

Case Report

Bartonella Henselae with Coinfection Toxoplasma Gondii Associated with Neuroretinitis.

Fermin Silva Cayatopa, MD¹ Robinson Barrientos Ortiz, MD* Ana Luisa González Méndez, MD¹

1. Department of Ophthalmology, Research Department Clínica La Luz, Lima, Peru.

***Corresponding Author: Robinson Barrientos** Department of Ophthalmology, Research Department Clínica La Luz, Av. Arequipa 1148, Lima, Peru.

Received Date: March 15, 2021

Publication Date: April 01, 2021

Abstract

Summary

Purpose: To report a case of infection by *Bartonella Henselae* plus co-infection by *Toxoplasma Gondii*.

Design: Observational case report.

Methods: Review of the clinical, laboratory, photographic and angiographic records of a patient with cat scratch disease associated with inactive ocular toxoplasmosis.

Results: A 29-year-old woman with 20/70 best-corrected visual acuity in the right eye and 20/50 in the left eye due to optic nerve edema and bilateral macular serous retinal detachment believed to be the result of infection by *Bartonella Henselae* plus *Toxoplasma Gondii* co-infection. Sixty days later, she developed diffuse serous retinal detachments involving the posterior pole.

Conclusion: Ocular complications associated with *Bartonella Henselae* plus *Toxoplasma Gondii* infection can include serous retinal detachment, papillitis, and macular star.

Key words: *Bartonella Henselae*, *Toxoplasma Gondii*, neuroretinitis, serous retinal detachment, papillitis, macular star.

Introduction

Cat scratch disease associated with inactive ocular Toxoplasmosis is a generally benign, self-limited acute febrile disease, accompanied by regional lymphadenopathy. The ophthalmic manifestations of the diseases are commonly benign and self-limited, and visual recovery is usually excellent. (1,2,3) We present a case in which cat-scratch disease was accompanied by neuro retinitis associated with ocular toxoplasmosis co-infection.

Case Report

A 29-year-old woman from Arequipa- Peru presented with acute painless vision loss in the right eye; with a visual acuity of RE 20/70 and LE 20/20. Fifteen days prior, she had been ill and noted painful cervical and pre-atrial lymphadenopathy predominantly on the right side. On examination, she had an afferent pupillary defect and unilateral optic disc edema.

Anteroposterior and lateral chest X-ray images along with MRI of the head and orbits were normal, as were certain laboratory studies, including blood chemistry; angiotensin-converting enzyme and lysozyme; rapid plasma reagin (RPR); skin test titrations of purified protein derivative (PPD) and Lyme titer. The erythrocyte sedimentation rate was 35 mm / h, with values incomplete blood count with differential with leukocytosis of 15,300 mm³ with neutrophilia 70%. A presumptive diagnosis of optic neuritis of an etiology to be specified was made.

The reported case complied with the Declaration of Helsinki. The ethics committee and the institutional review board of Clínica La Luz approved the reported case, to have the case details published. The patient gave his informed consent in writing for the details of the case and the images presented to be published. The patient returned fifteen days later with a reduced vision of 20/200 in the RE and 20/50 in the LE and with the development of diffuse serous retinal detachments predominantly in the LE (**Figures 1 A-B**).



Figure 1- A. Macular serous retinal detachment associated with papillitis.

Figure 1-B. Diffuse serous retinal detachment associated with papillitis

Later, the patient herself recalled being scratched by a cat for several months before. Then serologies of *Toxoplasma Gondii* and *Bartonella Henselae* were requested. *Toxoplasma Gondii* antibodies established IgG values of 1:64, but the IgG titer of *B. henselae* was 1: 148. Doxycycline 100 mg twice a day and Azithromycin 500 mg once a day each were prescribed orally to treat cat scratch disease; for six weeks. Associating Trimethoprim/sulfamethoxazole 800/160 mg twice a day orally for one month as



maintenance therapy to *Toxoplasma Gondii* coinfection, despite not finding presumable objective clinical signs of toxoplasmosis disease foci, prednisone 1 mg/kg/day once a day orally from the third day and after ruling out active TB, syphilis and toxoplasmosis infections.

One month later, the patient required prednisolone acetate 1% and dorzolamide 2% timolol 0.5% topical, both twice a day associated with ketorolac 0.5% topical three times a day plus acetazolamide 250 mg orally once a day, to maintain the control of intraocular pressure to 22 mm Hg and contribute to the reabsorption of the subretinal fluid. A PASCAL Pattern Scanning Laser Treatment in 532 nm and 577 nm wavelengths, Topcon® is suggested due to the lack of clinical improvement and visual needs due to work activities in the area of subfoveal serous retinal detachment, after an angiographic study in which focal peripapillary leaks are observed with areas of hyperfluorescence due to accumulation in the macular and peripapillary region. **(Figure 2 A-B)**

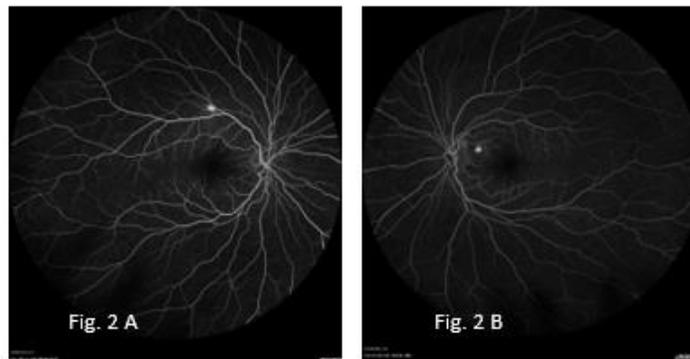


Figure 2A-B. Fluorescein angiography reveal focal peripapillary leaks are observed with areas of hyper fluorescence due to accumulation in the macular and peripapillary region.

After eight months of follow-up, the patient persisted with the symptoms of dyschromatopsia, myodesopsia, and blurred vision in the RE with apparent improvement in the LE, she presented BCVA in RE 20/40 and LE 20/20, IOP OD 17 mm Hg LE 15 mmHg, normal anterior segment. Right fundus, partially resolved serous macular retinal detachment, and papillitis in LE reveals the persistence of papillitis with peripapillary subretinal fluid and pigmentary changes in the macular area **(Figures 3 A-B)**.

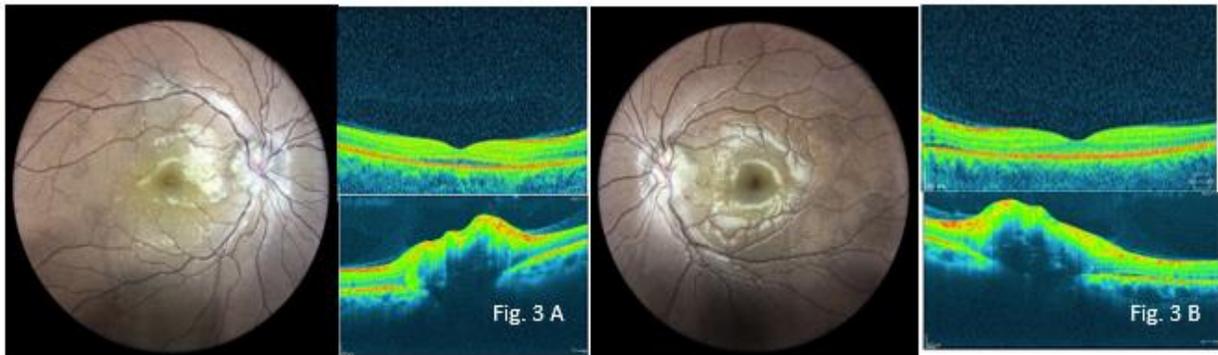


Figure 3- A. Partially resolved serous macular retinal detachment and papillitis

Figure 3 -B. Persistence of papillitis with peripapillary subretinal fluid and pigmentary changes in the macular area.

Discussion

Cat scratch disease is subacute regional lymphadenitis, most commonly caused by the organism *B. henselae*; it is most often benign and self-limited. History of a scratch or usually close contact with a feline. Neuroretinitis and conjunctivitis are widely recognized as the most common ophthalmic manifestations of *B. henselae* infection. (4,5)

Although visual recovery in cat scratch disease is usually excellent, moderate vision loss has been reported in patients with the development of cystoid macular edema and choroidal neovascularization.⁶ In this setting, vessels leak due to exaggerated vascular permeability with a tendency to develop multiple foci of serous retinal detachments close to areas of chorioretinal inflammation. Many antimicrobials have been used to treat neuroretinitis in conjunction with antiangiogenic therapy and/or macular argon laser.

Doxycycline and azithromycin are assumed to have superior penetration of the central nervous system and eye. (7) Whether antimicrobial treatment against *B. henselae* alters the course or severity of neuroretinitis remains unknown. (8) *Bartonella* should always be considered in cases where a nerve is swollen and history of ipsilateral cervical and preauricular adenopathy.

Although cat scratch disease is usually benign and self-limited with excellent visual recovery, this case illustrates that serous retinal detachments in macular involvement that accompany neuroretinitis can cause severe and permanent visual loss and morbidity. A timely follow-up of the case will determine the



association of other therapeutic strategies for a favorable visual improvement. (9,10)

The clinical association in terms of toxoplasma Gondii coinfection despite sharing the same infecting carrier is rare, however, the clinical association prevails over complementary studies that despite having positive results for toxoplasmosis immunoglobulin G serology, no inflammatory foci were evidenced of chorioretinitis or retinochoroiditis to the ocular fundus, considering to rule out the wide spectrum of differential diagnoses that can develop neuroretinitis as the initial clinical picture.

Acknowledgments

The authors thank the patient for his acceptance with the informed consent, to carry out the realization of this case.

Disclosure

The authors report no conflicts of interest in this work.

References:

1. Windsor JJ: Cat scratch disease: “epidemiology, etiology, and treatment”. *Br J Biomed Sci* 2001; 58: pp. 101-110.
2. Ormerod LD and Dailey JP: “Ocular manifestations of cat scratch disease”. *Curr Opin Ophthalmol* 1999; 10: pp. 209-216.
3. Solley WA, Martin DF, Newman NJ, et al: “Cat scratch disease: manifestations of the posterior segment”. *Ophthalmology* 1999; 106: pp. 1546-1553.
4. Zacchei AC, Newman NJ and Sternberg P: “serous retinal detachment from the macula associated with cat scratch disease”. *Am J Ophthalmol* 1995; 120: pp. 796-797.
5. Cunningham ET and Koehler JE: “ocular bartonellosis”. *Am J Ophthalmol* 2000; 130: pp. 340-349.
6. Suhler EB, Lauer AK and Rosenbaum JT: “Prevalence of serological evidence of cat scratch disease in patients with neuroretinitis”. *Ophthalmology* 2000; 107: pp. 871-876.
7. Curi AL, Machado D, Heringer G, et al: “Cat scratch disease: ocular manifestations and visual result”.



Int Ophthalmol 2010; 30: pp. 553-558.

8. Mabra D, Yeh S, Shantha JG. “Ocular manifestations of bartonellosis”. *Curr OpinOphthalmol*. 2018 November; 29 (6): 582-587. doi: 10.1097 / ICU.0000000000000522. Revision. PubMed PMID: 30124532.

9, Chi SL, Stinnett S, Eggenberger E, et al. “Clinical characteristics in 53 patients with cat scratch optic neuropathy”. *Ophthalmology* 2012; 119: 183-187.

10. Batts and Demers, 2004. Batts S. and Demers DM: “spectrum and treatment of cat scratch disease”. *Pediatr Infect Dis J* 2004; 23: pp. 1161.

Volume 2 Issue 3 April 2021

©All rights reserved by Robinson Barrientos