Vessel wall MRI of an inflamed aneurysm with atherosclerosis in a patient with ischemic stroke

Figure High-resolution vessel wall MRI of a symptomatic, inflamed intracranial aneurysm with adjacent atherosclerosis

(A) Diffusion-weighted MRI with left parietal infarct. (B) Left middle cerebral artery bifurcation aneurysm. (C) T2 flow void of the aneurysm. (E) T1 precontrast aneurysm wall, which enhances after contrast administration (G). (D) T2 with hyperintense fibrous cap of an adjacent atherosclerotic plaque. (A) T1 precontrast with atherosclerotic fibrous cap, which also enhances after contrast (H).

A 69-year-old woman presented with right leg weakness and ataxia. CT angiogram revealed a 6-mm left middle cerebral artery (MCA) aneurysm. Intracranial vessel wall MRI (IVWM) (figure) showed ischemic strokes in the left MCA region, inflammatory changes in the aneurysmal wall, and adjacent atherosclerosis. IVWM is a high-resolution black-blood MRI technique that allows visualization of the arterial vessel wall. Postcontrast enhancement of unruptured aneurysms is associated with instability,¹ and atherosclerotic plaque enhancement is associated with ischemic stroke.² This report of a patient with ischemic stroke shows the association of a symptomatic inflamed aneurysm with atherosclerotic plaque on IVWM.

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