

Diffuse hyperintense brainstem lesions in neuroborreliosis

Figure 1 Brain MRI at admission: Axial fluid-attenuated inversion recovery images show extensive diffuse hyperintense lesions with mild swelling in the diencephalon and mesencephalon (A, B) and focal cerebellar lesions (A)

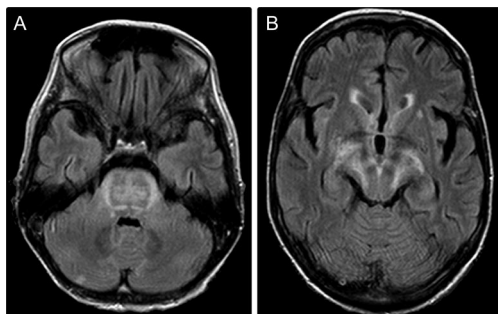
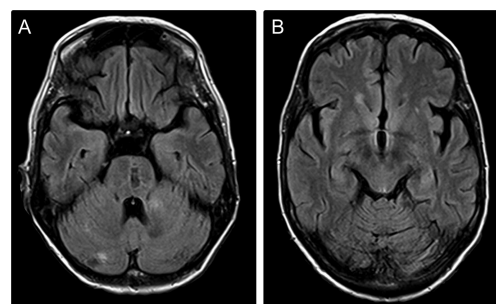


Figure 2 Brain MRI at 6 months' follow-up: Almost complete resolution of abnormalities after 6 months (A, B), but certain low-density areas are noticeable (A)



A 64-year-old woman presented with a 2-month history of neck pain, wasting, and fatigue followed by gait disturbance, dysarthria, and dysmetria. MRI showed profound hyperintensities in diencephalon, mesencephalon, and cerebellum correlating with symptoms (figure 1). Lymphoma, vasculitis, multiple sclerosis, and tuberculosis were excluded. Neuroborreliosis was diagnosed based on intrathecal immunoglobulin G synthesis (specific antibody index¹ by indirect immunofluorescence 6.9, normal <2) along with abnormal CSF (113 cells/mm³, protein 2.25 g/L, positive oligoclonal bands).

The specific antibody index is calculated as follows:

$$\frac{\text{titer of IgG in CSF}}{\text{titer of IgG in serum}} : \frac{\text{total concentration of IgG in CSF}}{\text{total concentration of IgG in serum}} = \frac{1:1024}{1:2048} : \frac{636 \text{ mg/L}}{8800 \text{ mg/L}}$$

Intravenous ceftriaxone led to nearly complete resolution of signs, symptoms, and MRI abnormalities (figure 2), demonstrating an exceptional case in contrast to usually unspecific MRI findings in neuroborreliosis.²

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