

Hyperdense Middle Cerebral Artery Sign After Trauma

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A 56-year-old man presented to the emergency department after a high-speed, single-vehicle motor vehicle accident. Physical examination revealed no evidence of head trauma but was notable for a Glasgow Coma Scale score of 6, with the patient exhibiting a withdrawal response to pain on his left side. Computed tomography findings included a hyperdense middle cerebral artery sign (HMCAS) on the left side (image A). A magnetic resonance (MR) angiogram showed occlusion of the left middle cerebral artery, and an MR image revealed an infarct (image B). Although the patient’s mental status improved, he was discharged to inpatient rehabilitation 9 days later because of hemiplegia on his left side.

The present case highlights the interrelationship of vascular structure and central nervous system function in a complex presentation. As seen in the present case, HMCAS is associated with large infarcts and functional impairment.¹ Early identification of HMCAS is particularly important in stroke patients, as data suggest improved outcomes among patients treated with intra-arterial as opposed to intravenous thrombolysis.^{2,3} Physician awareness of HMCAS is essential for optimal detection, prognostication, and management. (doi:10.7556/jaoa.2014.175)

References

1. Paciaroni M, Agnelli G, Floridi P, et al. Hyperdense middle cerebral and/or internal carotid arteries in acute ischemic stroke: rate, predictive factors, and influence on clinical outcome [published online August 23, 2011]. *Cerebrovasc Dis*. 2011;32(3):239-245. doi:10.1159/000329375.
2. Mattle HP, Arnold M, Georgiadis D, et al. Comparison of intraarterial and intravenous thrombolysis for ischemic stroke with hyperdense middle cerebral artery sign [published online December 20, 2007]. *Stroke*. 2008;39(2):379-383.
3. Agarwal P, Kumar S, Hariharan S, et al. Hyperdense middle cerebral artery sign: can it be used to select intra-arterial versus intravenous thrombolysis in acute ischemic stroke [published online December 29, 2003]? *Cerebrovasc Dis*. 2004;17(2-3):182-190.

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