

MULTIPLE SCLEROSIS AND OPHTHALMOLOGICAL MANIFESTATIONS

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Abstract

Multiple sclerosis is an autoimmune demyelinating disorder of the nervous system that is commonly manifested by visual system involvement and that may initially present with ophthalmologic symptoms. This paper reviews recent findings regarding the ocular manifestations in multiple sclerosis.

Key words: Multiple sclerosis, ophthalmologic symptoms

Introduction

In multiple sclerosis the neuroophthalmologic disorders are common and they may be related to the disease as well as also to the same therapy used. In particular we know that 25-30% of patients in various stages of the disease show demyelinating damage to the nerves and optical alterations of eye movements extrinsic and intrinsic can be present in 70% of patients [1-3].

Material and Methods

Optic neuritis

The term optic neuritis refers to an inflammatory condition of the optic nerve often idiopathic but also in various systemic diseases and infectious (eg, lupus, sarcoidosis, Crohn's disease, Lyme disease, syphilis, varicella zoster virus, etc.).

In the case of multiple sclerosis, optic neuritis is a symptom extremely significant and often present in the initial phase. By several multicenter trials is observed that this pathology shares localization population with MS, predominantly affects young patients (mean age 31.8 years) and is prevalent in women with a ratio of 3: 1. In two thirds of cases is retrobulbar optic neuritis [4-7]. The diagnosis of demyelinating optic neuritis is essentially clinical and is based on the classic symptoms such as loss of vision (central vision, peripheral or sectoral), tenderness eye in particular to the version of the bulbs for extraocular muscle traction on the sheath of the optic nerve inflamed apex orbital, dyschromatopsia, scotoma.

Vision loss usually develops over hours or days and can affect the central vision, peripheral vision and color vision. In most cases, there is a relative afferent pupillary defect (RAPD), caused by incomplete injury of the optic nerve (the pupils respond weakly if the eye is stimulated affection and promptly if the light is directed into the eye healthy). The fundus examination showed optic disc edema in 35% of cases and the absence of bleeding. The execution of laboratory tests or instrumental (ANA, chest X-ray, CSF examination, etc.) are not strictly necessary. The cranial MRI with contrast medium showed no abnormalities. Optical (hyperintensity in T2) and is recommended in the evaluation of a possible demyelinating disease. The ENP show alterations of P100 in most MS patients. The TMB in MS patients showed thinning of the retinal nerve fiber (RNFL) even in the absence of optic neuritis and is correlated to reduced visual acuity [9]. Typically demyelinating optic neuritis has an excellent prognosis even in the absence of treatment. The first improvements are observed

after about a month and after a few months we see a good recovery of visual function. Adverse prognostic factors are the serious visual impairment onset or worsening after a month.

The use of steroid bolus accelerates visual recovery and has a protective effect on the SM [6-7]. The differential diagnosis between demyelinating optic neuritis from other forms of optic neuritis is mainly based on clinical aspects. The demyelinating form starts so subacute and progresses over a period of 24-48 hours, reaches the apex of symptoms typically after two weeks with initial improvement after about a month. The optic neuropathies earlier non arteritics debut suddenly, have a modest recovery of vision, not generally have eye pain, medium-advanced age, optic disc edema in 100% of cases with frequent bleeding.

A specific form of optic neuritis is neuromyelitis optica (NMO), demyelinating disease distinct from SM and characterized by unilateral and bilateral optic neuritis (NO) and acute myelitis. The NMO is characterized by episodes of acute blindness, even severe, paraplegia and quadriplegia, associated with sensory disturbances and alterations of the sphincters. The disease is often associated also to other immune system disorders (SLE, myasthenia, etc.). The etiology is unknown, but it is believed that the NMO is an autoimmune disease associated with autoantibodies directed against aquaporin-4. The diagnosis is clinical and instrumental (antibody positivity anti-aquaporin, spinal MRI).

The examination of the fundus is crucial because the presence of exudates or bleeding is not typical of demyelinating optic neuritis. These findings are generally associated with inflammatory or infectious diseases (sarcoidosis, m. Lyme, Lupus, neuroretinitis). Fingolimod may induce macular edema, characterized by painless loss of vision in one or both eyes, normal pupillary function, occasional metamorphopsia. This phenomenon is dose-dependent, typically occurs in the first few months of therapy and is more frequent when coexisting diabetes mellitus, uveitis, retinal vein occlusions. Typically there is a normalization to the suspension of the drug. Another differential diagnosis is with central serous chorioretinopathy, eye disease that affects the retina and cause serous detachment of the neurosensory retina. Probably related to overproduction of catecholamines, cortisol, epinephrine and other vascular factors premises. It is generally monocular and is characterized by decreased visual acuity, metamorphopsia, central scotoma. Fundus examination can reveal the elevation and the change in color of the macula

detached, confirmed by OCT. Can bind to steroid therapy in patients with MS, in which case it is important ophthalmologic evaluation as continued therapy exacerbates the disease.

Demyelination back chiasmatic

The process of demyelination may also be present at the level retrochiasmatic. In this condition, rarest than demyelinating optic neuritis, in addition to the asymptomatic cases, we can observe visual field disturbances bilateral type namesake with normal visual acuity in the absence of eye pain. The prognosis is favorable. It is important a differential diagnosis with other disorders such as NS, Lyme disease, glioma, PML [10].

Uveitis

Uveitis is very common in MS. In general it is bilateral and in many cases may precede the diagnosis of MS. The association between the two diseases may be related to environmental factors or immune. May be present anterior uveitis, intermediate or rear. The prognosis is good [11].

Alterations of Efferent System

In about 70% of MS patients are alterations of eye movements due to lesions of the brain stem or cerebellum. The most frequent symptoms are diplopia, blurring of vision, visual fatigue, the oscillopsia. In particular patients with CIS suffering from ocular disorders are at high risk for progression to MS.

Internuclear ophthalmoplegia

The internuclear ophthalmoplegia is characterized by deficiencies in adduction of one eye to the lateral gaze nystagmus associated eye abducted (figure 1). This condition is caused by the interruption of the fibers of the medial longitudinal fasciculus that coordinate the abduction of an eye with adduction of the contralateral (allowing lateral gaze in one direction) and connecting, at the level of the brainstem, the nucleus of the sixth cranial nerve of one side with that of the contralateral III [12].

The internuclear ophthalmoplegia is present in about 40% of MS patients. The disease is also present in vascular disorders such as stroke or neurodegenerative diseases (eg. Progressive supranuclear palsy).

Mild cases are often not recognized and are diagnosed with technical electrooculographic. The prognosis is generally good difference of forms or vascular tumor.

Syndrome One Half

The syndrome One Half is characterized by the presence of an eye totally immobile and one in which there is nystagmus in attempts of abduction, and is present in the case of more extended lesion of the medial longitudinal fasciculus. These syndromes are typically associated with diseases of the brain stem in particular paramedian pontine reticular formation or the VI n ° [14].

The saccadic abnormalities

Saccadic abnormalities are common in MS for alterations in the brainstem (pons, midbrain) or cerebellar dysfunction (abnormal fixation ipometria or hypermetria) [15].

Nystagmus

In 30-40% of patients with MS is present nystagmus in relation to alterations of the fixation, the vestibular system and in particular for demyelinating lesions on the brain stem and cerebellum (vestibular nuclei, interstitial nucleus of Cajal, floc brain. The therapy is the use of gabapentin and memantine [16].

Cranial nerve palsies

Among the symptoms of MS are also included paralysis of isolated or multiple paragraphs. cranial oculomotor (in particular, paralysis of the VI °) because of demyelinating lesions of the brainstem [17].

Conclusion

Neuroophthalmology alterations are common in MS and they may constitute onset symptoms, aggravation of the disease or iatrogenic expression of specific treatments such as fingolimod or natalizumab.

Symptomatic therapies are often ineffective. The use of basic therapies (DMT) is undoubtedly the most useful therapeutic approach and the validity of which is increased if used as early as possible.

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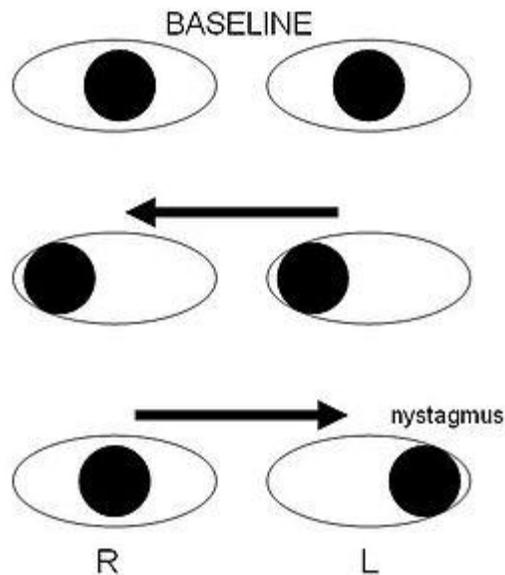


Figure 1. The internuclear ophthalmoplegia is characterized by deficiencies in adduction of one eye to the lateral gaze nystagmus associated eye abducted