Case study

Multiple Sclerosis Manifested by Paralysis of Cranial VI Pair with Diplopia

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ABSTRACT

Aims: To describe a Multiple Sclerosis Manifested by Paralysis of Cranial VI Pair with Diplopia.
Presentation of Case: A.P.R. female patient, 31 years old, has presented diplopia for 04 days. She denied too many symptoms and comorbidities. No eye trauma and previous eye surgery.
Discussion: Multiple Sclerosis (MS) is a chronic, immune-mediated and demyelinating disease of the central nervous system that mainly affects young female adults. About 85% of individuals with MS start the clinical picture in the form of a relapse, and less can open the picture with progressive neurological deficits, although occasional relapses occur during the course of the disease. Eye changes are frequent in MS and are often the first clinical manifestation.
Methodology: Case report
Results: MS is a rare comorbidity and there are no exact and concrete epidemiological studies so far. Studies about eye alterations are also scarce in Latin American countries.
Ocular involvement may be the first sign of MS. Although MS is an uncommon cause of cranial nerve palsies, its frequency increases in young individuals, with a predominance of abducens nerve palsy, as occurred with the patient in the present report, emphasizing the importance of knowing the profile of this disease.
Conclusion: Ocular findings in MS include optic neuritis, retinitis, peripheral vasculitis, ocular motility abnormalities that can manifest as diplopia or nystagmus, and these manifestations should be recognized by ophthalmologists

Keywords: Multiple sclerosis; Optic neuritis; Abducens nerve palsy; Diplopia; Neurological deficit.

1. INTRODUCTION

MS is a demyelinating, inflammatory, chronic, autoimmune, primary central nervous system (CNS) disease of unknown etiology, in which myelin is the target of an autoimmune process, with consequent loss of neurological function. It mainly affects young adult females between 10 and 59 years old. [1,2,3] Ocular manifestations of MS may present throughout the disease with oculomotor alterations such as optic neuritis, diplopia, insufficiency of convergence, cranial nerve palsies, internuclear ophthalmoplegia and nystagmus.[1-4]
It has a worldwide distribution, although some peoples are rarely affected. It is a relatively common disease in white individuals living in the northern US, Europe and Canada. [1,3,4,5]

The disease affects 6 to 14/100,000 individuals in the southern US and 30 to 80/100,000 individuals in northern Canada and the US. It mainly affects young adults with 75% or more of the cases occurring between 15 and 50 years. Women are more commonly affected than men. There is a significant increase in its incidence in members of the same family, which highlights the importance of the genetic factor in this pathology. [1-6]

MS presents several clinical manifestations such as decreased motor, sensory, cerebellar, cognitive, urogenital, mental and visual functions, which are characterized by periods of exacerbation interspersed with periods of remission. Although MS potentially affects any part of the CNS, many patients with this disease present ocular involvement as the first sign. [2,3,4,5.7]

Ocular findings in MS include optic neuritis, retinitis, peripheral vasculitis, ocular motility abnormalities that manifest as diplopia or nystagmus, and pars planitis, although optic neuritis, due to its high frequency and established correlation with MS, is the ocular change that most important, often being the first clinical manifestation of the disease. 4,5,8,9 Visual field defects are varied, with no characteristic alteration. The central visual field is not always affected. [4,6,7.9]

Diagnosis of the disease is basically clinical, although subsidiary tests such as magnetic resonance imaging, cerebrospinal fluid analysis and evoked potential studies are useful for its confirmation. [7,8,9,10]

2. CASE REPORT

A.P.R. female patient, 31 years old, has presented diplopia for 04 days. She denied too many symptoms and comorbidities. No eye trauma and previous eye surgery.

On examination, Visual Acuity with the best correction of 20/20 in both eyes.

Biomicroscopy: slight limitation of right eye (RE) abduction, suggesting paralysis of the 6th cranial pair on the right. (Figures 1,2 and 3)

Figures 1,2 e 3.

Fundoscopy was within normal parameters.

Skull and orbit MRI was requested, which showed signs of demyelination. Hypersignal foci on T2 and FLAIR sequences located in the periventricular white matter, denoting perivenular spread of the lesions. (Figure 4)

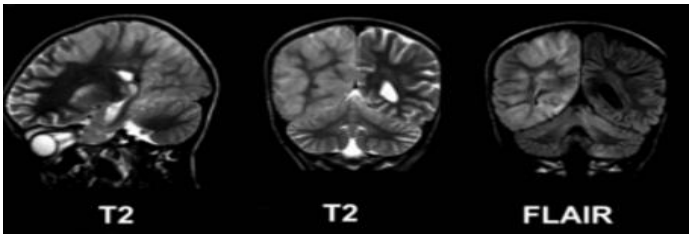

Figure 4 Skull and orbit MRI

Referred to the Neurology service, with a diagnosis of Multiple Sclerosis established with follow-up done by the specialty. In the acute phase, pulse therapy was performed with Methylprednisolone IV 1g for 05 days and in the chronic phase, Fingolimod 0.5 mg VO 1x a day. He is still undergoing ophthalmological follow-up without diplopia and other ocular complaints, with resolution of the condition.

3.**DISCUSSION**

MS is a chronic, immune-mediated and demyelinating disease of the central nervous system that mainly affects young female adults.[2,3,4,11] The patient in the report has an epidemiology similar to that in the literature, both in terms of age and gender. .
MS is a rare comorbidity and there are no exact and concrete epidemiological studies so far. Studies about eye alterations are also scarce in Latin American countries. [9,11,12,13]
Ocular involvement may be the first sign of MS. Although MS is an uncommon cause of cranial nerve palsies, its frequency increases in young individuals, with a predominance of abducens nerve palsy, as occurred with the patient in the present report, emphasizing the importance of knowing the profile of this disease.[14-17]
Eye pain was present in almost all our patients (95%) who had optic neuritis, and this manifestation was not present in our patient. Internuclear ophthalmoplegia is the most common cause of eye movement abnormalities and diplopia in MS, occurring in approximately half of the cases. [15-19]
Most people with MS begin the clinical picture as an attack, but MS can involve any part of the CNS. Ocular findings in MS include optic neuritis, retinitis, peripheral vasculitis, ocular motility abnormalities that present with diplopia or nystagmus, and pars planitis. 1[1,12,17,20,21]
All of them must be recognized by the ophthalmologist, although optic neuritis, due to its high frequency and established correlation with MS, is the most important ocular change in the follow-up of these patients. [14,19,20-23]
Ocular findings in MS are frequent and are often the first clinical manifestation of the disease.[19,21-23] Although optic neuritis was the most commonly observed alteration, the possibility that other ocular alterations precede or accompany the disease should be highlighted. course of the disease[.17,19,20-22] This perception was fundamental in the patient's condition, since her clinical condition began with diplopia secondary to abducens nerve paralysis and not due to manifestations related to optic neuritis.

4. **CONCLUSION**

MS can lead to obvious clinical manifestations, such as optic neuritis, nystagmus, and diplopia, and subclinical manifestations, which occur more frequently. In some cases, the

patient reports blurred vision even with good visual acuity. In other cases, there are no reported eye symptoms, but specific examinations may reveal subclinical abnormalities.
Eye changes are frequent in MS and are often the first clinical manifestation of the disease. MS is a disease capable of causing alterations in the OCT and visual field exams, even in the absence of symptoms reported by patients and in the presence of 20/20 visual acuity, and this particularity of this disease should be taken into account.
Although optic neuritis was the most frequent finding, it should be emphasized that other ocular changes may precede or accompany the course of the disease, in order to make the diagnosis as early as possible in order to initiate the appropriate treatment and, consequently, preserving the systemic and ocular health of affected individuals.

Consent

All authors declare that 'written informed consent was obtained from the patient (or other approved parties) for publication of this case report and accompanying images

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