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Отслойка сетчатки воспалительной этиологии: прогностические факторы

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Inflammatory retinal detachment: prognostic factors

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РЕФЕРАТ

Цель. Определить прогностические факторы у больных с отслойкой сетчатки воспалительной этиологии.

Материал и методы. В данное исследование были включены 18 пациентов (32 глаза) с диагнозом: отслойка сетчатки воспалительной этиологии. Всем пациентам была проведена флуоресцеиновая ангиография (ФА) и оптическая когерентная томография (ОКТ)/сканирующая лазерная офтальмоскопия (СЛО).

Результаты. Возраст 18 пациентов с отслойкой сетчатки, включая 13 мужчин, составил в среднем 33 года. Отслойка сетчатки была двусторонней в 72% случаев. Были выделены два типа отслойки сетчатки. Во всех случаях исходная острота зрения составляла более 0,1. При резорбции субретинальной жидкости наблюдалось выраженное улучшение зрения (<0,3 в 84% случаев). Недостаточное функциональное восстановление было связано с поздним обращением к врачу, воспалением глаз в активной фазе, цистоидным макулярным отеком и изменением слоя фоторецепторных клеток.

Заключение. Прогноз заболевания зависит от тяжести воспаления, большое влияние оказывает ранняя диагностика и строгое соблюдение назначенного лечения.

Ключевые слова: *прогноз, воспалительная отслойка сетчатки, оптическая когерентная томография.* ■

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ABSTRACT

Purpose. To determine prognostic factors in patients with inflammatory retinal detachments (IRD).

Material and methods. A total of eighteen patients (32 eyes) diagnosed with an IRD were included in this study. All patients received fluorescein angiography (FA) and optical coherence tomography (OCT)/Scanning Laser ophtalmoscopy (SLO).

Results. The mean age of the 18 IRD patients, including 13 males, was 33 years old. IRD was bilateral in 72% of the cases. Two types of IRD were distinguished. The initial visual acuity was more than 0.1 LogMAR in all cases. Resorption of subretinal fluid under treatment was associated with marked improvement in vision (<0.3 LogMAR in 84%). Poor functional recovery was associated with delayed care, active eye inflammation, cystoid macular edema and alteration of the photoreceptor layer.

Conclusion. The prognosis depends on the severity of the inflammation and especially on the early diagnosis and the rigor of the therapeutic management.

Key words: *prognosis, inflammatory retinal detachment, optical coherence tomography.* ■

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Inflammatory retinal detachment (IRD), exudative or serous retinal detachment results in fluid accumulating underneath the retina without the presence of a hole, tear, or break [1]. Choroidal vascular permeability and retinal pigment epithelium (RPE) dysfunction due to inflammatory processes are the major pathological conditions that may lead to IRD [2]. Serous retinal detachment is recognized as a leading cause of blindness in the Western world that differentially affects younger, working-age adults and children and causes vision loss both due to direct effects and indirectly via secondary anatomic complications such as cystoid macular edema [3]. The prognostic significance of IRD has not been established in the literature and is difficult to assess given the heterogeneous nature of secondary causes [3].

PURPOSE

Our study aimed to examine the anatomo-clinical features of IRD in association with a variety of disease processes and to evaluatethe visual im-

Table

Inflammatory retinal detachments etiologies

Diagnosis	Number of patients	Percentage
VKH disease	8	44,5%
Posterior scleritis	3	17%
Sympathetic ophthalmia	2	11%
Inflammatory pseudotumors	2	11%
Uveal effusion	2	11%
Syphilis	1	5,5%

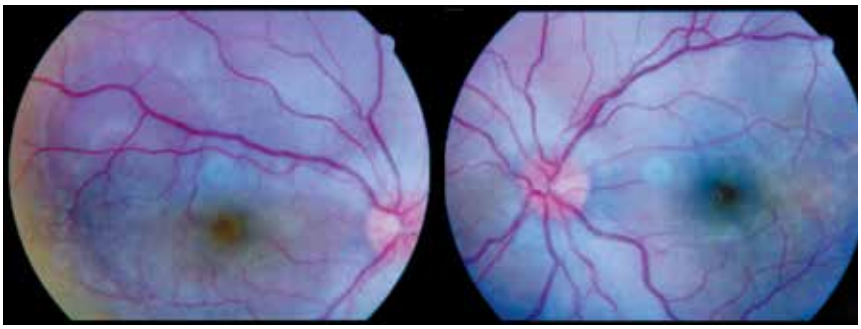

Fig. 1. Fundus photos

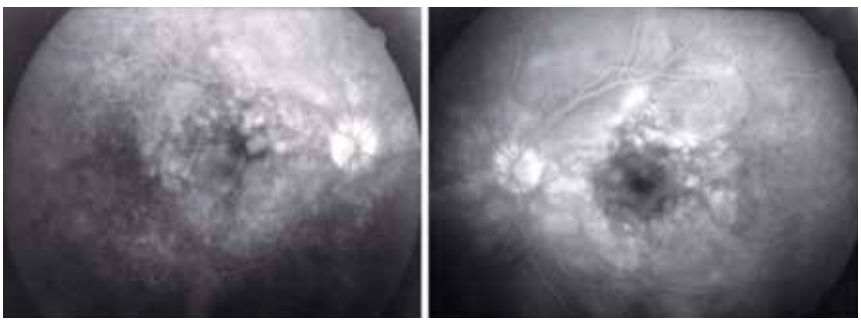

Fig. 2. Fluorescein angiography

pairment in order to deduce prognostic factors.

MATERIAL AND METHODS

We surveyed, in a retrospective chart review, 32 eyes of eighteen patients diagnosed with an IRD from the Ophthalmology department, University Hospital Center La Rabta, between November 2016 to December 2019. All patients underwent detailed ophthalmic examination including measurement of Snellen best-corrected visual acuity (BCVA), slit-lamp examination, tonometry, and dilated fundus examination with noncontact and contact lenses, fundus photography, and optical coherence tomography (OCT)/ Scanning Laser ophtalmoscopy (SLO) at initial examination and during follow-up. Fluorescein angiography (FA) was also performed for all patients at initial examination and when needed during follow-up. IRD was defined as an elevation of the neurosensory retina with an optically clear space between the retina and the RPE layer. Fluorescein angiograms and fundus photography were also reviewed in cases where IRDs were identified.

Medical treatment with a bolus of methyl-prednisolone, followed by oral corticosteroid therapy, was associated with etiological treatment in all cases.

Patients were classified according to the level of visual impairment for descriptive purposes. Mild visual impairment was defined as Snellen visual acuity of 20/25 to 20/40. Moderate visual impairment was defined as visual acuity poorer than or equal to 20/50 and better than 20/200. Severe visual impairment was defined as visual acuity of20/200 or poorer. Snellen visual acuity was converted to the log of the minimal angle of resolution (logMAR) visual acuity using the formula logMAR VA= -log (decimal equivalent of Snellen visual acuity).

RESULTS AND DISCUSSION

Thirteen patients (72,2 %) were male. The mean age of patients was 33 years old (range, 21-59 years). IRD was bilateral in 72% of the cases. Identified causes are summarized in *Table*, including Vogt Koyanagi Harada (VKH) disease (eight), posterior scleritis (three), sympathetic ophthalmia (two), inflammatory pseudotumors (two), uveal effusion (two), and syphilis (one). The initial visual acuity (VA) was more than 0.1 LogMAR in all cases and the resorption of subretinal fluid under treatment was associated with marked improvement in vision (<0.3 LogMAR in 84%).

In this study, we identified 2 types of IRD: the first type, multifocal *(Fig. 1, 2)*, of different age and size *(Fig. 3)*, with tendency to confluence with highlighting of highly reflective points within the retinal detachment *(Fig. 4a, b)* (mainly in the context of VKH disease,

sympathetic ophthalmia). The second type includes IRD of small size, multiple, rather peripheral (posterior scleritis, inflammatory pseudotumors of the orbit...). However, both of them seem to share the same pathogenic mechanisms: alteration of RPE by sub-retinal conditions and passage of fluid from the choroid to the subretinal space. In fact, choroidal inflammation induces disruption of the integrity of outer blood retinal barrier (BRB) [4], then sub-retinal fluid (SRF) accumulation, therfore a fibrinous membrane forms on the RPE [4, 5]. The influx of SRF pushes this membrane which, when detached, forms septa that divide the subretinal spaces into compartments [5]. Similar appearance has been reported by Gupta et al. in his series [6]. Furthermore, the confrontation of C scan and B scan, in our serie, demonstrated that the accumulation of SRF in the outer layers of the retina produces an aspect of IRD of different ages, bullous, multi lobular containing exudation of medium reflectivity whose sedimentation could explain the formation of the fibrinous membrane *(Fig. 3, Fig. 4A, b)*.

A variety of causes appear to be involved in the development of this process: choroidal tumors [7] (primitive or metastasis), VKH [5], posterior scleritis [8], parsplanitis [9], pregnancy toxemia [10], hypo proteinemia [11], excessive retinal Laser photocoagulation [12], choroidal neovascularization, uveal effusion [13]. Spaide et al [14], showed that uveal effusion syndrome may cause retinal serous detachments through decreased outflow through the sclera and VKH syndrome may lead to detachment of the retina and RPE through diffuse choroidal vascular hyperpermeability combined with alteration in RPE function, both secondary to inflammation.

Specific therapy required to treat the process and associated IRD varied according to the disease etiopathogeny. Corticosteroid treatment was rooted in addition to etiologic treatment. Saatci et al [2], reported that inflammatory retinal detachment is treated according to the nature of underlying disease. For appropriate treatment, the underlying cause should be seeked and thereby exhaustive systemic investigation should be carried out. Surgical intervention (drainage of subretinal fluid) is planned [15] if fluid is non-resolving, chronic and bullous retinal detachment, and after failure of conventional treatment.

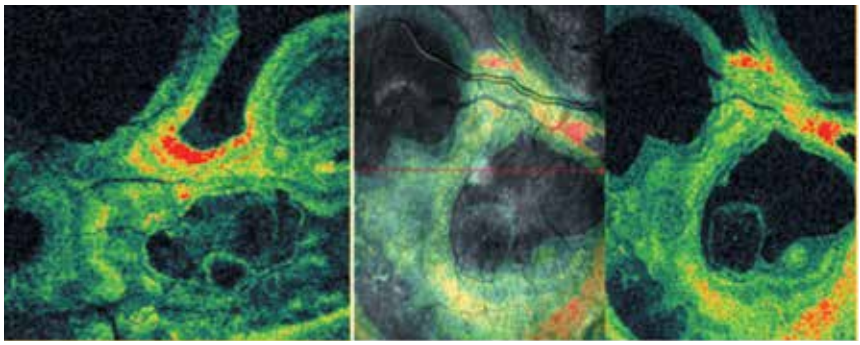

Fig. 3. OD – C Scan OCT

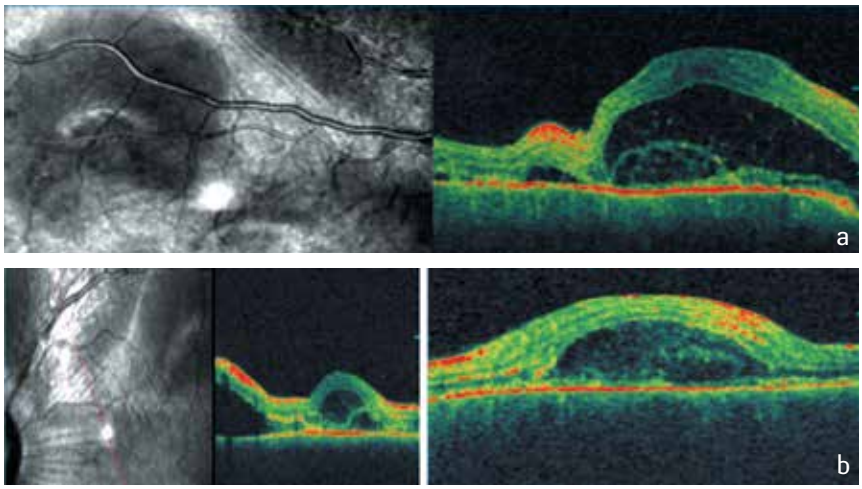

Fig. 4. B Scan OCT: a) OD; b) OS

Indeed, poor functional recovery was associated with delayed care, active eye inflammation, cystoid macular edema, alteration of photoreceptor layer, choroidal thickening, chorioretinal atrophy, and dense and organized sub-retinal lipid exudates. Increased central subfield thickness (CST) was correlated with poorer logMAR visual acuity in patients with IRD [3]. Other factors including photoreceptor integrity, presence or absence of foveal atrophy, and chronicity of macular edema likely contributed to visual impairment [3].

Consistently, three factors are considered to be of relevance for the good prognosis of IRD: The early care as Therapeutic factor. Etiological factors: we have noted that resorption of IRD during acute posterior multifocal placoid pigment epitheliopathy (APMPPE) is spontaneous withinsix days to two weeks. Anatomic Factors: decrease of the inflammatory retinal detachment from 48 hours with reapplication of the two outer sheets of the retina within one month, elongation of photoreceptors with protrusion of their apical segment within the IRD from 48 hours of systemic corticosteroid therapy, restoration of the third hyper reflective band corresponding to the photoreceptor layer (IS/OS junction) from one month of systemic corticosteroid therapy, and regularity of the external hyper reflective line.

CONCLUSION

Inflammatory retinal detachment may develop as a consequence to any pathological condition that violates the integrity of the inner or outer blood retinal barrier. The OCT exam by making a precise qualitative and quantitative imaging has allowed a better understanding of the IRD pathogene-

sis and therefore has been very useful for diagnostic orientations, therapeutic monitoring and for the evaluation of prognosis.

A limitation of this study is the retrospective, cross-sectional nature of the study. Despite this limitation, we were able to identify good and poor, clinical and para-clinical prognostic factors. The latter depends on the severity of the inflammation and especially on the early diagnosis and the rigor of the therapeutic management. Only early, rapid, appropriate and sometimes aggressive treatment can improve the anatomical and functional prognosis.

Further prospective studies are needed and could provide more objective data employing OCT-angiography strategies in the measurement of structural outcomes and might better define the visual prognostic significance of different subtypes of IRD and their response to therapy.

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