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The Appereance of Pars Planitis in Multiple Sclerosis

Tomislav Vidović, Branimir Cerovski and Tomislav Jukić

Department of Ophthalmology, University Hospital Center »Zagreb«, Zagreb, Croatia

A B S T R A C T

The aim of the study was to investigate the clinical association of multiple sclerosis and pars planitis (or intermediate uveitis), as well as to determine the incidence of pars planitis in multiple sclerosis patients. During the period of one year authors examined 42 patients with multiple sclerosis divided into two groups. First group consisted of 23 patients with history of optic neuritis and the second group consisted of 19 patients who have never had optic neuritis. The mean age of patients in the first group was 31.7±5.1 years and in the second group 29.1±8.1 years. Pars planitis was found in 12 patients with multiple sclerosis. Age, sex and degree of neurological disability had no influence on the appearance of pars planitis. Although optic neuritis is considered to be the most common ocular manifestation of multiple sclerosis, the significant number of patients with multiple sclerosis has pars planitis.

Key words: *multiple sclerosis, optic neuritis, pars planitis*

Introduction

Multiple sclerosis (MS) is characterized with inflammation and multifocal damage to myelin in the central nervous system. This disease could manifest with various neurological signs and symptoms in relapsing-remmiting or chronic-progressive form. Ophthalmic symptoms are common in multiple sclerosis patients and optic neuritis is considered to be the most frequent ocular manifestation. Ocular motility disturbances can be also found in MS patients quite often[1,2]. Association between multiple sclerosis and pars planitis has been reported in literature and the prevalence of intermediate uveitis or pars planitis in MS patients is higher then in the general population. The proportion of presence of pars planitis in MS patients is from 3% up to 27%[3]. Pars planitis, first described as chronic cyclitis by Schepens is the term which describes snow banks, snow flakes and snow balls with vitreus condensation over the inferior peripheral retina and pars plana usually in both eyes[3,4].

Material and Methods

This study included 42 patients with multiple sclerosis. Multiple sclerosis was diagnosed according to Posers' criteria[5]. Neurologic deficit and dysfunction were recorded as scores according to the Expanded Disability Status Scale (EDSS)[6]. During period of one year patients were identified and examined in a standardised procedure at Neuroophthalmological division of Department of Ophthalmology, University Hospital Center »Zagreb«, in order to investigate the clinical association of multiple sclerosis and intermediate uveitis and were devided into 2 groups. 1st group consisted of 23 patients with history of optic neuritis and 2nd group of 19 patients without history of optic neuritis. Standard ophthalmologic examination consisted of visual acuity measurement with a Snellen chart, biomicroscopy, ophthalmoscopy, and applanation tonometry. MS patients without signs of pars planitis were examinated on three occasions at a 4 months interval. MS patients with pars planitis were examinated in one-month interval. Every patient with intermediate uveitis and/or vitritis underwent an evaluation for possible infectious etiology or associated systemic disorders. This evaluation included a detailed medical and family history, clinical examination, laboratory testing, determination of angiotensin converting enzyme and lysozyme levels in serum, and chest X-ray when necessary. The presence of systemic vasculitis, chronic bacterial or viral infections had been excluded in all patients with intermedate uveitis. Patients with laboratory abnormalities or clinical histories

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suggestive of another etiology for their intermediate uveitis were excluded from the study. The statistic difference degree between tested groups is determined by variance analysis and Fisher exact test was used to determine the prevalence of the presence of intermediate uveitis according to sex in both groups. p-values <0.05 were considered statistically significant.

Results

Demographic and clinical features

During the period of one year, we examined a total number of 42 patients with multiple sclerosis in order to determine incidence of pars planitis in MS patients. 14 (61%) patients from the group of patients with history of optic neuritis were females and 9 (39%) were males. In the second group, which consisted of MS patients without history of optic neuritis, 11 (58%) were females and 8 (42%) were males (Table 1).

Pars planitis was found in 7 (30%) patients with history of optic neuritis and 5 (26%) in patients without history of optic neuritis. Clinical and demographic data are shown in Table 2.

Treatment regiments

Four patients with pars planitis received between four and seven periocular steroid injections in both eyes. Five patients were treated with corticosteroid drops and ointment and other three patients have received no therapy.

Visual outcomes

Three patients had reduced visual acuity at baseline. But on last control examination two of these patients had normal visual acuity. During follow up one patient had reduced visual acuity due to worsening of pars planitis on second examination. But after several periocular steroid injections visual acuity has recovered to 1.0 vision. The other eight patients had normal visual acuity during one year follow up.

There was no correlation between the degree of neurological disability (EDSS), age or sex with the presence of intermediate uveitis.

Discussion

Intermediate uveitis or pars planitis is characterized by inflammatory deposits in the area of pars plana and it is tipically bilateral. The presence of vitreal cells in an active vitritis could be the first observable sign of pars planitis. The vitritis will frequently result in an accumulation of inflammatory exudate. The accumulation may be small (snowballs) or extensive (snowbanks). Patients are frequently asymptomatic, but may present with modestly diminished vision that is slowly progressive, as well as complaints of floaters. This condition can be found in the literature under the other names such as chronic cyclitis, peripheral uveitis and others. In 1987 International Uveitis Study group approved the term intermediate uveitis. This term contains other kind of inflammation named as cyclitis, vitritis, peripheral uveitis and pars planitis[1,7,8]. The origin of intermediate uveitis is unknown but histopatologic studies suggest a possible autoimmune basis for pars planitis. Intermediate uveitis coud be idiopathic or associated with various systemic diseases. Athough optic neuritis is considered the most common ocular manifestation of multiple sclerosis, significant number of MS patients could have intermediate uveitis[2–4,9–12]. In 1953 Wuseke[13] described association between MS and pars planitis. Since then many investigators have reported linkage of multiple sclerosis and pars planitis. The pathogenetic relationship between uveitis and multiple sclerosis is unknown. Bennett and all suggest that an autoimmune response to common antigenetic factor existing in both the uvea and CNS is responsible for the occurrence of uveitis with MS in susceptible individuals[1]. Incidence of pars planitis in MS patients varied from 3% to 27%[3,14,15]. In our research we have found that 28,5% of MS patients have pars planitis. This variation of incidence could be attributed to variations in diagnostic criteria and classification. Pars planitis is condition which can be treated with coricosteroids (topical or oral), or in severe cases immunosupresive therapy[3,16]. We have treated our patinets with periocular steroid injections and steroid drops and ointment. The indications for periocular steroid injections were decreased visual acuity and the presence of acute signs of intermediate uveitis and vitritis. In other cases steroid drops and ointment were

TABLE 1
DEMOGRAPHIC AND CLINICAL DATA

Group	MS patients with history of optic neuritis	MS patients without history of optic neuritis
N	23	19
Age range (years) (mean±SD)	24–41 (31.74±5.08)	25–40 (29.13±8.1)
Female N (%)	14 (61%)	11 (58%)
Male N (%)	9 (39%)	8 (42%)
MS duration range (years) (mean±SD)	1–8 (4.22±1.88)	1–11 (3.26±2.42)
EDSS* (mean±SD)	1–6 (2.72±1.13)	1–3.5 (2.18±0.79)

*EDSS – An expanded disability status scale according to Kurtzke[6]

TABLE 2
CLINICAL DATA ON PATIENTS WITH PARS PLANITIS

Group	MS patients with history of optic neuritis	MS patients without history of optic neuritis
N	7	5
Age range (years) (mean±SD)	24–41 (32.71±5.96)	27–31 (28.8±2.05)
Female N (%)	4 (57%)	3 (60%)
Male N (%)	3 (43%)	2 (40%)
Reduced visual acuity, N	3	1
Presence of subjective signs, N	5	3
Conjunctival hyperaemia, N	4	3
Presence of snow balls and flakes, N	7	5
Presence of snow banks, N	2	1
Presence of vitritis, N	7	5
Therapy with periocular steroid injections, N	3	1
Therapy with steroid drops and ointment, N	2	3

administrated. Raja et al[3] quoted that indication for therapy was decreased visual acuity to 0.5. Besides corticosteroid therapy their patients were also treated with azathioprine or cyclosporine[3]. Visual outcome in pars planitis is generally good. Only 4 our patients with pars planitis had reduced visual acuity. In 3 patients visual acuitiy has recovered to 1.0. More pronounced visual acuity impairment is caused by cystoid macular edema, cataract and epiretinal membrane. No patient in our study has this kind of complication and therefore visual outcome in our patients is good. Given the small number of patients, the proportion with decreased vision in the long term could be higher and not have been detected in our study.

In conclusion, intermediate uveitis can be found in significant number of patients with multiple sclerosis. Since patients are frequently asymptomatic, MS patients shoud be examined carefully in order to avoid misdiagnosis.

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T. Vidović

Department of Ophthalmology, University Hospital Center, Kišpatićeva 12, 10000 Zagreb, Croatia
e-mail: tvidovic@kbc-zagreb.hr

POJAVNOST PARS PLANITISA U MULTIPLE SKLEROZE

S A Ž E T A K

Cilj ove studije je bio istražiti kliničku povezanost optičkog neuritisa i multiple skleroze, kao i odrediti učestalost pars planitisa u bolesnika s multiplom sklerozom. Tijekom godinu dana pregledano je 42 bolesnika s multiplom sklerozom koji su podijeljeni u dvije skupine. Prva skupina sastojala se od 23 bolesnika koji su imali optički neuritis, dok je u drugoj skupini bilo 19 bolesnika bez optičkog neuritisa. Prosječna dob bolesnika prve skupine bila je 31,7 ± 5,1 godina, a druge skupine 29,1 ± 8,1 godina. Pars planitis je nađen u 12 bolesnika s multiplom sklerozom. Dob, spol i stupanj neuroloških ispada nisu imali utjecaja na pojavnost pars planitisa. Iako se optički neuritis smatra najčešćom oftalmološkom manifestacijom multiple skleroze, značajan broj bolesnika s multiplom sklerozom ima pars planitis.