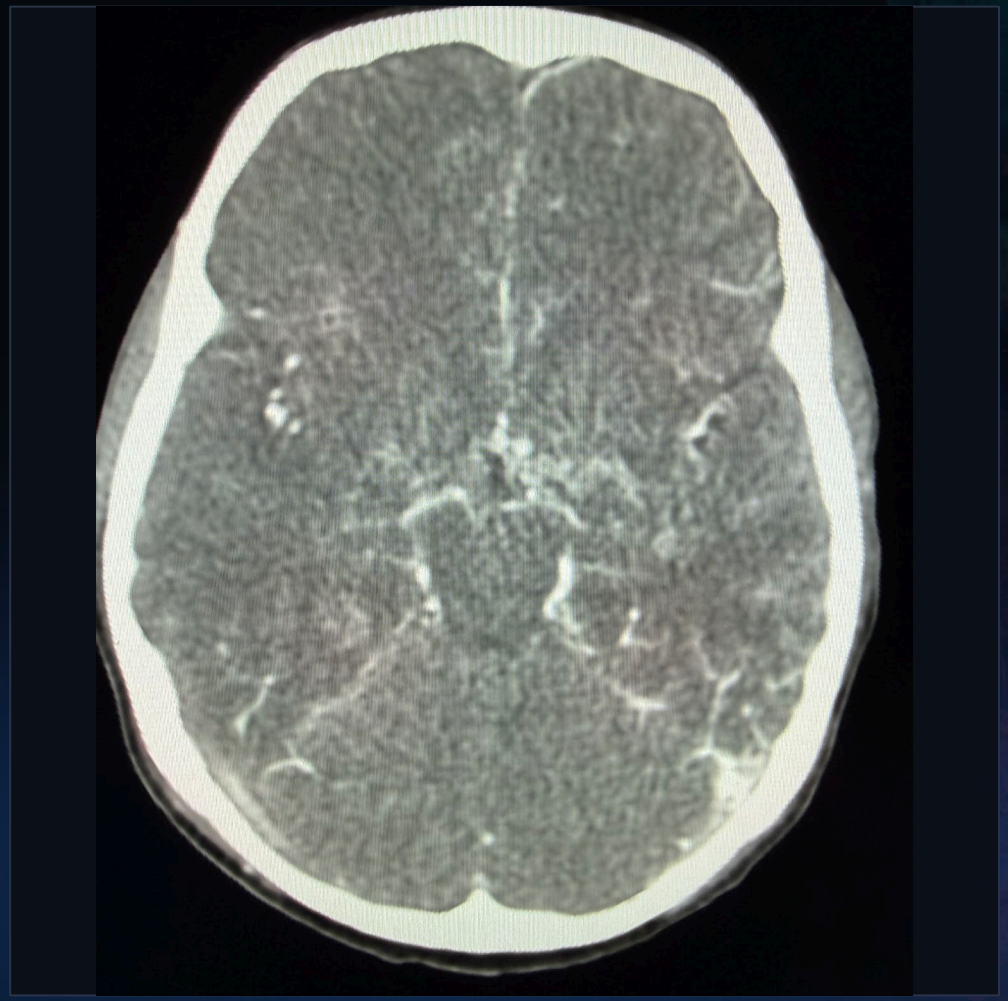


A DWI: restricted diffusion, right hemisphere

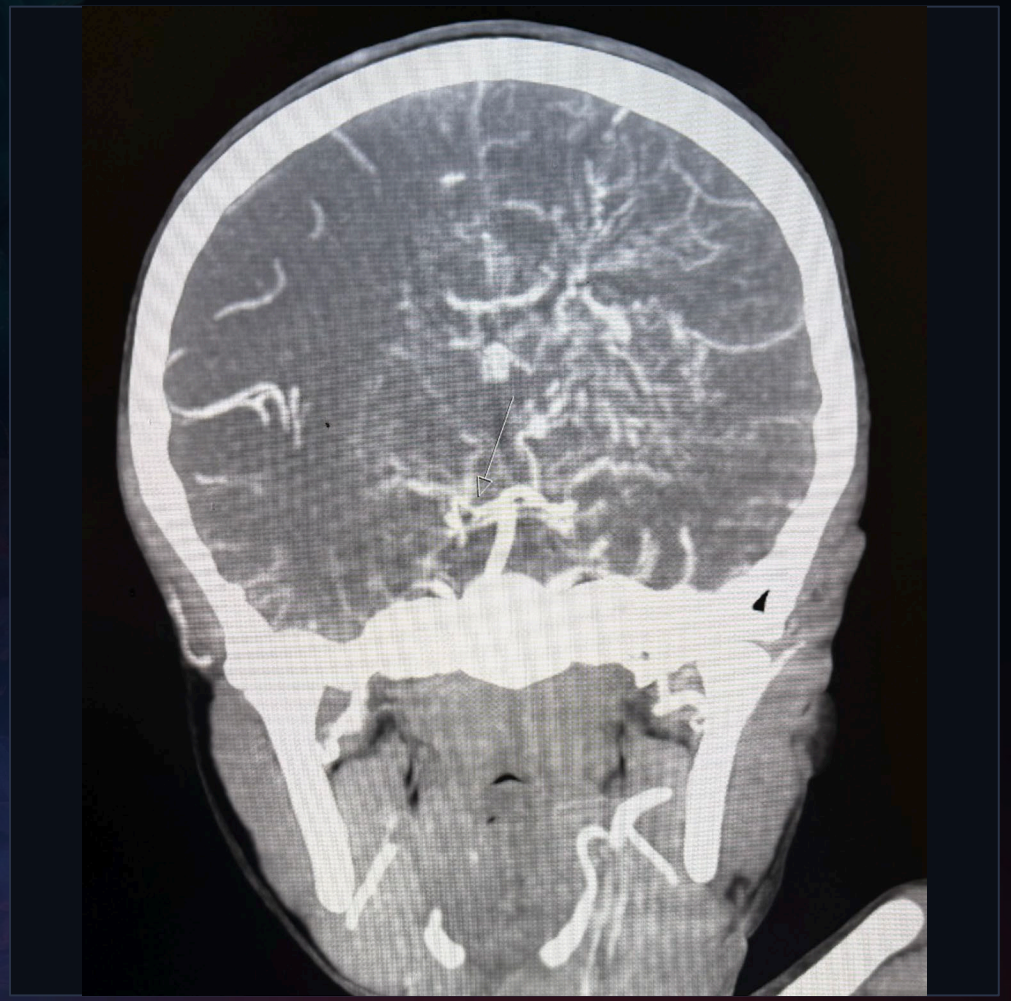


B ADC: corresponding low signal confirms true restriction, excluding T2 shine-through

IMAGING: CT ANGIOGRAPHY



C Axial CTA



D Coronal CTA

Vessel tangle typical of moyamoya steno-occlusive disease

IMAGING: DSA

Bilateral moyamoya arteriopathy confirmed

RIGHT ICA

Suzuki **IV**

PCA and MMA collaterals

LEFT ICA

Suzuki **III**

PCA, MMA and IMA collaterals



Narrowing
ICA bifurcation stenosis

Initiation
Moyamoya vessels appear

Intensification
Moyamoya vessels increase; ACA and MCA fade

Minimization
Moyamoya vessels regress; ECA supply begins

Reduction
Main cerebral arteries disappear

Disappearance
ECA supply only

MANAGEMENT & OUTCOME

Management

- Medical management: Antiplatelet therapy
- Indirect surgical revascularization
- No complications

Outcome

- Left arm weakness improving
- No recurrent headaches
- No new deficits

Indirect technique favored in children: small vessels, high angiogenic potential

TAKE HOME POINTS

1. Moyamoya: progressive steno-occlusion of the terminal ICAs. Children present with TIA or stroke.

2. MRI shows the infarct. CTA shows stenosis and collaterals. DSA stages and plans surgery.

3. Revascularization is the primary treatment. Indirect techniques are favored in children.

REFERENCES

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2. Suzuki J, Takaku A. Cerebrovascular "moyamoya" disease: disease showing abnormal net-like vessels in base of brain. Arch Neurol. 1969;20(3):288-299.


THANK YOU