

Images in Clinical Medicine: Hyperdense MCA Sign

N Sethi, J Torgovnick, A Mohan, A Hirschfeld, B Zablow, I Omeis

Citation

N Sethi, J Torgovnick, A Mohan, A Hirschfeld, B Zablow, I Omeis. *Images in Clinical Medicine: Hyperdense MCA Sign*. The Internet Journal of Radiology. 2005 Volume 5 Number 1.

Abstract

The 'hyperdense MCA sign' (HMCA) refers to the appearance, on computed tomography, of increased attenuation of the proximal portion of the middle cerebral artery (MCA) and is often associated with thrombosis of the M1 MCA segment. It is one of the early signs of ischemic stroke.

CASE REPORT

A 64-year old (R) handed female, with history of essential hypertension and type 2 diabetes mellitus, presented with 9-hour history of abrupt onset of right-sided weakness and difficulty speaking. Emergent head CT scan demonstrated a thrombus occluding the main stem of the left middle cerebral artery (hyperdense MCA sign) (Fig 1). Thrombolytics being contraindicated given her late presentation, successful endovascular extraction of the thrombus was achieved with a MERCI device (Mechanical Embolus Removal in Cerebral Ischemia). Follow up head CT scan showed resolution of the dense MCA sign and hemorrhagic conversion of the ischemic stroke (Fig 2 & 3); despite aggressive management, patient still had significant right hemiparesis and expressive aphasia upon transfer to rehab.

Figure 1

Figure 1: CT scan of the head showing a thrombus occluding the stem of the left MCA (hyperdense MCA sign)



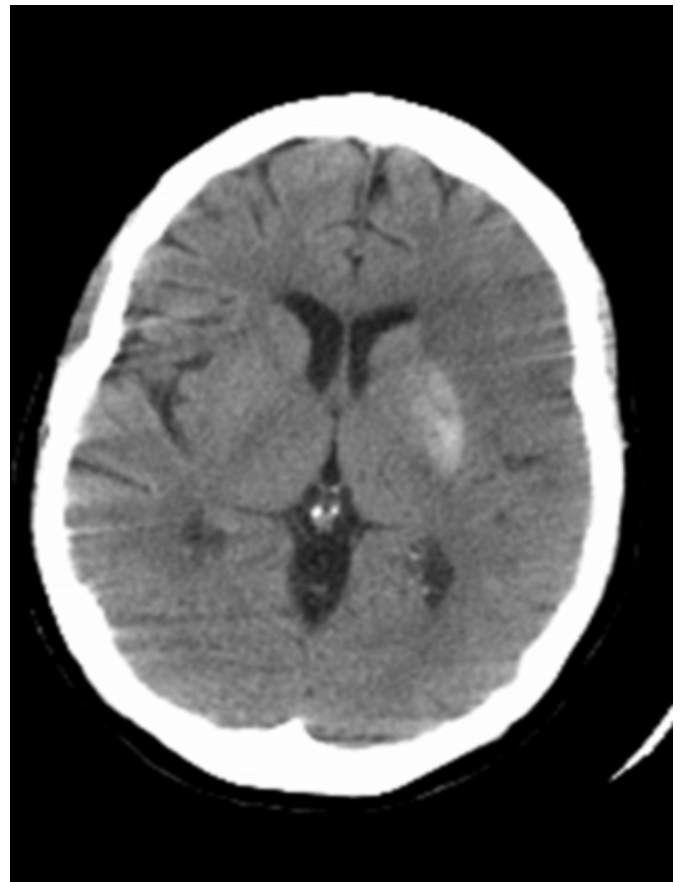
Figure 2

Figure 2: CT scan head post mechanical clot extraction showing resolution of the hyperdense MCA sign



Figure 3

Figure 3: CT scan of the head showing hemorrhagic conversion of the ischemic infarct after mechanical clot removal



DISCUSSION

The HMCA sign also called as MCA “dot” sign is one of the early signs of ischemic stroke along with loss of the insular ribbon, attenuation of the lentiform nucleus and hemispherical sulcus effacement¹. It may be the only diagnostic feature on computed tomography early after ischemic stroke. Various studies have been conducted to determine its incidence, diagnostic value, and reliability². False positives are recognized, and correct recognition of this sign has therefore, assumed greater importance especially with the advent of thrombolytic therapy for stroke³.

ADDRESS FOR CORRESPONDENCE

Nitin Sethi, M.D. Chief Resident, Neurology Saint Vincent's Hospital and Medical Centers 153 West, 11th Street New York, NY 10011 Email: sethinitinmd@hotmail.com

References

1. Koga M, Saku Y, Toyoda K, Takaba H, Ibayashi S, Iida M . Reappraisal of early CT signs to predict the arterial

occlusion site in acute embolic stroke. *Journal of Neurology Neurosurgery and Psychiatry* 2003; 74:649-653.

2. Barber PA, Demchuk AM, Hudon ME, Pexman JH, Hill MD, Buchan AM. Hyperdense sylvian fissure MCA "dot"

sign: A CT marker of acute ischemia. *Stroke*. 2001 Jan; 32(1):84-8.

3. Maramattom BV, Wijdicks EF. A misleading hyperdense MCA sign. *Neurology* 2004 Aug 10; 63(3):586.

Author Information

N. K. Sethi, M.D.

Department of Neurology, Saint Vincent's Hospital and Medical Centers

J. Torgovnick, M.D.

Department of Neurology, Saint Vincent's Hospital and Medical Centers

A. Mohan, M.D.

Department of Neurosurgery, Saint Vincent's Hospital and Medical Centers

A. Hirschfeld, M.D.

Department of Neurosurgery, Saint Vincent's Hospital and Medical Centers

B. Zablow, M.D.

Department of Neurosurgery, Saint Vincent's Hospital and Medical Centers

I. Omeis, M.D.

Department of Neurosurgery, Saint Vincent's Hospital and Medical Centers