MR Findings in Call-Fleming Syndrome

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A 29-year-old woman with a history of migraine developed sudden-onset “thunderclap” headache with right homonymous hemianopsia and right hemiparesis. She had not taken serotonergic or anti-contraceptive drugs. On admission, diffusion-weighted MRI revealed a small high-intensity area in the left occipital lobe, and MRA showed poor visualization of the distal part of the left posterior cerebral artery (Picture A). Neurological symptoms disappeared within a day, but dysarthria and disorientation with headache appeared at day 4 after admission. Diffusion-weighted and FLAIR images at day 12 revealed a high-intensity area in the left medial thalamus, although the high-intensity area in the left occipital lobe had disappeared (Picture B). MRA showed segmental narrowing in the proximal part of the left PCA.

Call-Fleming syndrome is characterized by “thunderclap” headache with focal neurological symptoms, and has been associated with pregnancy, migraine, and the use of cocaine, amphetamine and anti-migraine agents. We emphasize that MRA is useful for observing the reversible vasoconstriction.

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Picture B. MRI and MRA in a patient with Call-Fleming syndrome at the 12th day of admission. Diffusion-weighted and FLAIR images revealed a high-intensity area in the left medial thalamus, although the high-intensity area in the left occipital lobe seen on day 1 had disappeared. MRA showed transient segmental narrowing in the proximal part of the left posterior cerebral artery, but the distal part of the left posterior cerebral artery was well visualized.

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