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CASE REPORT

Cat Scratch Disease causing Parinaud Syndrome: case report

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Abstract

Introduction: Cat Scratch Disease (CSD) in peditria is a disease of acute presentation, whose association with Parinauds syndrome is a rare event. **Objective:** To report a case of a patient with CSD that progressed to Parinauds syndrome. **Case report:** Preschooler, female, arrives at the emergency room with a report of edema in the left eye 2 days ago. On physical examination, the affected region had edema, erythema with difficulty opening the ipsilateral eye associated with measured fever and headache that ceased with the use of analgesics. With hospitalization and prescription of antibiotic therapy, there was significant remission of the condition. **Conclusion:** Improving knowledge about the manifestations of infection by *Bartonella henselae* and its complications is necessary for a better approach to patients.

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INTRODUCTION

Cat scratch disease (CSD) was initially described by Henri Parinaud in 1889, but its main etiology, *Bartonella henselae*, was only isolated in 1993.¹ Its main reservoir is cats and its main vector is fleas, where transmission occurs mainly through bites or scratches from these young and generally asymptomatic animals.^{1,2}

Its clinical presentation mainly consists of papules at the site of infection with benign remission and lymphadenopathy near the site of infection.³ In rare cases, this bacterium can infect the ocular region, causing Parinaud's Oculoglandular Syndrome.⁴

Although it is the main cause of chronic childhood lymphadenopathy in the United States, there are rare case reports in Brazil, making its diagnosis more difficult.⁵

CASE DESCRIPTION

Patient L.M.N.G, 3 years and 9 months old, white, from Campo Grande - MS, arrived at the Hospital Sociedade Beneficente Santa Casa de Campo Grande with the main complaint of "Swelling in the left eye for two days". The patient had a history of erythema and slight eyelid edema on the left side for 2 days, with difficulty opening the ipsilateral eye. She reported, associated with the condition, a fever reaching 39.5°C and frontal headache, symptoms that ceased with the use of Dipyrone. The condition was not accompanied by local pain, itching or ocular discharge. She denied having cats at home, but lives with other children who have these pets and spends her leisure time in a children's playground with an open-air sandbox. The patient was admitted to the Hospital Sociedade Beneficente Santa Casa de Campo Grande and was evaluated by the Ophthalmology team, who suggested a diagnostic hypothesis of Cat Scratch Disease (CSD), presenting with Parinaud's Oculoglandular Syndrome, excluding differential diagnoses, such as Conjunctivitis and Periorbital Cellulitis.

A Cranial and Orbital Tomography was performed, and came back normal. Azithromycin was started at a dose of 10 mg/kg/day and general care was provided. On the third day of antibiotics, the patient showed significant improvement in the condition, with full eye opening, with only mild erythema remaining on physical examination.

Due to the improvement in the condition and the child remaining afebrile, the patient was discharged from the hospital to complete antibiotic therapy at home and was advised to seek an ophthalmologist's office for follow-up.

DISCUSSION

The patient in question developed left eyelid edema and was referred to a tertiary service with a diagnostic hypothesis of periorbital cellulitis. During the investigation, after a cranial tomography scan and expert opinion (ophthalmology),

this hypothesis was ruled out and the possibility of Cat Scratch Disease was raised, with progression to Parinaud's Oculoglandular Syndrome.

This Syndrome presents with fever, eyelid edema and ipsilateral lymphadenopathy. Upon arrival at the Hospital, the patient had no eye opening on the left. CSD generally responds well to the use of Doxycycline, but this medication is contraindicated in children under 8 years of age. In this case, it was decided to start with another macrolide, Azithromycin at a dose of 10 mg/kg/day and maintained for 5 days, 3 days during hospitalization and another 2 days at home.

On the third day of antibiotics, already showing a good response to the proposed treatment, the patient progressed favorably, with full eye opening, without reporting pain - she only had a slight ecchymosis on the left upper eyelid.

Parinaud's Oculoglandular Syndrome is defined as a self-limiting conjunctivitis that may be associated with preauricular lymphadenopathy and low fever. It may present with neurological symptoms such as meningoencephalitis, meningitis, neuroretinitis, and encephalopathy may manifest as persistent headaches or seizures. The most common condition is papilledema associated with macular exudation, causing stellar retinitis. In recent studies, it has been shown to be one of the causes of uveitis and *B. henselae*, along with *B. grahamii* and *B. quintana*. This uveitis can be granulomatous or non-granulomatous.⁶

In addition to a complete history and physical examination, serological testing using indirect immunofluorescence (IFA) and enzyme-linked immunosorbent assay (ELISA) are generally the pillars for an early diagnosis of Parinaud's oculoglandular syndrome and cat-scratch disease.⁷

The prognosis of the disease tends to be limited in most cases, with most cases lasting approximately 5-7 days, which was similar to the present case, where we observed improvement in clinical signs after 3 days of antibiotic therapy. There are reports of this disease lasting up to 2 years, some cases of inadequate treatment and permanent eye damage in cases of absence of treatment.⁷

As was done with the patient in the report, the first line of drug treatment for Parinaud's oculoglandular syndrome, which is caused by *Barthionella Henselae*, is Azithromycin at a dose of 10 mg/kg/day on the first day, followed by 5 mg/kg/day for 4 days in children weighing less than 45.5 kg; in those weighing more than 45.5 kg or adults, the dose is 500 mg on the first day, followed by 250 mg for 4 days. In the report in question, the dose of 10 mg/kg/day was maintained for 5 days, with a good clinical response. In immunocompromised patients, Doxycycline at a dose of 100 mg may be chosen. In general, the treatment of oculoglandular syndrome due to cat scratch disease involves the use of macrolides, quinolones, trimethoprim/sulfamethoxazole as an alternative treatment, and in some rare cases, the use of amoxicillin-clavulanate in combination with doxycycline has proven effective.⁷

In his report, SOUZA⁸ shows another symptom that can affect some cases that do not progress to oculoglandular syndrome, which is fever (global symptom) and popliteal pain. In this case, the patient was diagnosed with cellulitis for the first time, similar to the case described above, in which periorbital cellulitis was suspected. The patient was prescribed cephalexin for 10 days and anti-inflammatories. In this case, the only improvement was the fever. A difference with this case is the direct contact of the child with 18 cats. Without improvement in the patient's condition, he sought new care. Ceftriaxone and Clindamycin were started due to lack of clinical improvement. Serology for *Barthionella* was requested, which was positive, but the result was released after 13 days. The patient had persistent fever and on the ninth day developed epigastric pain, so the antibiotic therapy was extended to Vancomycin 40 mg/kg/day and piperacillin + tazobactam (tazocin) 300 mg/kg/day. After 2 days of the regimen, with the positivity for *Barthionella*, clarithromycin 15 mg/kg/day and Rifampicin 600 mg/kg/day were started, showing clinical and laboratory improvement. The patient was discharged after 26 days and with medications to complete 15 days of treatment. Therefore, knowing that this is a self-limiting disease with benign characteristics at first, the treatment is still very questionable. In the study by Drummond¹, a single double-blind study was conducted using Azithromycin in patients with uncomplicated CSD, and within 30 days, patients showed excellent clinical improvement compared to placebo.

FINAL REMARKS

In this report, we present a case of cat scratch disease associated with a rare Parinaud syndrome contracted indirectly from a feline animal. Although uncommon, it is necessary to recognize it in relation to its classic clinical picture: regional

lymphadenopathy in conjunction with conjunctivitis. Currently, in the pediatric group, Azithromycin is the antibiotic of choice. When treated appropriately, its prognosis is benign, but when not recognized and treated correctly, it can leave persistent sequelae, such as blindness.

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