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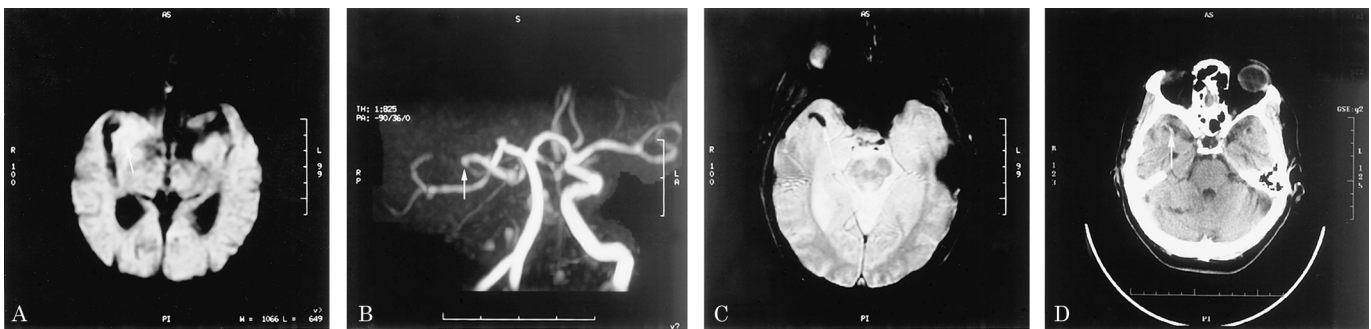


Figure. (A) Hyperintense region is seen in the right middle cerebral artery (MCA) territory on diffusion-weighted imaging compatible with an acute infarct (arrow). (B) MR angiography shows occlusion of the right internal carotid artery with partial cross-filling of the right MCA and signal loss at the right M1 segment (arrow). (C) GRE reveals the susceptibility artifact of acute thromboembolism in the right MCA (arrow). (D) Nonenhanced CT depicts a right hyperdense MCA sign (arrow).

The hypointense MCA sign

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A 74-year-old woman with history of hypertension and atrial fibrillation arrived at the hospital 20 minutes after a sudden onset of left hemiparesis. On examination, she was alert and oriented, had a right gaze preference, left homonymous hemianopia, left hemineglect, and dense left hemiparesis.

An emergent MRI and CT of the brain were obtained. An acute ischemic stroke was noted in the right middle cerebral artery (MCA) territory (figure, A). Intracranial MR angiography revealed a complete occlusion of the right internal carotid artery with partial cross-filling of the right MCA terminating at the right M1 (see figure, B) Gradient echo imaging (GRE) revealed a hypointense ovoid signal in the distal right sylvian fissure (see figure, C). A nonenhanced CT scan of the brain showed a right hyperdense MCA sign in the same territory (see figure, D).

The hyperdense MCA sign on CT is a well-characterized radiologic finding that may indicate acute vessel occlusion. Hypointense signals on GRE that are within vascular cisterns may also indicate acute thrombosis and should not be confused with acute hemorrhage, which may have similar characteristics.¹ Defining features of the hypointense MCA sign on GRE include unilateral susceptibility changes that exceed the vessel diameter of the contralateral and susceptibility changes confined to vascular cisterns. Further evidence to support this conclusion is a corresponding vessel occlusion on MR angiography, homolateral perfusion deficit, and hyperdense MCA sign on CT.² Distinguishing between the hypointense MCA sign indicating intraluminal occlusion and a hypointense region of intraparenchymal hemorrhage has important therapeutic implications in the acute stroke patient.

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