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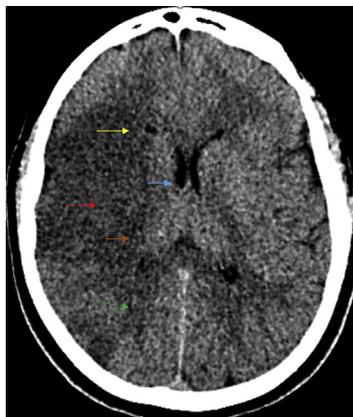
<https://doi.org/10.1016/j.annemergmed.2019.06.003>

Figure 1. CT of the brain without contrast (axial view), showing ischemic right middle cerebral infarct with increased hypoattenuation (red arrow) and more conspicuous loss of gray-white matter interface involving the insula (orange arrow), frontal lobe (yellow arrow), parietal lobe (green arrow), and lateral basal ganglia (blue arrow).



Figure 2. CT angiogram (axial view) showing positive middle cerebral artery sign (arrow), which reflects clot within its lumen.

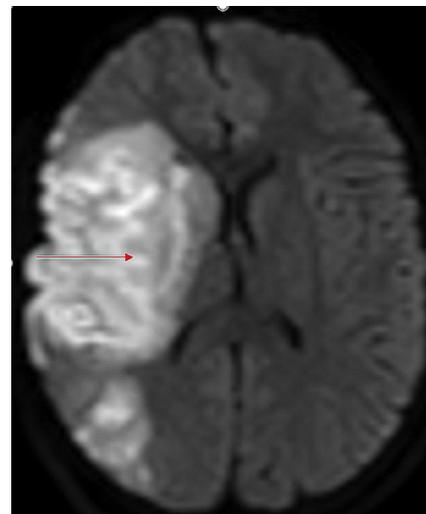


Figure 3. MRI (axial view) showing restricted diffusion in the right middle cerebral artery territory involving the insula, frontal lobe, parietal lobe, and lateral basal ganglia, reflecting acute ischemic infarction (arrow).



Figure 4. CT cerebral angiogram (sagittal view) showing incomplete reconstitution of the right proximal middle cerebral artery and anterior cerebral artery because of thrombus (double broken arrow). The single broken arrow shows a large filling defect in the right cervical ICA extending superiorly to the carotid terminus.

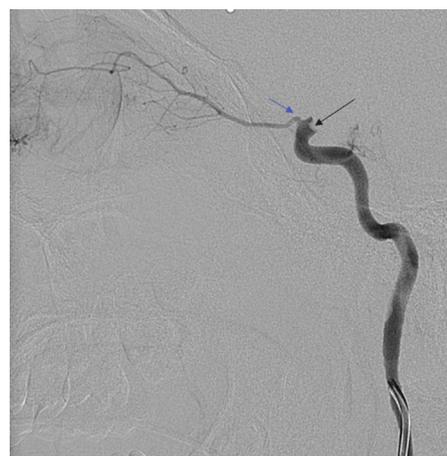


Figure 5. Cerebral angiogram (lateral view) showing complete occlusion of the supraclinoid internal carotid artery (black arrow) beyond the origin of the ophthalmic artery (blue arrow).

[Ann Emerg Med. 2019;74:741.]

A 12-year-old previously healthy boy presented to the emergency department 5 hours after onset of headache and altered mental status. On physical examination, he had a Glasgow Coma Scale score of 13, left-sided facial droop, hemiplegia affecting the left upper and lower extremity, and severe dysarthria. His vital signs were within normal limits and blood glucose level was 109 mg/dL.

For the diagnosis and teaching points, see page 806.

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DIAGNOSIS:

Acute ischemic right middle cerebral artery stroke. Computed tomography (CT) angiography (Figures 1 and 2) and magnetic resonance imaging (MRI) (Figure 3) demonstrated a complete acute ischemic right middle cerebral artery infarct as a result of complete occlusive thrombosis of the right internal carotid artery (Figures 4 and 5). Because the patient was outside the treatment window for tissue plasminogen activator, a cerebral angiogram with mechanical thrombectomy of the right internal carotid artery and middle cerebral artery occlusion was performed; no dissection was identified. All evaluation results, including testing involving a hypercoagulability panel, were negative. No definite cause was ascertained. He was discharged after 2 months of inpatient rehabilitation, with some improvement in left extremity function against gravity and improved speech.

Stroke in children is underrecognized and undertreated.¹ Common causes include sickle cell disease, cardiac and rheumatologic conditions, thrombophilia, arteriopathies, malignancy, and inborn errors of metabolism.^{2,3} Signs of ischemic stroke are facial or limb weakness, dysarthria, and visual defects. MRI with diffusion-weighted imaging is the criterion standard for diagnosis.^{1,4} Management includes administering tissue plasminogen activator if within the treatment window, mechanical revascularization, antithrombotic therapies such as heparin and aspirin, and neuroprotective measures such as seizure control, normotension, normoglycemia, normovolemia, and normothermia.^{2,5}

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