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Case report

Intravascular lymphoma mimicking multiple sclerosis

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ABSTRACT

Diagnosis of relapsing–remitting multiple sclerosis requires demonstration disseminated symptoms in time and space on the basis of neurological assessment or magnetic resonance imaging findings. In addition, the diagnosis is conditioned by ruling out other conditions that may explain the clinical symptoms.

We describe the patient presenting in the initial stage of the disease neurological symptoms and magnetic resonance imaging lesions, that met criteria for relapsing–remitting multiple sclerosis diagnosis.

The patient was administered immunomodulatory treatment. However, the subsequent course of the disease tended to verify the diagnosis. Finally, the patient was diagnosed with intravascular B-cell lymphoma.

Intravascular lymphoma is a rare form of lymphoma characterized by the development of cancerous cells in the lumen of small and medium-sized blood vessels.

Due to the lack of characteristic biomarkers in laboratory tests and neuroimaging, the diagnosis is based on histopathological examination of the sample of the affected organ taken by biopsy. It should be consider in all cases of central nervous system damage of unknown, undiagnosed etiology.

1. Introduction

Diagnostic criteria for relapsing–remitting multiple sclerosis (RR–MS) require disseminated symptoms in time and space on the basis of clinical presentation or magnetic resonance imaging (MRI) findings. In addition, the diagnosis is conditioned by ruling out other causes that may explain the clinical symptoms.

The sensitivity and specificity of the current criteria for the diagnosis of multiple sclerosis (MS) is quite high and amounts to 60% and 87% respectively. However, there is always a risk of

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Abbreviations: MRI, magnetic resonance imaging; RIS, radiologically isolated syndrome; CSF, cerebrospinal fluid; MS, multiple sclerosis; RR–MS, relapsing–remitting multiple sclerosis; CT, computer tomography; IVL, intravascular lymphoma; CNS, central nervous system.

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wrong diagnosis, particularly with respect to rare diseases that mimic MS both in the clinical presentation and MRI [1,2].

We present a case of a female patient presenting neurological symptoms and MR lesions appropriate for relapsing–remitting form of MS (RR–MS). The patient was administered immunomodulatory treatment. However, the subsequent course of the disease tended to verify the diagnosis. Finally, the patient was diagnosed with intravascular B-cell lymphoma.

Only a few cases of intravascular lymphoma imitating multiple sclerosis were so far described. Generally, they had more rapid progress from the beginning. No description of a lymphoma mimicking the relapsing–remitting form of MS was available in the literature. Therefore, we presented the case because alive diagnosis is extremely difficult in this disease and poses a challenge to a neurologist.

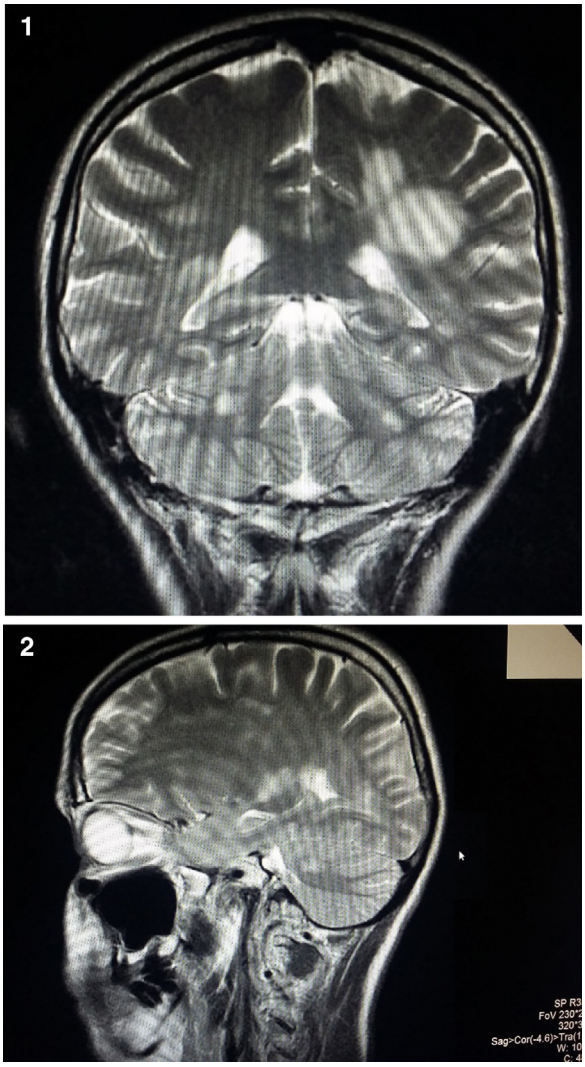
2. Case report

A 47-year-old patient complained periodically of headaches with nausea since May 2014. Neurological examination did not reveal any abnormalities. Computer tomography (CT) of the head was performed followed by histopathological examination of the sample from the left maxillary sinus and fungal sinusitis was diagnosed. The patient was treated symptomatically with temporary improvement. Due to recurring headaches, MRI of the brain was performed which revealed numerous small hyperintensive T2 lesions, located periventricular, in the corpus callosum and the cerebellum and hypointensive T1 lesions, partly with gadolinium enhancement. The findings met the MRI criteria for RR–MS. Due to the lack of other clinical symptoms than headaches, radiologically isolated syndrome (RIS) was diagnosed.

In September 2014, the patient experienced subacute dizziness and slight right-sided hemiparesis. Control MRI of the head showed an increase in the number of lesions (Figs. 1 and 2).

A lumbar puncture was performed. Cerebrospinal fluid (CSF) was clear and colorless, cytosis – 0 cells, protein 56 mg/dl, glucose 67 mg/dl, chloride 114 mmol/l. There was no presence of oligoclonal bands, neuroborreliosis was ruled out. The patient was administered 1 g of methylprednisolone intravenously for 5 consecutive days and neurological symptoms resolved.

Over the next month, the disease exacerbated again in the form of double vision, right-sided hemiparesis, balance disorders and severe headaches. The patient was treated with steroids with positive outcome. Relapsing–remitting form of MS was diagnosed at that time and interferon β1b (IFN-β1b) was administered. The patient was stable and without neurological deficit during first 3 months of IFN-β treatment. Then relapse occurred – double vision, balance disorders and right-sided hemiparesis. In addition, the patient showed signs of depression. Methylprednisolone was administered and neurological symptoms resolved again. A month later – in February 2015 generalized seizures occurred. At that time, since depression and epilepsy were diagnosed, treatment with interferon was discontinued.



Figs. 1 and 2 – Brain MRI performed at first stage of the disease. It shows numerous hyperintensive T2-lesions located periventricular and in the cerebellum.

The patient was in stable condition until March 2015, when orientation, speech, balance disorders and right-sided hemiparesis gradually escalated. She was admitted to the hospital and head MRI revealed extensive hyperintensive T2 lesions – 20–34 mm in diameter in both hemispheres of the brain, the cerebellum, pons and thalamus. Most lesions were with gadolinium enhancement. Standard methylprednisolone therapy was administered intravenously, but with no improvement. The clinical condition even deteriorated. Disorientation and pyramidal paresis of the lower extremities and the left upper limb progressed. Damage to the 7th left cranial nerve and quadriplegic ataxia occurred. The patient fell backward in Romberg's test and could not walk independently. The results of additional tests were following Hb 12.4 g/dl, RBC 4.04×10^6/μl, PLT 145×10^3/μl. MRI of the cervical spinal cord was normal, EEG showed generalized periodic slow delta waves. The following conditions were considered in the diagnostic process: the systemic vasculitis, malignancy, acute disseminated encephalomyelitis (ADEM) and progressive multifocal