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Toxoplasmic Chorioretinitis: About a Case in an Immunocompetent Adult at the Renaissance University Hospital Centre (UHC) in N'Djamena (Chad) and Review of the Literature

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Abstract

Toxoplasmic chorioretinitis also known as ocular toxoplasmosis is a parasitic infection caused by the obligately intracellular multiplying protozoan called *Toxoplasma gondii*. Active toxoplasmic chorioretinitis is a rare condition in immunocompetent people. We report a case of a 47-year-old patient who received reduced right visual acuity, left hemiparesis and eye pain. Examination of the right anterior segment of the eye is unremarkable. In the fundus of the right eye, there was a focus of active toxoplasmic chorioretinitis located in the macula at 1.5 mm papillary diameter next to old scar lesions. The ophthalmological examination of the left eye was unremarkable. The paraclinical assessment carried out on the patient shows a positive Remington test on two occasions three weeks apart. The clinical outcome after initiation of treatment was favorable with a healing of the active site within four weeks.

Keywords

Chorioretinitis, Toxoplasmosis, N'Djamena, Chad

1. Introduction

Ocular toxoplasmosis is the most common cause of inflammation of the posterior segment of infectious origin. The seroprevalence of toxoplasmosis in humans varies considerably from country to country and region to region, partly due to different dietary habits. In France, it is estimated at 51.7% (varying from

35% to 75% depending on the region). The risk of ocular damage is not fully known, but its prevalence is estimated at 2% [1]. The most typical lesion appears in the form of a focal yellow or white retinitis with blurred edges, most often the satellite of an old pigmented or atrophic scar lesion. There are many other less characteristic clinical forms, in which the use of an anterior chamber puncture can prove useful in cases of diagnostic doubt. Its diagnosis is most often presumed in the suggestive chorioretinal lesions. The origin of the infection can be congenital or acquired. Therapeutic management essentially depends on the location of the outbreak and must not neglect the possible toxicity of antiparasitic molecules. Ocular toxoplasmosis is a parasitic condition caused by the protozoan called Toxoplasma gondii, with obligate intracellular multiplication, the leading cause of posterior uveitis in the world [1] [2] [3]. Toxoplasmic chorioretinitis is one of the causes of reduced visual acuity that can occur at any age. It typically manifests itself in the form of retinochoroidal foci. We present a case of active chorioretinitis in the right eye observed at the Renaissance University Hospital in N'Djamena, Chad.

2. Observation

A 47-year-old patient with no particular pathological history, originally from China, with a notion of regular consumption of undercooked meat for three years before the onset of symptoms, consulted to the emergency room on May 3, 2020 for a sudden drop in right visual acuity and left hemiparesis which evolved in 3 days.

On admission, the clinical examination revealed a decrease in right visual acuity. There were no signs of neurological localization. The ophthalmological examination included the measurement of visual acuity of the right eye on the Monnoyer scale, which gave a reduction in visual acuity measured at 5/10. Examination of the appendices was normal. On the slit lamp examination, the anterior segment of the right eye was unremarkable. The measurement of intraocular pressure using an applanation tonometer was calculated at 12 mm Hg. Examination of the fundus using the Volk 90D lens made it possible to detect a whitish, round, deep focal lesion with blurred edges. The papillary diameter of the temporal site was greater than one and a half of the papillary diameter of the macula which was without a retinal hemorrhagic spot in the vicinity of the focus. The ophthalmological examination of the left eye was unremarkable. The patient was in good general condition. We have now raised the hypothesis of active toxoplasmic chorioretinitis (**Figure 1** and **Figure 2**).

The brain and thoracoabdominopelvic computed tomography (CT) scans performed were normal. For the toxoplasmic serology, immunoglobulin G was positive with a level of 480 IU/mL and immunoglobulin M was positive indicating a recent infection which was less than 6 months before examination. This positive toxoplasmosis serology was confirmed by a second sample three weeks later by the same laboratory Serological examination of the aqueous humor after puncture of the anterior chamber was not performed (**Table 1**).

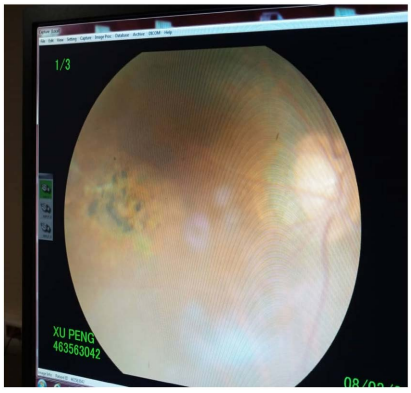

Figure 1. Cicatricial macular chorioretinitis in our patient's right eye.

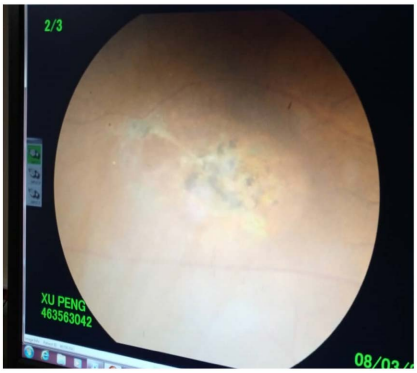

Figure 2. Focus of active toxoplasmic chorioretinitis located on the macula at 1.5 papillary in our patient's right eye.

Table 1. Biological data results.

Settings	Results
Serology	
HIV	Negative
HSV	Negative
COGS	Negative
Syphilis	Negative
C-reactive protein	4 mg/L
Blood Count	
Leukocytes	3700/mm^3
Hemoglobin	13.7
Patelets	237,000/mm^3
Sedimentation rate	14 mm/1st hour and 22 mm/2^e hour
Creatininemia	65.8 µmol/L
blood urea nitrogen	4.23 mmol/L
Fasting blood sugar	6.08 mmol/L

The patient was placed on triple therapy consisting of pyrimethamine 100 mg on the first day then 50 mg on the following days combined with sulfadiazine 100 mg/kg/24hours and folinic acid 25 mg/24hours. Prednisolone 1 mg/kg/24hours was also used to reduce macular or optic nerve inflammation and can be started on day 3 of antibiotic therapy which made it possible to stop the extension of the chorioretinitis focus and to limit its impact on visual function. The evolution was marked by the regression of the symptomatology but the patient decided to return to China for further treatment. The treatment was well tolerated.

3. Discussion

The diagnosis of ocular toxoplasmosis is essentially based on ophthalmological examination of the fundus [1], however, the clinical forms are numerous. In our case, the lesions are typical, which were focal white, round, deep lesions with blurred edges. The papillary diameter of the temporal site was greater than one and a half of the papillary diameter of the macula. These typical lesions had been described by certain authors [1] although these signs are pathognomonic of toxoplasmosis [4]. However, atypical lesions may exist [5] [6]. Ocular toxoplasmosis is rare in childhood [7]. In our case, the patient's age at which the initial episode occurred was 47 years old. In Diallo S. it was found in an 18-year-old girl in 2018 in Mali [7]. Some authors found an average age of onset of initial episodes of ocular toxoplasmosis equal to 31.1 years [8]. In our study, the focus of chorioretinitis was localized. Some authors have noted disseminated forms of the disease [9]. Yogolelo *et al.* described a case of a rare binocular form in a 72-year-old Congolese patient in Lubumbashi in 2015 [10].

4. Conclusion

Active toxoplasmic chorioretinitis is a condition linked to multiple attacks of toxoplasmosis. Its severity depends on the location. Fundus examination makes it possible to detect forms of poor visual prognosis, particularly in papillary and macular locations. Delayed diagnosis and treatment increase the risk of visual aftereffects. Treatment must be initiated urgently in order to preserve the visual function of the affected eye.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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