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NUCLEAR MAGNETIC RESONANCE IMAGING OF THE BRAIN IN MULTIPLE SCLEROSIS

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Abstract

Ten patients with multiple sclerosis (MS) were scanned by means of cranial X-ray computed tomography (CT) with and without intravenous contrast enhancement, and by nuclear magnetic resonance (NMR) using an inversion-recovery sequence. Altogether 19 lesions varying in size between about 7 mm x 5 mm and 13 mm $\tilde{\text{A}}$ — 8 mm were demonstrated by CT. They were all situated in the periventricular region. Two patients also showed moderate ventricular enlargement. In addition to these abnormalities 112 further lesions were demonstrated on the NMR scans. These lesions varied in size from 4 mm x 3 mm to 12 mm x 7 mm and were particularly well seen in the periventricular region and brainstem. Care is required in the assessment of NMR scans to exclude artefacts, background noise, and mottle as well as normally situated grey matter and partial volume effects from cerebral sulci. NMR nevertheless demonstrates abnormalities in MS on a scale not previously seen except at necropsy.



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