Dominant perivenular enhancement of tumefactive demyelinating lesions in multiple sclerosis

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 MS1,2 but deserve recognition, although they may not prevent biopsy.

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