MRI in amyloid β -related brain angiitis

Figure Edema and microbleeds as hallmark of amyloid β angiitis

Fluid-attenuated inversion recovery (A), T2-weighted gradient echo (B), and high-resolution fast spin echo (C) images show bitemporal edema (A, B: arrows) and cortical microbleeds (punctuate areas marked by arrows in B and C). Microbleeds are present in edematous and nonedematous brain regions (D). Histopathology reveals inflammation and hyaline thickening of leptomenigeal and cortical vessel walls in hematoxylin-eosin stain (E), Congo red-positive vascular amyloid deposition with inflammation (E, inset), A β deposits (dark brown) in vessel walls, and diffuse cortical plaques (F, A β immunohistochemistry).

A 52-year-old man presented with complex partial seizures. Fluid-attenuated inversion recovery MRI showed multifocal subcortical and cortical edema, predominantly in the left temporal lobe (figure, A). T2-weighted and gradient echo images showed multiple cortical microbleeds (figure, B–D). Right frontal brain biopsy revealed amyloid β -related angiitis showing leptomenigeal and cortical blood vessels with vascular β -amyloid deposition and perivascular/intramural inflammatory infiltrates with lymphocytes and often epithelioid appearing, sometimes multinucleated macrophages (figure, E).^{1,2} There were also diffuse cortical β -amyloid plaques without deposition of abnormal τ -protein (figure, F). That cortical microbleeds are present not only in edematous brain, but also in unaffected regions, likely reflects the pathophysiologic cascade of amyloid deposition followed by inflammation.

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1. Scolding NJ, Joseph F, Kirby PA, et al. A β -related angiitis: primary angiitis of the central nervous system associated with cerebral amyloid angiopathy. *Brain* 2005;128:500–515.
2. Marotti JD, Savitz SI, Kim WK, Williams K, Caplan LR, Joseph JT. Cerebral amyloid angiitis progressing to generalized angiitis and leukoencephalitis. *Neuropathol Appl Neurobiol* 2007;33:475–479.

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