



CASE REPORT

Acute Middle Cerebral Artery Thrombosis

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Introduction

A CT of the head is commonly the first neuro-imaging test of acute stroke in the emergency department.¹ Usually, it may take up to 24 hours for signs of acute ischemia to be notable on CT.²⁻³ “Dense MCA” or acute middle cerebral artery thrombosis is a valuable finding on noncontrast CT scan of the head when correlated with the appropriate clinical symptoms of acute stroke. A hyperdense artery sign of the middle cerebral artery (MCA) in the setting of acute cerebral infarction strongly indicates thrombo-embolic MCA occlusion.⁴⁻⁵

Case Report

A 59-year old women presented to the emergency department after falling in the bathroom due to left-sided weakness. Her family stated that she was asymptomatic earlier. On examination, she had right gaze preference, apraxia of eyelids opening, left cranial nerve palsy, flaccid left hemiplegia, and a left extensor plantar response.

A noncontrast CT scan of her head revealed a hyperdense tubular region in the proximal right middle cerebral artery (figure 1) consistent with acute thrombosis. Effacement of the right cerebral sulci also was present. Taken together, these findings were consistent with acute middle cerebral artery infarction.¹

Discussion

Early goal therapy in patients with strokes is essential in identifying candidates for emergent therapy such as thrombolysis.² CT scan often is favored as a neuro-imaging diagnostic tool because of its widespread availability and rapid acquisition time.^{3,6-7} CT is used widely in acute stroke to rule out any intracranial hemorrhage. However, changes due to brain tissue infarction usually take up to 24 hours to be seen on CT, thus it has limited power to detect any ischemic lesion early when emergent therapy could be beneficial.^{3,8-9} Therefore, any early CT indicators of acute cerebral thrombosis have important value.^{4-5,10-11}

The finding of increased density of the MCA main stem, or the hyperdense MCA sign, is highly suggestive of acute thrombosis when correlated with appropriate clinical findings.^{4-5,11} This sign has been correlated angiographically with embolic or atherothrombotic MCA occlusion.^{5,10-12} The hyperdensity is most likely due to either calcific or hemorrhagic components of the acute plaque. This sign is non-specific when it is present in isolation and not correlated with the clinical setting.^{4-5,10} False-positive hyperdense MCAs have been noted in asymptomatic patients with high hematocrit or calcific atherosclerotic disease.^{4,11-13}

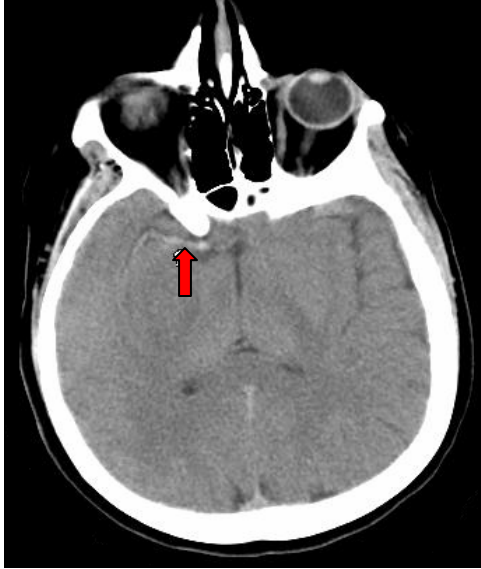


Figure. 1: Noncontrast brain CT scan showing a tubular hyperdense structure consistent with acute middle cerebral thrombosis (arrow).

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