The centrum ovale, which contains the core of the hemispheric white matter, receives its blood supply from the superficial (pial) middle cerebral artery (MCA) system through perforating medullary branches (MBs), which course toward the lateral ventricles. Though vascular changes in the centrum ovale have been emphasized in dementia, stroke from acute infarction in the centrum ovale is less well documented. We studied 36 patients with infarct limited to MB territory, without involvement of the lenticulostriate territory. Ten patients had a large infarct, associated with severe disease of the ipsilateral carotid artery and with neurologic-neuropsychological impairment not different from that of large MCA infarcts. In 26 patients, the infarct was small and round or ovoid, and was associated with hypertension or diabetes and with “lacunar syndromes,” usually of progressive onset. These findings show that two forms of centrum ovale infarcts can be delineated according to infarct size and shape, clinical picture, risk factors, and associated vascular disease. We propose to classify subcortical infarcts in the carotid system into four main territory groups: (1) deep perforator territory (from the MCA trunk, carotid siphon, anterior choroidal artery, anterior cerebral artery trunk, Heubner's artery, and posterior communicating artery); (2) perforating MB territory (from the superficial MCA branches); (3) junctional (territory between 1 and 2); and (4) combined territories [1)].

1)
Bogousslavsky J, Regli F. Centrum ovale infarcts: subcortical infarction in the superficial territory of the middle cerebral artery. Neurology. 1992 Oct;42(10):1992-8. PubMed PMID: 1340771.