Figure. Cerebral blood volume is decreased in the left basal ganglia (white arrow) suggestive of infarcted tissue (A). There is a larger area of decreased cerebral blood flow (CBF) (white arrow) and increased mean transit time (MTT) (dotted arrow) suggestive of penumbra (B, C). The contralateral right cerebellar hemisphere shows an area of decreased CBF (broad arrow) and increased MTT (curved arrow) reflecting crossed cerebellar diaschisis (B, C).

Crossed cerebellar diaschisis in stroke

Ashok Srinivasan, MD, William Miller, MD, Peter Stys, MD, and Mayank Goyal, MD, Ottawa, Canada

A 77-year-old woman presented within 90 minutes of onset of right hemiplegia and aphasia. The plain CT head scan was normal. CT angiogram revealed left internal carotid artery occlusion with thrombus in M1 segment of the left middle cerebral artery (MCA). CT perfusion revealed decreased cerebral blood flow, increased mean transit time, and normal cerebral blood volume in the right cerebellar hemisphere (contralateral to the penumbra in

the left MCA territory) representing crossed cerebellar diaschisis (CCD) (figure).

CCD may be due to interruption of afferent corticopontocerebellar pathways and results in decreased blood flow and metabolism in the cerebellar hemisphere contralateral to a supratentorial lesion.¹ The temporal changes and clinical significance of CCD in stroke are unclear despite a number of reports. Some authors consider acute stage CCD to be a significant predictor of stroke outcome, its absence being associated with favorable results.²

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Neurology 2004;62;2130

DOI 10.1212/01.WNL.0000123088.81455.F2

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