

# Atypical chorioretinitis by toxoplasma

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## Abstract

**Introduction:** Atypical chorioretinitis due to toxoplasmosis manifests as extensive areas of chorioretinitis without adjacent pigmented lesions.

**Objectives:** A retrospective analysis of eight eyes of six patients affected by atypical chorioretinitis was performed, analyzing the clinical presentation and treatment.

**Methods:** Age, sex, bilaterality, primary lesion location, treatment received, healing time after established treatment, existence of a subsequent recurrence, and immunosuppression data are described.

**Results:** The presentation of chorioretinitis was widely distributed: Peripapillary 20%, optic papilla 12.5%, papillomacular beam 12.5%, macular lesion 12.5%, temporal arches 20%. Nevertheless, the most frequent presentation was as peripheral lesions in 50% of the cases. The average healing time was 131 days, with recurrence of the disease in two of the described cases. Moreover, two of the patients included in this study were immunocompromised (HIV positive) and in these two cases chorioretinitis occurred bilaterally.

**Conclusions:** Chorioretinitis due to toxoplasma with atypical presentation usually occurs in patients below 50 years of age. Moreover, in this study patients who presented bilaterally presentation of the disease were immunocompromised individuals.

## Introduction

Ocular toxoplasmosis is the most common cause of infectious chorioretinitis. The usual presentation consists of a focal lesion of retinitis close to a lesion pigmented by previous activity [1,2].

Occasionally the presentation of the disease may be atypical, manifesting as extensive areas of necrosis or chorioretinitis without adjacent pigmentary lesions even in both eyes. This fact often leads to difficult diagnosis, leading to confusion with other causes of chorioretinitis and consequently to a delay in treatment or the beginning of an inadequate treatment since it can be misdiagnosed as other pathologies such as herpetic ones [3-10].

The characteristics of atypical ocular toxoplasmosis can give an idea of the mechanisms of the disease [11]. Several specific forms of the disease have been classically described such as presence of punctate internal lesions, deep punctate lesions, large destructive lesions, partial thickness lesions affecting the internal and external layers or large areas of retinal necrosis with total thickness mostly related to acquired immunodeficiency syndrome [12-16].

Regarding immunocompetent patients, individuals usually develop groups of small retinal lesions of partial thickness or dotted external toxoplasmosis [17,18].

## Objectives

The objective of the present study was to perform a retrospective analysis of eight eyes of six patients who were admitted to the Ophthalmology service at the Hospital Universitario de Canarias

and were diagnosed with atypical chorioretinitis associated to vitritis. After performance of a systemic study for autoimmune and infectious diseases, only positivity was observed for both IgG and IgM against Toxoplasmosis. Thus, diagnosis of the patients as cases of atypical chorioretinitis due to toxoplasmosis. The lesions did not meet the classic criteria of toxoplasmosis chorioretinitis because they did not present previous typical lesions. The clinical presentation and the treatment received were also analyzed.

## Methods

Eight eyes from six clinical cases of chorioretinitis due to toxoplasmosis diagnosed after positive serology for IgG and Ig M of are presented, with no previous activity data except for one of them in which the diagnosis was delayed by atypical presentation of a maculopathy with a posterior atrophic scar. Age, sex, bilaterality, primary lesion location, treatment received, healing time after established treatment, existence of subsequent recurrence, immunological status of the patients are described in this study.

## Results

50% of the patients were women and 50% men, the average age of the patients was 37 years, the average age of presentation in the

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eye was 33.37 years, the eight eyes were affected by chorioretinitis by *Toxoplasma* (12.5%) (Figure 1a, b), one eye showed optic papilla (12.5%) (Figure 2a, b), one of them papillomacular bundle (12.5%) (Figure 3a and b), one showed a macular lesion (12.5%) (Figure 4a, b), 3 lesions in the temporal arches (37.5%) and the most frequent one was the presence of peripheral lesions present in four of the eyes included in the study (50%) (Figure 5a, b).

Regarding therapy, two patients received treatment with pyrimethamine and sulfadiazine, other two cotrimoxazole (trimethoprim-sulfamethoxazole), one a combination of clindamycin and pyrimethamine due to allergy to sulfadiazine, and another patient was only treated with oral corticosteroids. All of them were administered oral corticosteroids (Prednisone) after the third day of antiprotazoal treatment at doses of 1 mg / kg body weight per day with slow and gradual decreasing doses.

The average healing time was 131 days. In two patients, there was a recurrence of the disease after follow-up during two years, with no relation between the administered drug and the recurrence, since one case received cotrimoxazole and the other, the combination of



**Figure 2a.** A 49-year-old male, HIV positive, presenting papillary involvement with neuroretinitis in RE.



**Figure 1a.** A 29-year-old female with debut of peripapillary chorioretinitis injury with associated peripapillitis and mild vitritis.



**Figure 1b.** Retinography of the patient after treatment with clindamycin, pyrimethamine and oral corticosteroids.



**Figure 2b.** Retinography eight months later showing residual papillary involvement with residual retinovitreal fibrosis and secondary optic atrophy

pyrimethamine and sulfadiazine. The time after end of treatment and relapse for the first case was 120 days and for the second case, 360 days. Moreover, two patients were immunocompromised (HIV positive) and in these two cases chorioretinitis occurred bilaterally.

## Conclusion

Retinochoroiditis due to *Toxoplasma* with atypical presentation usually occurs in patients under 50 years of age, probably because of a primary infection and also because of the fact that from that age characteristic recurrences with adjacent pigmentary lesions are likely to happen [11,19]. Patients who presented the disease in this study as bilateral lesions were immunocompromised patients which is in accordance to previous studies [20]. Moreover, recurrence occurs in 25% of cases, which must be taken into account and probably it should be interesting to consider a long-term maintenance prophylaxis previously recommended by other authors [19,21].

There is no predilection for any retinal area for the primary involvement in cases of atypical toxoplasmosis. Although in our study, the most frequent presentation was located in the arches. Nevertheless, and in accordance with other authors, no clear relationship was





**Figure 3a.** Retinography of a 17-year-old woman with primary involvement of toxoplasmosis affecting the upper perimacular area and upper papillomacular bundle.



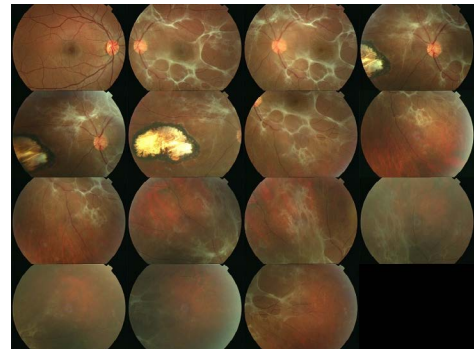
**Figure 3b.** Retinography after inactivation of the chorioretinal lesion after treatment with sulphadiazine, pyrimethamine and prednisone at six months.



**Figure 4a.** Retinography of an 18-year-old male patient with primary involvement in a macular area with associated vitritis. Treatment with cotrimoxazole and prednisone was prescribed.



**Figure 4b.** Extensive inactive macular chorioretinal lesion with residual papillary fibrosis three months later.



**Figure 5a.** A 39-year-old woman with large inactive peripheral chorioretinal lesion and large residual vitreous fibrosis due to the existing large preexisting activity.



**Figure 5b.** Retinography of a 44-year-old HIV-positive male, who performs bilaterally, in RE, peripheral chorioretinal lesions are visualized, and another that affects the lower peripapillary level inactive after treatment with pyrimethamine, sulfadiazine and prednisone.

established [19]. Moreover, there is no apparent difference between treatment with cotrimoxazole and a combination of pyrimethamine with sulfadiazine [22,23]. However, it is important to incorporate corticosteroids into the treatment at 48 hours of the initiation of antiprotazoal therapy in order to avoid tissue destruction due to the inflammatory process. Regarding prophylaxis, it is performed in relation to the intermittent administration of cotrimoxazole to avoid recurrence of the disease with a maintenance of the same during at least 20 months [21]. Although a short series of cases is reported in this study, atypical presentation of toxoplasmosis occurs more frequently in immunocompromised patients but occasionally occurs in immunocompetent patients and thus, this observation must be taken into account in Ophthalmology.

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