OCULAR REACTIONS DURING CHRONIC INFLAMMATORY RHEUMATISMS

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Authors' contributions

This work was carried out in collaboration between all authors. Authors MC, NNEL and NNCGF were the doctors consulting patients and writing of the study. The author NH was responsible supervising and writing the study. All authors have read and agree with the final version

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Abstract

Aims: To describe the ophthalmological lesions observed during chronic inflammatory rheumatism to help improve the management of visual function.

Study Design: This was a prospective study.

Place and Duration of Study**:** The study was carried out at the University Hospital Centre of Brazzaville from June 1st, 2016 to May 31st, 2017.

Methodology**:** The study involved 40 patients who were followed in the Rheumatology Department and oriented in Ophthalmology to assess ocular involvement. The usual criteria used in rheumatology have made it possible to diagnose rheumatic diseases. These patients were hospitalized or followed by an outpatient rheumatologist. Ophthalmologic examination was performed at least once for all patients and included a measure of best corrected visual acuity, automatic tonometer eye tone, shirmer test, biomicroscopy. Baseline examination was eye after dilation with mydriatic eye drops at indirect ophthalmoscopy.

Results: of the 40 patients with chronic inflammatory rheumatism, 12 were men and 28 were women. The average age was 40.8 years (range: 10–58 years). The pathologies included systemic lupus in 20 cases (50%), rheumatoid arthritis in 10 cases (25%), spondyloarthropathy in 6 cases (15%), scleroderma in 2 cases (5%), juvenile arthritis idiopathic in 1 case (2.5%) and Behçet's disease in 1 case (2.5%) Twenty-two patients (55%) had ocular involvement. The lesions were unilateral in 14 cases, consisting of uveitis (n = 11), including 7 anterior and 3 posterior cases and 1 case of panuveitis; dry syndrome (n = 8) with keratoconjunctivitis sicca (6 cases) and conjunctivitis sicca (2

cases), and scleritis (n = 3). Three cases of complicated cataract were associated with anterior uveitis. Seven patients had visual acuity ≤ 2/10 in at least one eye and 2 cases had bilateral blindness.
Conclusion: Ocular lesions are commonly associated with rheumatic diseases. These lesions are dominated by uveitis in its anterior form and are seen mainly in spondyloarthropathy. Dry syndrome occurs in rheumatoid arthritis and lupus. The lesions can be silent and require appropriate detection and treatment to prevent eye complications and sequelae.

Keywords: spondyloarthropathy, rheumatoid arthritis, uveitis, dry syndrome, blindness

1. Introduction

Chronic inflammatory rheumatism is characterised by an inflammatory involvement of the connective tissue, which has repercussions on the eye that affect the visual prognosis [1]. Uveitis is associated with some pathologies, such as spondyloarthropathy in 58% of cases [2], as well as Behçet's disease and juvenile idiopathic arthritis [3-5]. The primary localisation of uveitis is always anterior; however, prolonged inflammation may give rise to posterior reverberation [6]. Dry syndrome and scleritis may also be present in rheumatoid arthritis [7].

All ocular tunics can be affected, thereby defining the level of anatomical involvement that guides the etiological assessment. The combination of uveitis and rheumatologic manifestations is likely to guide systemic diagnosis in many cases [8]. Therefore, a frank collaboration between internists and ophthalmologists is useful in the management of induced ocular lesions before the occurrence of complications.

Chronic rheumatic pathology is commonly encountered in our daily practice. For this reason, we have proposed a systematic search for ophthalmological lesions appearing during chronic inflammatory rheumatism to help improve the management of visual function.

2. Material and methods

This prospective study was carried out at the Teaching University Hospital of Brazzaville from June 1st, 2016 to May 31st, 2017, on patients suffering from chronic inflammatory rheumatism who were being followed in the Rheumatology Department and had been oriented to Ophthalmology to evaluate their ocular involvement. The usual criteria used in rheumatology were used to diagnose rheumatic diseases, and the patients were hospitalised or followed by an outpatient rheumatologist.

An ophthalmologic examination was performed at least once for all patients by an ophthalmologist and included a measure of the best corrected visual acuity, an automatic tonometer eye tone, a Schirmer test, a biomicroscopy and a baseline examination. Eyes were examined by indirect ophthalmoscopy after dilation with mydriatic eye drops. Patients were followed for 6 months and reviewed at least 2 times. This study was approved by the National Ethics Commission of the Congolese Medical Society.

The statistical processing of the data was conducted using Stata software. Percentages were compared using the Sokal S test. The statistical significance level was set at $P < 0.05$.

3. Results

During the study period, 40 patients with chronic inflammatory rheumatism were examined, including 12 men and 28 women (a sex ratio of 0.42). The average age was 40.8 years, with a range of 10 to 58 years. The main rheumatic diseases and the distribution of patients by age are shown in (Table 1). Rheumatic diseases included systemic lupus in 20 cases (50%), rheumatoid arthritis in 10 cases (25%), spondyloarthropathy in 6 cases (15 %), scleroderma in 2 cases (5%), juvenile idiopathic arthritis in 1 case (2.5%) and Behçet's disease in 1 case (2.5%). Systemic lupus was found in one out of two ($P < 0.05$) patients.

In total, 22 patients (55% of the cases) had ocular involvement (Table 2). The lesions were unilateral in 14 cases and consisted of uveitis in 11 cases, including 7 anterior, 3 posterior (dysoretic retinitis n = 2 and papilledema n = 1) and 1 panuveitis case. Dry syndrome was found in 8 patients and included keratoconjunctivitis sicca (n = 6) and dry conjunctivitis (n = 2). Scleritis was noted 3 times.

Uveitis was the most recovered lesion, with 11 cases (Table 3). Three cases of complicated cataract were associated with anterior uveitis. Seven patients had visual acuity ≤ 2/10 in at least one eye, and 2 cases of bilateral blindness were noted at the time of the first examination.

4. Discussion

Ocular involvement is a common finding in chronic inflammatory rheumatism [2]. The ophthalmologist may be confronted with eye conditions at the stage where the rheumatological diagnosis is established, as well as during screening before the appearance of inaugural ocular signs. Systemic lupus was the most observed connective tissue disease, accounting for half of the cases in young females, especially in the 21 to 40 age group. The detected ocular lesions were posterior uveitis (3 cases) in the form of dysoric retinitis, which is an attack of microcirculation with occlusion of the retinal or choroidal arterioles [9], and papilledema. The dry syndrome found in 2 cases in our series was also reported by Kahn et al. [10]; these authors showed that lupus accounts for only 5% of the conditions associated with dry syndrome. Rheumatoid arthritis was the second pathology (10 cases). The lesions found were a dry syndrome in 4 cases (10%), consisting of keratoconjunctivitis and dry conjunctivitis in 2 cases each. Heron [7] reported 15% scleritis and confirmed that rheumatoid arthritis was responsible for dry syndrome, scleritis and keratitis. Spondyloarthropathy was noted in 6 of the present cases, while anterior uveitis was the only lesion found (15%). In the literature, uveitis is the most common cause in spondyloarthropathies; it is estimated to occur in 50% to 90% of cases [11]. It is unilateral, relapsing in 50–60% of cases and sometimes is the revealing element of systemic disease [12, 13]. Scleroderma was systemic in the present study, found in 2 patients (5%) female aged 30 years and 48 years who also had keratoconjunctivitis sicca. Juvenile idiopathic arthritis was observed in 1 (2.5%)

10-year-old male; it is considered in the literature as the systemic pathology most frequently associated with uveitis in children [14]. This type of arthritis represents a group of inflammatory joint pathologies that begin before the age of 16 and evolve for at least 3 months [15].

Many authors of reports on large series have claimed the existence of anterior uveitis in relation to juvenile idiopathic arthritis, including Kump et al. in 33% of the cases in the United States [16], Kanski in 20% [17], Ben Ezra in 14.9% [18] and Chebil in 6.2% [19] in Tunisia. Panuveitis was found in patients with Behçet's disease. Chebil in Tunisia [20] estimated that 14.7% of uveitis is due to Behçet's disease. For some authors [21, 22], uveitis in Behçet's disease was the most frequent manifestation, making it an important diagnostic criterion that affects the visual prognosis. We noted that uveitis was the most common pathology in chronic inflammatory rheumatism (27.5%) in all its forms (anterior, posterior and total), with a predominance of anterior uveitis (17.5%).

Cataract is the complication of anterior and recurrent uveitis, and it is mostly found in spondyloarthropathy and Behçet's disease. This cataract is due to the chronic inflammation characterizes which the affectedness [23] as well as the local and general corticotherapy instituted. The chronic inflammation that results from these rheumatic conditions jeopardises the visual function. seven of our patients had a visual acuity of less than 2/10 and either had lupus or rheumatoid arthritis that resulted in visual impairment due to corneal and scleral inflammation.

The two cases of bilateral blindness in the present study arose due to uveitis with pupillary seclusion in spondyloarthropathy and panuveitis in Behçet's disease. The rate of blindness during the follow-up seems to correlate with the speed of the treatment, the diagnostic orientation, the adaptation to the treatment and the severity of the inflammatory attack [24]. Thus, a rapid resolution of inflammation and prevention of relapses would appear to guarantee the preservation of vision. Management therefore requires close collaboration between ophthalmologists, rheumatologists and internists.

5. Conclusion

Ocular lesions during rheumatic diseases are common.These disorders are dominated by uveitis in its anterior form and are seen mainly in spondyloarthropathies. The dry syndrome is associated with rheumatoid arthritis and lupus. These ocular lesions can be silent; therefore, they require a precise and oriented aetiological assessment for their detection and appropriate treatment, in order to prevent subsequent complications and ocular sequelae that can lead to blindness.

REFERENCES

[1] Stephen Foster C. Ocular manifestations of the potential lethal rheumatologic and vasculitic disorders. J FrOphthalmol 2013; 36: 526-32.

[2] Tay-Keamey ML, Schawm BL, Lowder C, JP Dunn, Meissier DM, Vitale S al. Clinical Features and Associated Clinical Diseases of HLA-B27 Uveitis. Am J Ophthalmol 1996; 121: 47-56.

[3] Michelson JB, Chisari FV. Behcet's diseases.SurvOphthalmol 1982; 26: 190-203.

[4] Petty RE, Johnston W, McCormick AQ, DW Hunt, Rootman J, Rollins DF. Uvetis and arthritis induced by adjuvant: clinical immunologic and histologic characteristic. J Rheumatol 1989; 16: 499-505.

[5] Jacob E, Reuland MS, Mackenssen F et al. Uveitis subtypes in a germaninter disciplinary uveitis Center- Analysis of 1916 patients. J Rheumatol 2008 Dec. 15.

[6] Rodriguez A, Calouge M, Pedroza -Seres M, Forest CS. Posterior ocular segment manifestations in patients with HLA-B27 associated uveitis. Ophthalmology 1994; 101: 1267-74.

[7] Heron E, Bourcier T. Scleritis and episcleritis. J FrOphthalmol 2017; 40: 681-95.

[8] Banares A, Jover JA, Fernandez-Gutierrez B, Benitez DE, Castillo JM, Garcia J et al. Patterns of uveitis as a guide in making rheumatology and imunology diagnoses.Arthritis Rheum 1997; 40: 358-70.

[9] Laroche L, Saraux H, Brissaud P. Retinal vasculitis during systemic lupus erythematosus. JFrOphthalmol 1984; 7: 193 - 200.

[10] Kahn MF, Peltier AP. Systemic diseases. Flammarion edits, 1985. 850p.

[11] Pato E, Banares A, Jover JA et al. Undiagnosed spondylarthropathy in patients presenting with anterior uveitis. J Rheumatol 2000; 27: 2198-2202.

[12] Monnet D, Breban M, Hudry C et al. Ophthalmic finding and frequency of extraocular manifestations in patients with HLA-B27 uveitis: a study of 175 cases. Ophthalmology 2004; 111: 802-809.

13] Sap P, Kodjikan L, Adélaide L, Jamilloux. Uveitis of the adult: what should the rheumatologist know? J FrOphthalmol 2015; 82: 298-305.

[14] Dufier JL, Tiret A. Ocular involvment during inflammatory diseases in children. ClinExpRheumatol 1993; 11: 53-5.

[15] European League Against Rheumatism (EULAR). Nomenclature and classification of arthritis in children, Basel: National Zeitung AG, 1977.

[16] KUMP LI, Cervantes-Castaneda RA, Androudi SN, Fooster CS, ocular immunology and uveitis foundation Boston, Massashussets, USA. Analysis of pediatric uveitis cases at a tertiary refferal center. Ophthalmology 200; 112 (7): 1287-92.

[17] Kanski JJ. Uvetis in juvenile chronic arthritis incidence, clinical features and prognosis.Eye 1988; 2: 641-45.

[18] Ben Ezra D, Cohen E, Maftzir Uveitis G. in children and adolescents. Br J Ophthalmol 2005; 89: 444-8.

[19] Chebil A, Chaabani L, Kort Ben Youseff F, Turki F and El Matri. Epidemiological study of the uveitis of the child; about 49 cases. J FrOphthalmol 2012; 35: 30-34.

[20] Chebil A, Baroudi B, Slim M, N Chaker, Lanloum M, M Bouladi, Houman H, El Matri L. Epidemiological profile of uveitis in the Tunis region. J FrOphthalmol 2013; 36: 764-8.

[21] Khairallah M, Ben Yahia S, Kahloun R, Khairallah - Ksiaa I, Messahoud R. Oeil and Behçet's Disease. J Fr Ophthalmol 2012; 35: 826-37.

[22] Cochereau-Massin I, Wechsler B, Lehaong P, Le ThiHuong DU, Girard B, Rousselle F, et al. Ocular prognosis in Behçet's disease.J FrOphthalmol 1992; 15: 343-47.

[23] Chang JH, McCluskey PJ, Wakefeild D. Acute anterior uveitis and HLA-B27. OphthalmolSurv 2005; 50: 364-88.

[24] Bodaghi B, Wechsler B, Du-Boutin LTH, Cassoux N, Lehoang P, Piette J-C. Severe chronic uveitis: classification, diagnostic procedure and therapeutic principles. J FrOphthalmol 2003; 24: 714-802.

Table 1: Distribution of rheumatic diseases

Rheumatic diseases	10-20 years n(%)	21-30 years n(%)	31-40 years n(%)	41-50 years n(%)	51-60years n(%)	Total n(%)
Systemic lupus		6(30)	10(50)	2(20)	2(20)	**20(50)***
Rheumatoid arthritis		2(20)	3(30)	2(20)	3(30)	**10(25)**
spondyloarthritis		1(16.7)	2(33.3)	2(33.3)	1(16.7)	**6(15)**
scleroderma			2(100)			**2(5)**
Juvenile idiopathic arthritis	1(100)					**1(2.5)**
Behçet's disease				1(100)		**1(2.5)**
Total	1(2.5)	9(22.5)	17(42.5)	7(17.5)	6(13)	**40(100)**

Abbreviation:*, *P*<0.05

Table 2: Ocular Lesions

Ocular Lesions

Diseasesrheumatic	Uveitis	Dry syndrome	Scleritis	**Total**
Systemic lupus	3	2		5
Rheumatoid arthritis		4	3	7
scleroderma		2		2
spondyloarthritis	6			6
Juvenilearthritisidiopathy	1			1
Behçet' s disease	1			1
Total	**11**	**8**	3	**22**

Table 3 : Distribution of uveitis

Uveitis	**anterior**	**posterior**	**panuveitis**	**Total**
Spondyloarthritis	6			6
Systemic lupus		3		3
Juvenile idiopathic arthritis	1			1
Behçet's disease			1	1
Total	**7**	3	1	**11**