Probable transmission of *Chlamydia psittaci* from a macaw to a cat

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- In the United States, chlamydiosis affects 15 to 30% of pet birds, despite treatment with chlortetracycline during quarantine.
- Chlamydial conjunctivitis in cats is characterized by serous to mucopurulent ocular discharge, blepharospasm, epiphora, and conjunctival hyperemia and edema. Topical treatment with tetracycline or erythromycin is recommended, and parenteral treatment should be initiated if other clinical signs develop.

A 5-year-old castrated male Siamese cat was examined because of unilateral ocular discharge from the left eye. The cat was kept indoors exclusively, and had not had contact with other animals from the time it was obtained as a kitten until the owner had adopted a blue and gold macaw (*Ara ararauna*) 1 month earlier. Although the cat was not known to have had physical contact with the bird, it did have access to the room where the bird was housed and could have had contact with fecal material of the bird.

Physical examination revealed moderate mucopurulent discharge, mild palpebral and conjunctival edema, and hyperemia of the left eye. The corneal epithelium was intact, as determined by fluoroscein staining. Ophthalmic ointment containing bacitracin, neomycin, polymyxin B, and 1% hydrocortisone was applied every 8 hours to the affected eye.

Five days later, clinical improvement was not evident; therefore, blood was obtained for CBC and FeLV ELISA. Samples of cells for bacteriologic culture were obtained by conjunctival scraping. Conjunctival impression smears and samples of cells from conjunctival scraping were obtained for cytologic evaluation. Examination of stained conjunctival impression smears[a] revealed numerous neutrophils, a few monocytes, and epithelial cells. Approximately a tenth of the epithelial cells contained 10-µm-diameter intracytoplasmic basophilic inclusions (Fig 1). Inclusions were confirmed to be *Chlamydia* spp by staining methanol-fixed conjunctival impression smears with Giemsa and genus-specific, fluoroscein-labeled monoclonal antibody.[b] Chlamydial organisms were isolated in McCoy cells inoculated with samples obtained by conjunctival scraping.[1] The chlamydial isolate was evaluated for sulfadiazine susceptibility and iodine staining.[1,2] The cultured organism was determined to be *C psittaci* because antimicrobial resistance to sulfadiazine was observed at concentrations of 50 to 400 µg/ml and inclusions did not stain with Lugol's iodine. Bacteria were not isolated from conjunctival samples. The CBC analysis revealed leukocytosis (12.9 × 10^3 WBC/µl; reference range, 5.5 to 19.5 × 10^3 WBC/µl), a left shift (6.6 × 10^3 band neutrophils/µl; reference range, 0 to 600 band neutrophils/µl), and eosinophilia (2.7 × 10^3 eosinophils/µl; reference range, 0 to 1,500 eosinophils/µl). The cat was negative for FeLV.[c]

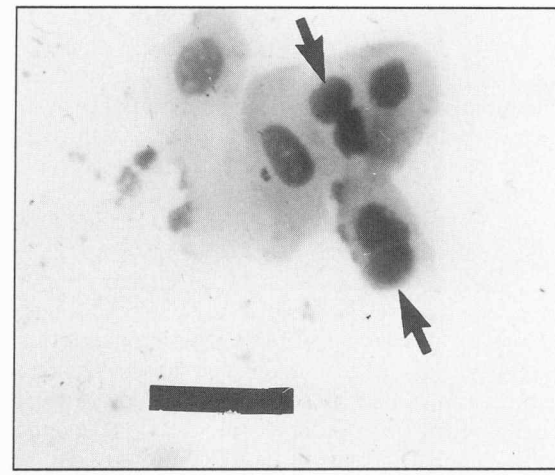

Figure 1—Photomicrograph of epithelial cells obtained by conjunctival scraping of a cat with mucopurulent ocular discharge. Notice intracytoplasmic inclusions (arrows) characteristic of Chlamydia *spp. Modified Wright-Giemsa stain; bar = 30 µm.*

Treatment was changed to administration of ophthalmic ointment containing erythromycin

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[a]Diff-Quik, Baxter Scientific Products, Miami, Fla.

[b]CHLM CC, Baxter Diagnostics Inc, Deerfield, Ill.

[c]Leukassay F II, Pitman-Moore Inc, Washington Crossing, NJ.

every 8 hours. Two days later, the cat was lethargic and anorectic. Examination revealed pyrexia and bilateral conjunctivitis. Tetracycline (20 mg/kg of body weight, PO, q 8 h) was added to the treatment regimen. After several bouts of vomiting, doxycycline (loading dose, 5 mg/kg, PO; 2.5 mg/kg, PO, in 12 h; then, 2.5 mg/kg, PO, q 24 h) was substituted for tetracycline. The cat recovered within 1 week, but treatment was continued for another 7 days after resolution of the fever and the conjunctivitis.

After chlamydiae were observed in conjunctival samples obtained from the cat, the macaw was examined and was determined to be in good health. Samples from the cloaca and feces were obtained from the macaw for culture, and *C psittaci* was recovered in McCoy cells. The bird was treated 6 times with doxycycline (75 mg/kg, IM, q 5 d). *Chlamydia* spp could not be isolated after treatment. Two months after the initial examination of the cat, the owner did not have a detectable antichlamydial antibody, as determined by the complement fixation test.

Various techniques, including molecular biologic analysis and monoclonal serotyping, have been used recently to provide information about the epidemiologic and biologic behavior of the vast number of *C psittaci* isolates.[3-5] Numerous biovars have been described. *Chlamydial psittaci* isolates from the animals in this report could not be evaluated further, because they could not be recovered on subsequent passage in tissue culture.

Chlamydial conjunctivitis in cats is characterized by unilateral conjunctival inflammation that becomes bilateral. Signs include serous to mucopurulent discharge, blepharospasm, epiphora, and conjunctival hyperemia and edema. Chemosis and pyrexia also may be detected. Topical administration of tetracycline or erythromycin is the treatment of choice. Parenteral administration of tetracycline or erythromycin should be initiated if other clinical signs are observed.

Chlamydiosis remains a considerable problem in pet birds despite preventive treatment regimens during quarantine. It is estimated that 15 to 30% of pet birds are infected with *C psittaci*.[6-8] In the United States, wild psittacine birds are released from quarantine without a determination of efficacy of treatment and whether the birds are infected or shedding chlamydiae. Failures in the treatment of chlamydiosis in pet birds, especially the large psittacines, result because of poor palatability of treated feed, short half-life of chlortetracycline, and poor absorption from the gastrointestinal tract.[9] Doxycycline was used in the animals in this report because it has better tissue penetration and a longer half-life than chlortetracycline.[10]

There are numerous reports in human beings of *C psittaci* infection that was acquired from birds[11]; however, there are few reports of transmission of chlamydiae from birds to nonhuman mammalian species.[12] Historic and epidemiologic findings in this case supported the possibility of orthozoonotic transmission[13] from the bird to the cat.

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