Acute demyelination with leukoencephalopathy and cerebellar involvement in vitamin B12 deficiency

Desmielinização aguda com leucoencefalopatia e envolvimento cerebelar na deficiência de vitamina B12

Felipe Torres Pacheco1, Thiago Luiz Pereira Donoso Scoppetta1, Monica Sznirer2, Roberto Antônio Paes2, Antônio Jose da Rocha1

A 49-year-old woman presented with progressive ascending quadriparesis associated with paresthesias and recent wide-based gait. Cognitive impairment associated with reduced vibration and proprioception sense was observed. Brain MRI documented the presence of extensive white matter demyelination (Figure 1). Megaloblastic anemia, low B12 level and chronic gastritis were confirmed (Figure 2).

Vitamin B12 acts as a coenzyme in the methylmalonyl-CoA mutase reaction, essential for myelin biosynthesis1. This vitamin deficiency may result in a variable neurologic presentation1,2, including spinal cord, brain and cerebellar involvement. Our report supports the importance of performing diffusion and intravenous contrast administration to evaluate MRI evidence of acute demyelination in this setting.

Figure 1. (A) FLAIR images demonstrated signal hyperintensity in the supra- and infratentorial white matter, (B) which was restricted to the corticospinal tracts in the subcortical pre-central gyri. (C) Restricted diffusion was only observed in the cerebellum, (D) consistent with the patient’s recent cerebellar symptoms and associated with gadolinium enhancement.

Figure 2. (A and B) Endoscopic biopsy illustrating the presence of chronic gastritis with intestinal metaplasia.

References


1Santa Casa de São Paulo, Faculdade de Ciências Médicas, Divisão de Neuroradiologia, São Paulo SP, Brazil; 2Santa Casa de São Paulo, Faculdade de Ciências Médicas, Divisão de Patologia, São Paulo SP, Brazil.

Correspondence: Felipe Torres Pacheco; Rua Doutor Cesário Motta Junior, 112; 01221-020 São Paulo SP, Brasil; E-mail: felipetorrespacheco@hotmail.com

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