

SHORT COMMUNICATION

Case report

Disciforme keratitis caused by *Bartonella henselae*: an unusual ocular complication in cat scratch disease

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Cat scratch disease (CSD) is a common infectious disease, however, its association with disciforme keratitis is a previously unreported ocular complication. With the use of the 16S rDNA-PCR technique with subsequent DANN sequencing on corneal material obtained by corneal scrape we were able to identify Bartonella henselae in an unusual form of disciforme keratitis. (Eur J Ophthalmol 2000; 10: 257-8)

KEY WORDS. Keratitis, *Bartonella henselae*, Cat scratch disease, PCR

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Cat scratch disease (CSD) caused by *Bartonella henselae* is a relatively common infectious disease, typically manifested by painful regional lymphadenopathy persisting for several weeks after a cat scratch. Occasionally, infection may disseminate and produce more generalized lymphadenopathy and systemic manifestations with flu-like symptoms. Although very rare, reported ocular complications include Parinaud's oculoglandular conjunctivitis (1), anterior uveitis (2) papillitis neuroretinitis, and serous neurosensory retinal detachment (3, 4). We describe a case of CSD associated with severe disciforme keratitis. To our knowledge this is a previously unreported ocular complication of CSD.

Case Report

A 65-year-old woman was referred to us with a ten-week history of slowly progressing ulcerative keratitis of the left eye. Microscopy and diagnostic culture of conjunctival smears were unremarkable. Initially she had been treated sequentially with topical antibiotics (tobramycin and erythromycin), acyclovir ointment (3%), and corticosteroids over the previous ten weeks. Her symptoms, however, had failed to improve. When seen by us she presented a nasal injection of the conjunctiva, a disciforme keratitis with a large paracentral ulcer and both deep and superficial corneal neovascularization. The anterior chamber showed no inflammatory reaction (Fig.

1). A periauricular lymphadenopathy was observed. Her vision was reduced to hand movements and the intraocular pressure was 16 mmHg. The contralateral eye was unremarkable. On questioning, she gave a clear account of being scratched by a kitten on the left side of her neck six weeks before the onset of the keratitis. Seven days after the scratch she had suffered flu-like symptoms with fever and malaise lasting ten days.

We took a corneal scrape for microbiological diagnosis. The specimen was divided into two portions and one was used for diagnostic culture. After 48 hours of culture no bacterial or fungal organisms were found. The other portion was examined for the presence of viral (herpes simplex, varicella zoster, Epstein-Barr and adenovirus),

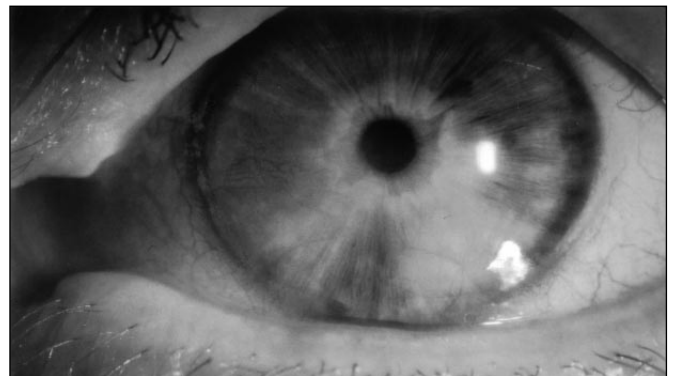


Fig. 1 - Disciforme keratitis caused by *Bartonella henselae* with paracentral ulcer, deep and superficial neovascularization and stroma clouding.

bacterial and fungal pathogens by polymerase chain reaction (PCR). Our PCR protocol has been described elsewhere (5). The specimen was clearly positive for *Bartonella henselae* and was confirmed by positive and negative controls. We also did serology tests but by then there was no further sign of *Bartonella henselae* infection.

Based on the results of the PCR we started topical treatment with cephalexin eye drops (1 drop 5 times per day) for four weeks. After this specific treatment the cornea healed with a paracentral scar and some remaining corneal neovascularization and visual acuity improved to 20/50.

Comment

Corneal infection is one of the leading causes of visual loss and it is estimated that 100,000 cases of microbial keratitis occur annually worldwide. Infections of the cornea arise from a broad spectrum of pathogens, from viruses, bacteria, and fungi to amoebae and parasites, and the different treatment regimens needed for these various pathogens mean that rapid diagnosis of the causative pathogen is of major importance.

The common investigation of presumed microbial keratitis includes microscopy and culture of conjunctival smears or, better, of material obtained by corneal scrapes. Although these standard microbiology tests identify the causative pathogen in up to 60% of case, the results are significantly compromised in cases where the

patient has received prior antibiotic treatment (6) or in which the causative pathogen is difficult - even impossible - to culture.

The development of new methods in molecular biology is leading to better diagnostic procedures in medical microbiology. PCR offers great advantages over conventional microbiological testing. The primary value of PCR is in the diagnosis of infectious diseases by detecting DNA sequences specific to infectious agents, including bacterial, viral, fungal, and parasitic organisms. Although this technique is relatively new in ophthalmology, it has proved superior in detecting small amounts of microbial DNA in extra- and intraocular specimens (7-10). The value PCR is clear in this patient with keratitis caused by *Bartonella henselae*, an unusual cause of bacterial keratitis. The correct diagnosis was initially delayed due to misdiagnosis based on the clinical course and negative diagnostic culture. Only the corneal scrape and subsequent PCR with complete identification of the intracellular gram-negative rods as the causative pathogen gave the final diagnosis and allowed us to start specific antibiotic treatment.

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