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MRI mimics of multiple sclerosis.

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Abstract

Diagnosis of multiple sclerosis (MS) is based on the demonstration of dissemination of lesions in space (DIS) and in time (DIT), as well as on the exclusion of an alternative neurologic disorder. As a paraclinical tool brain and/or spinal cord magnetic resonance imaging (MRI), showing typical lesion morphology, characteristic distribution of lesions, or involvement or specific anatomic structures, can support the diagnosis of MS. But from an imaging perspective a considerable amount of inherited and acquired disorders may manifest with radiologic evidence of DIT, DIS, or both. Hypoxic-ischemic vasculopathy, specially small-vessel disease, inflammatory disorders, vasculitis, and non-MS idiopathic inflammatory disorders, as well as some toxic, metabolic, and infectious disorders, may present mimicking MS on MR examinations and should be included in the differential diagnosis of MS-like lesions. Careful evaluation of associated findings on MRI, the so-called MRI red flags, such as the presence of infarcts, microbleeds, meningeal enhancement, and calcifications among others, are very helpful in suggesting a diagnosis other than MS. Complement MRI findings to patient's history, demographics, and serologic findings are crucial to achieve the correct diagnosis. We will review the most frequent radiologic appearance and differential features from the most frequent MS mimickers.

KEYWORDS: MRI; MS mimics; differential diagnosis; magnetic resonance imaging; red flags

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