

## ATYPICAL MRI FINDINGS OF THE BRAIN IN A CHILD WITH LYME NEUROBORRELIOSIS

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A nine year-old boy presented with progressive weakness, ataxia, headache, nistagmus, dysarthria and difficulty swallowing for 3 days. The clinical situation deteriorated with recurrent seizures and a decreased level of consciousness only to pain stimuli. The cerebrospinal fluid revealed lymphocytic pleocytosis-58 WBC/mm<sup>3</sup> (normal value: <5 WBC/mm<sup>3</sup>). The magnetic resonance imaging (MRI) of the brain showed multiple T2W hyperintense tumefactive white matter lesions in both cerebral hemispheres, with a peripheral rim of restricted diffusion, not enhanced after contrast administration. (Fig. 1) The radiologist suggested differential diagnosis between Lyme neuroborreliosis (LNB), Acute disseminated encephalomyelitis (ADEM) and Multiple Sclerosis (MS). In neuroborreliosis, MRI of the brain typically shows T2W hyperintense small periventricu-

lar white matter lesions resulting from demyelination, which can mimic MS. Multiple tumefactive demyelinating lesions, as in the present case, are unusual, and appear more like ADEM than MS (but this does not exclude it) as does the clinical course with encephalopathy. The MRI images persisted long after clinical improvement, different from ADEM, were we expect related lesions to eventually disappear. On the other hand, encephalopathy is not a typical feature of MS, while is typical in ADEM and infections. We did not find similar MRI findings of neuroborreliosis in the literature, but with the positive result of total antibodies for *Borrelia burgdorferi* intrathecally by ELISA, we concluded it was a case of LNB (three criteria for definite LNB fulfilled). The clinical situation improved with Ceftriaxon treatment (28 days). Currently the child does not have any neurological sequellae. We would like to underline that LNB should be included in the

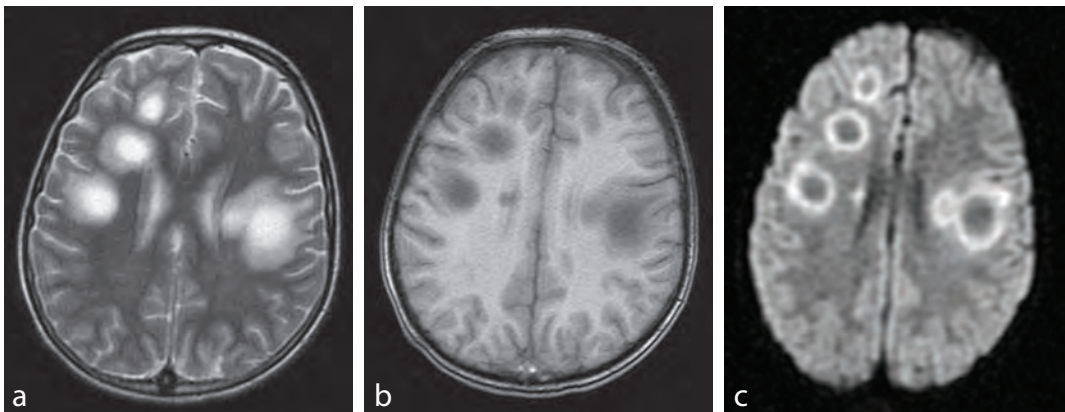


Fig. 1 MRI brain images.

differential diagnosis of ADEM and MS, because treatment is very different.

**Key words:** Lyme neuroborreliosis ■ Multiple sclerosis  
■ ADEM ■ MRI.

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