Dominant perivenular enhancement of tumefactive demyelinating lesions in multiple sclerosis

Figure MRI

Postcontrast T1 (top) and fluid-attenuated inversion recovery (FLAIR) images (bottom) demonstrate temporal evolution (left to right) of the tumefactive lesions. While large confluent FLAIR lesions (D–F) are seen occasionally, dominant perivascular enhancements (A–C) indicating severe acute inflammation are rare in multiple sclerosis, which may represent aggressive disease course and require immediate attention.

A 51-year-old woman presented with aphasia and bifrontal MRI lesions with punctuate and vague linear enhancement (figure). She improved spontaneously but 4 months later deteriorated due to the large mass and required cranial decompression. Innumerable, perivenular enhancements perpendicular to the lateral ventricles were seen within extensive bihemispheric white matter lesions. Multiple sclerosis (MS) was diagnosed based on typical inflammatory demyelination at biopsy, CSF oligoclonal bands, and a previous CNS event. Treatment with mitoxantrone and Copaxone followed. MRI lesions improved rapidly. She remains stable with minimal deficit (Expanded Disability Status Scale 1.0) 2 years later. Dominant perivenular enhancements are atypical for MS^{1,2} but deserve recognition, although they may not prevent biopsy.

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1. Cha S, Pierce S, Knopp EA, et al. Dynamic contrast-enhanced T2*-weighted MR imaging of tumefactive demyelinating lesions. *AJNR Am J Neuroradiol* 2001;22:1109–1116.
2. Given CA II, Stevens BS, Lee C. The MRI appearance of tumefactive demyelinating lesions. *AJR Am J Roentgenol* 2004;182:195–199.

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