



Chorioretinitis as a Rare Presentation of Cat Scratch Disease: A Case Report

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Abstract

Objective: To report a rare presentation of Cat-scratch disease

Design: Case report

Result: A 12-year-old female was referred in our center for management of a chorioretinopathy. Ophthalmologic examination revealed unilateral chorioretinal scar with subretinal detachment. Laboratory evaluation revealed IgG antibodies for *Bartonella henselae*. Treatment with oral azithromycin led to regression of lesions, resolution of subretinal detachment, and improvement in visual acuity.

Conclusion: Chorioretinal lesions in Cat-Scratch disease are rare presentation. Serology investigation is important to confirm the diagnosis. Appropriate treatment may improve the outcome.

Keywords

Bartonella henselae, Cat-scratch disease, Chorioretinitis, Toxoplasmosis

(Pyriméthamine, sulfadiazine, folinic acid and Corticoid orally). Faced with this aggravation, clinical and laboratory reassessment has been prescribed.

The detailed patient interview found repeated contacts with cats and a low-grade fever six weeks ago. Ophthalmologic examination revealed unilateral chorioretinal scar with sub retinal detachment without hyalitis (Figure 1). The anterior segment was calm and the ocular tension was normal.

Fluorescein Angiography sequences showed a hyper auto fluorescent scar, which take progressively contrast enhancement during the indo cyanine green angiography.

Introduction

Cat-scratch disease is an infectious disease caused by *Bartonella henselae*. The infection is transmitted to humans by cats or dogs [1]. Most of infected cats are asymptomatic whereas dogs are severely impaired (Asthenia, cachexia, endocarditis, death) [2]. The most common human form of the cat-scratch disease is a benign flu-like syndrome or the presence of an inoculation vesiculopustule, followed by persistent adenopathys (2-4 months). The usual clinical signs of ocular involvement are oculo glandular syndrome of Parinaud (granulomatous conjunctivitis followed by adjacent preauricular adenopathy) and Leber's stellate neuroretinitis [2,3]. The diagnostic of cat-scratch disease is often unknown especially in ophthalmological symptoms.

We report an atypical case of Cat-scratch disease presented as chorioretinitis.

Case Report

A 12-year-old female was referred to our center for deteriorating eyesight secondary to a retinochoroiditis: right eye 4/10 Parinaud 4 (left eye, 10/10 Parinaud 2) since one month. She was previously treated for toxoplasmic retinochoroiditis since 3 weeks



Figure 1: Right eye's fundus photography. Deeply pigmented paracentral choroiditis scar with a sub-retinal detachment, without adjacent hyalitis.

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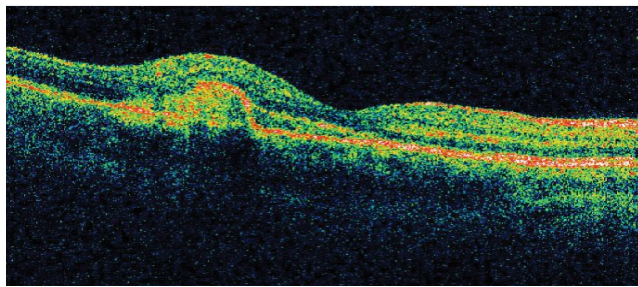


Figure 2: Optic Coherence Tomography through the infected site. Sub-retinal thickening.

Optical Coherence Tomography (OCT) found a subretinal detachment and an infiltration at the site of chorio-retinal scar (Figure 2).

A complete biological work-up was done. The blood count was normal despite a little hyperleucocytosis. She had a negative toxoplasmic serology (repeated at two times with an interval of 1 month) that definitively excluded the former diagnosis of toxoplasmic retinochoroiditis, an old immunity against Herpes Simplex virus, Varicella zoster virus and cytomegalovirus, and a vaccinal immunity against hepatitis B virus. The serologies testing were negative for Epstein-Barr Virus (EBV), Lyme's disease, Human Immunodeficiency Virus (HIV) and leptospirosis. The Antinuclear antibodies research was positive on 1/80 with a speckled appearance. The rest of the blood sample was non-contributory benefits.

The Polymerase Chain Reactive (PCR) on aqueous humor didn't find neither *Toxoplasma gondii*, CMV nor HSV.

After the discovery of a large right adenopathy and a cat-scratch scar, a serology of *Bartonella henselae* was made (IgG IFI, *Bartonella henselae* strain HOUSTON 1 ATCC 49882), and was positive (1/64); confirming the diagnosis with a specificity of 87% and a sensitivity of 78%.

The retrospective interview gave us to discover that, the patient took in a sick kitten two months ago, without the knowledge of her parents, that's why we didn't know this information previously. The kitten scratched her several times, and died few days after his coming.

So a treatment of Azithromycin 250mg per day was prescribed during three weeks with a stop of anti-toxoplasmic's treatment, especially the orally Corticoid. The patient had completely recovered visual acuity (10/10 Parinaud 2), but it remained a paracentral scotoma after 6 months disease's evolution. The serology of *Bartonella henselae* went progressively negative, during the following three months (value <1/8).

Discussion

The eye is the non-lymphatic's organ which is the mostly affected during the cat-scratch disease [3]. The Parinaud oculoglandular syndrome, is the most common ocular complication, and affects about 5% of symptomatic patients. Their main complaints are redness and foreign body sensation. The conjunctival damage may extend to necrosis or ulceration. A preauricular adenopathy is frequently found [4-6].

On other classical form of the disease, but rather unusual is the neuroretinitis. It presents as a papillary edema with subretinal detachment and sometimes followed by a macular star 2 or 4 weeks later [7]. It represents approximately 1 to 2% of patients with ocular *Bartonella* [8]. Simultaneous and consecutive forms of Parinaud oculoglandular syndrome and neuroretinitis are described [9]. Sometimes multifocal retinitis or choroiditis scars are associated with the neuroretinitis. A retinochoroiditis scar without papillary edema, like in our case, is a very unusual form of the disease, and mostly found in immunocompromised patients [10]. Contrary to our case, there is frequently a hyalitis and an anterior chamber reaction. It can be complicated by venous or arterial occlusion and

by a sub-retinal detachment [11]. The principle differential diagnosis of retinochoroiditis is ocular toxoplasmosis. Toxoplasmosis was excluded in our case because of negative serology.

Moreover, as demonstrated in our case, the detection of antibodies against *Bartonella henselae* is the easier technique to confirm the disease. The serology has however some drawbacks: (i) the antibodies titer depends of antigen's preparation (bacteria growth on agar media or cell culture), (ii) about 10% of patients suffering from cat-scratch disease have no detectable antibodies level (false-negative), (iii) different Bartonellosis strains present antigenic variations, (iv) there are several antigenic cross-reactivities between *Bartonella* and others bacteria like *Coxiella burnetii*, *Chlamydia trachomatis*, *Chlamydia pneumoniae* and *Chlamydia psittaci*. However, the sensitivity and the specificity of those techniques reach 90% in immunocompetent patients [12]. The PCR reactions have made a lot of progress in the diagnosis of meningeal forms of the disease, but are still not available in ocular forms [13].

Nowadays, there is no recommendation for the treatment of ocular forms of cat-scratch disease. In our case, we prescribed azithromycin during four weeks, as recommended for neuroretinitis or lymphangiopathy during cat-scratch disease. No corticotherapy was prescribed. This treatment seems to improve the local inflammation, leads to a negativation of *Bartonella henselae* serology and shows an excellent tolerance. Finally, this patient only suffered of a paracentral scotoma. In most case of cat-scratch disease, the prognosis is good when an early diagnosis is made. This highlights once again the need for rapid biological work-up including *Bartonella henselae* serology in case of atypical chorioretinitis.

Conclusion

Chorioretinal lesions in Cat-Scratch disease are rare presentation. Even the most frequently evoked diagnosis is ocular toxoplasmosis, ophthalmologist should think about cat-scratch disease in front of atypical evolution. Serology investigation is important and rather easy to confirm the diagnosis. Appropriate treatment may improve the outcome. Azithromycin, for an extended period seems to be an interesting therapeutic opportunity.

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