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Ophtalmology

Multifocal Choroiditis and Ocular Tuberculosis

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Abstract **Case Report**

Ocular tuberculosis (TB) is a rare disorder whose manifestations are very varied. We report the case of a patient from a tuberculosis-endemic country, presenting a multifocal choroiditis. The etiological investigation oriented the diagnosis towards a tubercular origin. Antituberculosis treatment was recommended in combination with corticosteroid therapy, the course was marked by stabilization of the lesions and a slight improvement in visual acuity. In TB-endemic countries the diagnosis should be made in the presence of multifocal choroiditis in order to provide appropriate treatment.

Keywords: Tuberculosis, multifocal choroiditis, anti-tuberculosis treatment.

INTRODUCTION

Tuberculosis is a transmissible infectious disease caused by Mycobacterium tuberculosis. This disease is the second leading cause of infectious mortality in the world after infection with the human immunodeficiency virus. WHO estimates the number of patients with latent TB at one-third of the world's population in 2014 with a global incidence rate of 122 cases per 100,000 population in 2012 [1]. Ocular tuberculosis remains a rare entity. It is the leading cause of infectious eye inflammation in underdeveloped countries [2]. Ocular tuberculosis affects all the tunics of the eye, but the uveal location is the most common. The clinical manifestations of this infection are polymorphic and variable which makes diagnosis difficult. Multifocal choroiditis is a very characteristic feature of this disease. The treatment is based on anti-bacillary drugs with or without corticosteroids. We report an observation of multifocal choroiditis associated with ganglionic tuberculosis.

Patient and observation

Female patient, 32 years old, vaccinated, having as antecedent a mother treated for pulmonary tuberculosis, having consulted at ophthalmic emergencies for rapidly progressive decline of vision in the left eye evolving for 15 days. Corrected visual acuity is 10/10 on the right eye and 7/10 on the left eye. The examination of the eyelids, conjunctiva and anterior segment are without particularities. The fundus examination found multiple deep yellowish lesions at the posterior pole and the midlle retinal periphery at the left eye (Photo 1). The vitreous is calm.

Retinal fluorescein angiography shows in the early phases in the left eye multiple hypofluorescent deep lesions, becoming hyperfluorescent at later times associated with papillitis (photo 2).

Macular OCT showed in the left eye an hyper reflectivity of the choriocapillaris related to choroiditis without macular edema (photo 3).

Complete blood count, inflammatory markers (Erythrocyte sedimentation rate ESR, C-reactive protein CRP) are normal. Tuberculin intradermal reaction and quantiferon test are positive. Chest X-ray revealed mediastinal widening in relation to mediastinal adenopathy confirmed by the thoracic scan, whose biopsy showed epithelioid and giganto-cellular granuloma related to tuberculosis.

In total, it is a multifocal form of tuberculosis. The treatment consists of an antibacillary therapy combining Ethambutol (15 mg / kg / day), Rifampicin (10 mg / kg / day), Isoniazid (5 mg / kg / day), and Pyrazinamide (20 mg / kg / day) then a combination of Rifampicin and Isoniazid for 6 months. A bolus of methylprednisolone was indicated during 3 days relayed by an oral corticotherapy at 1mg / kg / day. The evolution was marked by the stabilization of the lesions and a slight improvement in visual acuity at 8/10 in the left eye.

Photo-1: Fundus examination: multiple deep yellowish lesions at the posterior pole and the midlle retinal periphery at the left eye

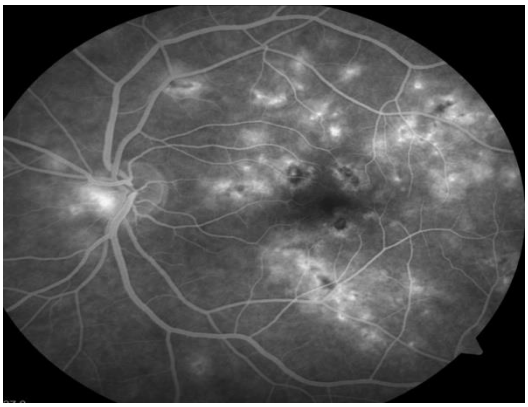

Photo-2: Retinal fluorescein angiography: in the early phases multiple hypofluorescent deep lesions, becoming hyperfluorescent at later times associated with papillitis

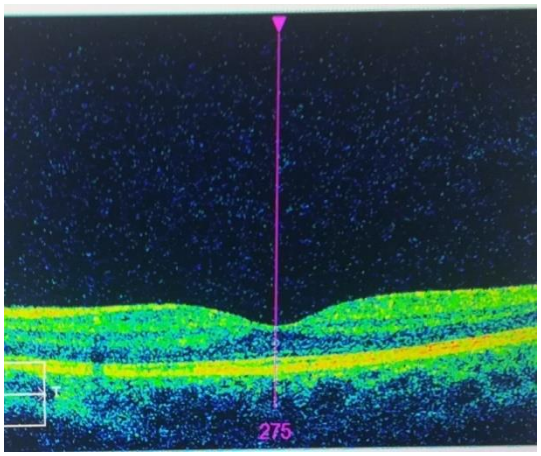

Photo-3: Macular OCT of the left eye: hyper reflectivity of the choriocapillaris related to choroiditis without macular edema

DISCUSSION

In aetiopathogenic terms, the ocular tissue can be affected during tuberculosis either directly by the bacillus performing microbial metastases (hematogenous), or indirectly (by a cellular hypersensitivity reaction against circulating antibodies).

Choroidal involvement occurs directly in 28% of miliary tuberculosis cases and in 5.5% of cases of tuberculous meningitis [3-5]. These data are confirmed by the study of Bouza *et al*. which showed that the only factor that exposes ocular involvement is miliary tuberculosis [6].

In clinical terms, tubercular choroiditis is characterized by the classic tubercles of Bouchut, which are buffy yellow nodules, especially at the posterior pole [6]. These nodules are unilateral in 80% of cases, with a number of lesions ranging from 1 to 50. Anterior segment involvement as well as periphlebitis may be associated. Exudative retinal detachment associated with intraretinal exudates and cystoid macular edema [6, 7] is rarely found. These ophthalmoscopic lesions are neither pathognomonic nor specific, which often makes diagnosis difficult.

Retinal fluorescein angiography shows at the early times an hypofluorescence followed by progressive impregnation from the periphery to the center. At later times the lesions show diffuse hyperfluorescence with papillary hyperfluorescence. Indocyanine green angiography (ICG) has shown interest in tuberculous choroiditis, even in subclinical disorders [6-9]. The ICG, which we do not have any personal experience, can help the diagnosis, but it is impossible to differentiate on the basis of ICG angiography, sarcoidosal choroiditis of tuberculous choroiditis [9].

In our patient, the diagnosis of ocular tuberculosis was posed on a bundle of clinical and para-clinical arguments notably the notion of tuberculous contagion, positive result of tuberculin skin test, positive quantiferon test, the presence of extraocular lesions and favorable evolution under antituberculous treatment.

Some authors advise the search for Koch's bacillus in the anterior chamber puncture fluid, vitreous suction fluid or chorioretinal biopsy in the presence of any suggestive lesion, provided that the lesions do not respond to Isoniazid-administered test treatment. at a rate of 300 mg per day for 3 weeks. In case of improvement, conventional Tuberculosis treatment may be undertaken.

In our case, the treatment is that of systemic involvment associating a quadritherapy during two months: Isoniaside 5m / kg / day, Rifampicin 10mg / kg / day, Pyrazinamide 20mg / kg / day, Ethambutol 15mg / kg / day, followed by a dual therapy: Isoniaside and Rifampicin at the same dosage for four months. Local or systemic corticosteroids may or may not be associated depending on the degree of associated

inflammation. This corticosteroid therapy must imperatively be associated with antituberculous drugs.

The prognosis of tuberculous choroiditis is favorable under anti-bacillary treatment combined with corticosteroid therapy which considerably reduces ocular recurrence with stabilization or even improvement of final visual acuity in the absence of macular involvement [10].

CONCLUSION

Ocular tuberculosis is a rare localization of tuberculosis. Multifocal choroiditis is very characteristic but non-specific whose diagnostic confirmation remains a challenge in most cases. It occurs most often in the context of alleged or latent tuberculosis whose difficulty lies in the detection of intraocular mycobacteria. The diagnosis must be evoked in front of any multifocal choroiditis especially in countries of endemic tuberculosis in order to propose a suitable treatment allowing stabilization or a visual improvement.

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