

When Herpes Labialis Masks Ocular Toxoplasmosis: A Case Report

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ABSTRACT

Case Report

We report the case of a 26-year-old female patient with no known medical history, who presented with a sudden unilateral decrease in visual acuity, concomitant with an outbreak of oral aphthous ulcers.

Ophthalmologic examination revealed a picture of posterior uveitis, characterized by papillitis with a chorioretinal lesion, vasculitis and macular edema.

An immunological and infectious workup showed herpes serology with positive IgM and negative IgG, suggesting a primary infection; toxoplasmosis serology revealed positive IgG and negative IgM, in favor of a past infection. In addition, HIV, syphilis and CMV serologies were negative. The immunological assessment was also negative, ruling out an autoimmune etiology such as Sjögren's syndrome.

Given the positive herpes IgM serology and a recent episode of labial herpes, herpetic retinitis was initially suspected and intravenous acyclovir treatment was initiated.

However, the clinical course under antiviral therapy showed no significant improvement, either in visual acuity or on fundus examination, which cast doubt on the diagnosis of herpetic retinitis.

Faced with this therapeutic impasse, a PCR analysis of the aqueous humor was performed and quickly confirmed a parasitic etiology.

This case highlights the importance of molecular biology techniques such as PCR in the diagnosis of atypical cases of posterior uveitis. Aqueous humor PCR is essential for avoiding inappropriate treatment, even in the presence of misleading clinical signs such as labial herpes.

Keywords: Posterior uveitis; Ocular toxoplasmosis; Herpetic retinitis; PCR; Papillitis; Diagnostic error

Introduction

Posterior uveitis is a common cause of visual impairment in immunocompetent individuals¹⁻³. The most frequent etiology is ocular toxoplasmosis, which accounts for approximately 33% of infectious posterior uveitis cases⁵⁻⁸.

Herpes viruses (HSV and VZV), on the other hand, are more commonly associated with anterior segment involvement. However, cases of HSV-related posterior uveitis have recently been reported⁹.

We report the case of a patient in whom the occurrence of herpes labialis initially and mistakenly directed the diagnosis toward herpetic retinitis, thereby delaying the identification of the causative pathogen and the initiation of appropriate treatment.

Case Report

A 26-year-old woman with no significant past medical history presented with a sudden, profound, unilateral decrease in visual acuity occurring concomitantly with the onset of herpes labialis.

Ophthalmological examination of the affected eye revealed a visual acuity reduced to counting fingers at 2 meters. Anterior segment examination was unremarkable. Fundus examination demonstrated posterior uveitis characterized by papillitis, an active chorioretinal lesion, retinal vasculitis and macular edema, which was confirmed by optical coherence tomography (OCT).

The fellow eye examination was entirely normal.

Laboratory investigations were performed. Herpetic serology revealed positive IgM and negative IgG antibodies, suggestive of a primary infection. Toxoplasmosis serology showed positive IgG and negative IgM antibodies, consistent with a previous infection. Additional infectious workup, including HIV, syphilis and CMV serologies, was negative.

The immunological assessment (antinuclear antibodies, anti-SSA, anti-SSB antibodies, etc.) was also negative, excluding an underlying autoimmune condition such as Sjögren's syndrome.

Based on these findings and the concomitant occurrence of herpes labialis, an initial diagnosis of herpetic retinitis was made and intravenous acyclovir therapy was initiated.

Due to the absence of both functional and clinical improvement under antiviral treatment, polymerase chain reaction (PCR) analysis of the aqueous humor was performed and confirmed ocular toxoplasmosis as the causative etiology.

Specific anti-toxoplasma therapy consisting of pyrimethamine, sulfadiazine and folinic acid, combined with systemic corticosteroids, was subsequently initiated. This resulted in a remarkable visual recovery, with visual acuity improving to 8/10 and progressive regression of retinal lesions, leaving only a residual chorioretinal scar.

Discussion

Posterior uveitis encompasses a heterogeneous group of inflammatory disorders that may severely compromise visual prognosis if diagnosis and treatment are delayed. Infectious etiologies predominate, particularly ocular toxoplasmosis, which remains the leading cause of infectious posterior uveitis in immunocompetent patients^{5,6}.

The classic presentation of ocular toxoplasmosis consists of a necrotizing retinochoroiditis lesion adjacent to a pre-existing chorioretinal scar, associated with varying degrees of vitritis. However, atypical presentations are well recognized and may include optic disc involvement, retinal vasculitis and macular edema, as observed in our patient, making diagnosis more challenging^{6,7}. Such unusual manifestations may mimic other infectious causes, particularly viral infections.

Herpetic infections caused by HSV and VZV are classically associated with anterior uveitis but may also present with severe posterior segment involvement, notably acute retinal necrosis (ARN). These cases are typically characterized by rapidly progressive peripheral retinal necrosis, occlusive retinal vasculitis and marked intraocular inflammation⁹. Nevertheless, early-stage or incomplete presentations can be misleading.

In our case, the concomitant presence of herpes labialis and positive HSV IgM serology strongly suggested a viral etiology. However, this interpretation highlights the limitations of serological testing in the diagnosis of infectious uveitis. Herpetic serology has limited diagnostic value due to the high seroprevalence of herpes viruses in the general population and the possibility of false-positive IgM results related to nonspecific viral reactivation or cross-reactivity^{1,10}.

Conversely, PCR analysis of intraocular samples (aqueous humor or vitreous fluid) has become a reference diagnostic tool in infectious uveitis. It enables rapid, sensitive and specific detection of major intraocular pathogens, including *Toxoplasma gondii*, HSV, VZV and CMV².

Recent advances, particularly multiplex PCR assays, allow simultaneous identification of multiple pathogens from a small sample volume, which is especially valuable in atypical or ambiguous clinical presentations³.

In the present case, aqueous humor PCR rapidly corrected the diagnosis in favor of ocular toxoplasmosis, preventing the continuation of inappropriate antiviral therapy. This approach is consistent with current recommendations advocating molecular analysis whenever diagnostic uncertainty exists or when clinical evolution remains unfavorable despite empirical treatment⁴.

This case highlights several important points: the clinical variability of ocular toxoplasmosis, which may mimic other infectious etiologies; the limitations of isolated serological findings in guiding diagnosis; and the pivotal role of intraocular PCR in establishing a rapid and reliable etiological diagnosis, thereby enabling appropriate treatment and improving visual outcomes.

Conclusion

Atypical posterior uveitis remains a significant diagnostic challenge, particularly when concomitant clinical findings may misleadingly suggest a specific etiology. This case illustrates the potential for diagnostic error when serological data are interpreted in isolation, especially in the context of herpetic infections.

Ocular toxoplasmosis should remain a diagnostic consideration even in the absence of a typical clinical presentation because of its broad spectrum of manifestations. Lack of improvement under empirical treatment should prompt rapid reassessment of the diagnosis.

PCR analysis of aqueous humor has become an essential diagnostic tool in posterior uveitis of uncertain etiology. Early use of this technique facilitates prompt therapeutic decision-making, avoids inappropriate treatments and significantly improves visual prognosis.

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