Imagiologically aggressive presentation of paediatric multiple sclerosis

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DESCRIPTION

Multiple sclerosis (MS) is an immune-mediated demyelinating disorder of the central nervous system (CNS), which despite mainly afflicting young adults, has been diagnosed in the paediatric population, with 2%–5% of all patients showing symptoms onset before 16 years of age.^{1–3} MRI is fundamental in the diagnosis of this disease.

A 14-year-old girl was brought to the emergency room because of pain in both thighs and diminished sensitivity in the right leg and foot, with 3 days of evolution. Neurological examination showed hypoactive patellar reflexes. She denied any other neurological symptoms. After admission, she also had lumbar pain irradiating to the right lower limb. MRI showed countless focal white matter lesions in various locations, several of them with gadolinium enhancement (figures 1–2).

Given their distribution, MS and cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy were considered as possibilities. However, her improvement with corticosteroids and positive oligoclonal bands in cerebrospinal fluid helped to confirm the diagnosis of MS. Also, in the MRI performed, MS criteria for dissemination in space and time (according to the revised 2017 McDonald criteria for MS) were met.² She started treatment with intravenous natalizumab (being the serology for John Cunningham—virus negative), so far with an excellent tolerability (she has already made 13 infusions and no new relapses were identified). In the last clinical evaluation, at month 12 of treatment, she scored 1.0

Figure 1 Axial (A, B) and coronal (C, D) Fluid-Attenuated Inversion Recovery (FLAIR) and axial T2 (E) images showing countless focal and confluent white matter lesions (juxtacortical, periventricular, subcortical, callosomarginal, capsular, pontine and cerebellar). Axial T1 image (F) after administration of gadolinium showing several active lesions.

Figure 2 Axial (A) and sagittal (B) T2 image of the cervical spine showing spinal cord lesions. Sagittal (C) T2 image of the dorsolumbar spinal cord showing no lesions in this segment.

Learning points

- ▶ Multiple sclerosis is an immune-mediated disorder of the central nervous system, in which MRI is a key diagnostic tool.
- ▶ What we see in image studies does not always match with clinical manifestations and vice versa.
- ▶ Although rare, paediatric cases can manifest with extensive and confluent white matter lesions.

in the Expanded Disability Status Scale, due to the presence of brisk reflexes in the lower limbs. Additionally, a new MRI was obtained at this time point, revealing no new lesions.

Despite the exuberant lesions seen on MRI, this patient showed relatively few symptoms, and made a good recovery after corticosteroid treatment. This case highlights the concept of clinical–radiological dissociation, reminding us that imaging findings do not always mirror what we see in the clinical spectrum. Furthermore, it is atypical for paediatric MS patients to show confluent white matter lesions on imaging at the onset of the disease.

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