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Figure 1. Magnetic resonance angiography demonstrating absence of blood flow within the right internal carotid artery.

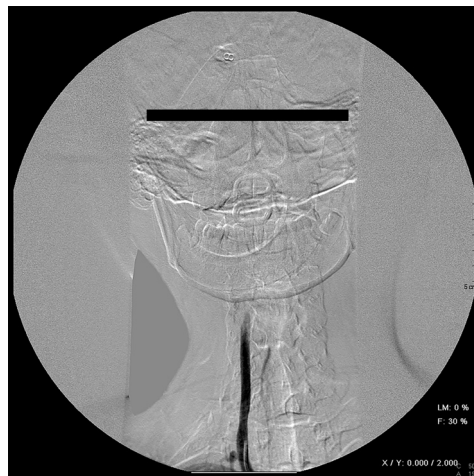


Figure 3. Angiography revealing thrombosis of the right vertebral artery.

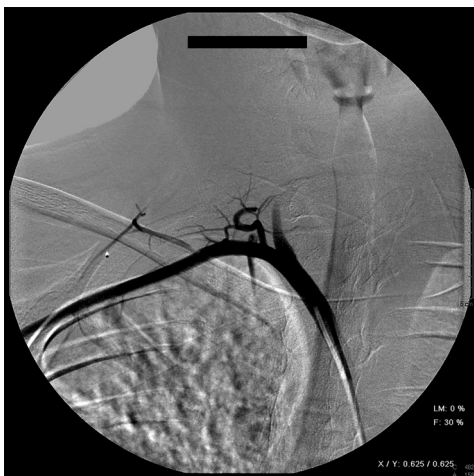


Figure 2. Angiography with contrast injection from the brachiocephalic trunk, demonstrating absence of blood flow within the internal carotid artery.

[Ann Emerg Med. 2015;65:122.]

A 16-year-old previously healthy male adolescent was admitted to the ICU with sudden left hemiparesis. Head computed tomography result without contrast was normal, whereas magnetic resonance imaging showed an extensive right middle cerebral artery infarction. Magnetic resonance angiography found absence of flow within the right internal carotid artery from its origination to its distal portion, leading to suspicion of an extensive thrombosis of the right internal carotid artery (Figure 1). Further angiography performed within 48 hours of stroke symptoms revealed congenital absence of the internal carotid artery (Figure 2) and thrombosis of the right vertebral artery (Figure 3).

For the diagnosis and teaching points, see page 131.

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- patient experience and comfort
 - patient complaints and compliments or service recovery
 - patient protection and advocacy services
 - discharge planning or readmission reduction
 - community health and support services referrals
 - education, including disease-specific instruction
- ACEP recognizes that there are a variety of training programs, commensurate with responsibilities, to prepare individuals for

patient advocacy services in the ED. At a minimum, patient advocates in the ED should receive training in customer service and be able to effectively communicate the ED mission and flow process, in addition to training for specific job functions.

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DIAGNOSIS:

Ischemic stroke as a result of vertebral artery thrombosis. Twenty percent of ischemic events in the brain involve posterior circulation structures.¹ Vertebral artery thrombosis causing ischemia to structures supplied by these arteries may result in a range of symptoms, with many cases of vertebrobasilar disease remaining undiagnosed or incorrectly diagnosed. In this case, the patient also possessed a congenital absence of the internal carotid artery, a rare congenital anomaly occurring in less than 0.01% of the population.² Collateral blood flow may allow these patients to remain asymptomatic, although they may present with transient ischemic attacks. Recognition of this anomaly has important implications during planned carotid or trans-sphenoidal surgery, in thromboembolic disease, and in the surveillance and detection of associated cerebral aneurysms.^{3,4} The previous absence of symptoms in our patient indicates that the brain flow was maintained through collateral circulation from the right vertebral artery, and the thrombosis produced the sudden hemiparesis of the patient.

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