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SCIENTIFIC LETTER

MRI-Negative MOG Antibody-Associated Disease in Meningitis

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To the Editor: A 7-y-old boy presented with a 3-d history of fever, headache, lethargy, vomiting, and a generalized tonic–clonic seizure on day 3 of illness, without prodromal systemic symptoms. He had neck stiffness on examination, and demonstrated irritability and excessive sleepiness with no cranial nerve or motor deficits. Blood showed neutrophilic leukocytosis (18000 WBCs/mm^3, 55% neutrophils) and elevated C-reactive protein (CRP) (45 mg/dL). CSF showed 35 cells with a predominance of polymorphs with normal glucose (61 mg/dL) and protein (25 mg/dL). CSF gram stain, culture, and multiplex PCR (bacterial DNA, HSV-1 and 2, VZV, HHV-6, and 7 DNA, enterovirus RNA) were negative. The contrast-enhanced MRI of the brain was normal. The serum anti-MOG antibody was strongly positive (cell-based assay, indirect immunofluorescence). He improved with a course of IVIg (2 g/kg) and oral prednisolone (2 mg/kg followed by a gradual taper), and was discharged in 2 wk.

The spectrum of MOG antibody–associated disease (MOGAD) is rapidly expanding. Initially described as a major cause of acute disseminated encephalomyelitis (ADEM) with predominant white matter involvement, this antibody has been associated with isolated cortical encephalitis, and more recently, MRI-negative acute neurological syndromes including myelitis and encephalitis [1]. MRI-negative aseptic meningitis presentation of MOGAD is a recently recognized syndrome, adding to the widening clinical spectrum of this disorder [2]. Interestingly, in this entity, serum inflammatory markers are raised, with CSF often showing a neutrophilic leukocytosis, frequently raising suspicion of bacterial meningitis [3]. This prompted us to use IVIg initially instead of pulse steroids until culture results and anti-MOG titers were known. It has been hypothesized that the aseptic meningitis phase reflects a possible virus-induced disruption of the blood–brain barrier and subsequent trigger of anti-MOG antibody production, which may evolve into a demyelinating syndrome with changes detectable on MRI if left untreated [4].

Declarations

Informed Consent Written informed consent was obtained from the parents of the patient.

Conflict of Interest None.

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