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NEWSLETTER

Bartonella Infections in Veterinarians and Their Staff- Update[®]

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Summer 2024

Vol. 23 Number 3

In This Issue:

The belated Summer 2024 NVL Newsletter will update the *Bartonella* spp. zoonotic occupational exposure that veterinarians and their employees face. The recent PBS program, “Doc Martin,” aired an episode on October 11, 2024, that featured a case of cat scratch disease (CSD), in a veterinarian. It was entertaining, presented good medicine and highlighted the “One Medicine/One Health” movement to a very large general audience.

Introduction:

I, Dr. Hardy, am a very enthusiastic fan of the PBS Doc Martin English TV series and I never miss an episode. It is so well written, the actors are superb, especially Martin Clunes who plays Doc Martin. The series shows the trials and tribulations of Martin Ellingham MD, a brilliant but socially challenged doctor, who moved from London to the picturesque village of Port Wenn in Cornwall. Each episode has a complex theme around the acerbic, Doc Martin character, who has a debilitating phobia for blood. He usually makes his accurate diagnoses within a minute, with mere auscultation, palpation or basic history taking. The recent episode presented a case of cat scratch disease (CSD) in a very creative way. You can access this episode, and the series, on PBS Passport and Acorn.

Doc Martin: Single White Bevy Season 9, Episode 7
Shown on PBS in New York on 10-11-2024. As usual the first few minutes of each episode introduces 3-4 subplots along with the main plot. This main plot is the illness of Doc Martin’s family dog, which he tolerates but is not so fond of. The next scene is his examination of the village veterinarian, a middle-age-women who found a lump in her right breast. After he diagnosed her tender lump, by palpation only, he says it is an inflammatory cyst, most likely CSD, and not cancer, and quickly takes an aspirate for analysis.

At the same time, at home his dog seems ill, not eating and moping, so the next day he takes the dog up the road to the “vet,” he had recently examined. The veterinarian greets Doc carrying his dog at her door with severe blepharitis, conjunctivitis and limited vision. He asked her what happened and brings his dog into her “surgery.” She palpates the dog’s abdomen and feels an object and suggests exploratory abdominal surgery, but she cannot see and tells Doc Martin that he will have to do the surgery (One Medicine).

After a minor back-and-forth protest, he agrees, and she will talk-him-through the surgery. He opens the dog’s abdomen while trying to control his blood phobia and follows her instructions to “move the spleen to the side and feel around.” Of course, right away, he finds a stick in the abdominal cavity that had penetrated the dog’s side. He removes the stick, closes the abdomen, and dashes out of the door to wretch after seeing the dog’s blood during the surgery. During the entire scene he keeps wearing his tie, tied tightly up to his neck, and his white dress shirt (he never wears medical clothes, only his suit)!

Next scene he receives the aspirate diagnostic results for the veterinarian and the diagnosis of CSD is confirmed and she tells him that she had been scratched by a cat. She knows that antibiotics will be curative. This is likely the only *Bartonella* case to have ever been presented in film or on TV.

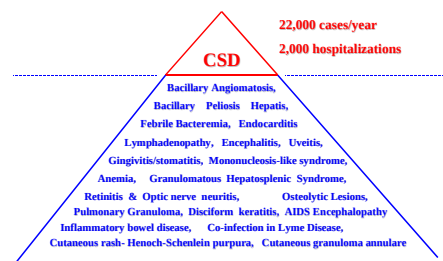
Human Bartonella Diseases

We, and others, have investigated numerous cases of feline *Bartonella*-induced human diseases during the past 24 years. Over the years, there has been the recognition that CSD is certainly not the only human *Bartonella* disease, there is a **new Bartonella paradigm- bartonellosis**.¹⁻¹⁴

Figure 1 below lists some the various *Bartonella* diseases along with the classic (CSD) in the new paradigm of **bartonellosis**.

Figure 1

Cat Scratch Disease: The Tip of the Bartonella Iceberg



The following are descriptions of some *Bartonella* zoonotic cases found in the veterinary profession.

Veterinary Hospital Employees:

Veterinarians and their employees are at higher risk for infection with *Bartonella* from cats than the general-public.^{1,11-13,14-16} In fact, one of the feline *Bartonella* species, *Bartonella clarridgeiae*, was initially isolated from a veterinarian who was bitten by a 6-week-old kitten.¹ In general, 20% of

healthy pet cats in the USA are infected with *Bartonella*.²⁻⁹ Thus, veterinarians and their staff handle numerous infected cats in their daily occupation.¹¹⁻¹⁷ A study found that 35 of the 233 (15%) veterinarians and veterinary technicians had antibody to *B. henselae*, whereas only 7 of the 155 (4.5%) control group of medical students were antibody positive.¹²

Case 1: Veterinarian: Cat Scratch Disease

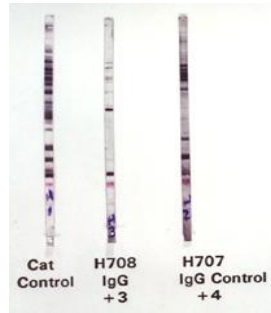
A 34-year-old female veterinarian, practicing in the New York City metropolitan area, was diagnosed with Lyme disease 13 years earlier. In March of 2003 she began to have severe headaches, fevers, enlarged lymph nodes and a stiff neck. She consulted a local physician who treated her with antibiotics which did not alleviate her symptoms. After again seeing her physician, she was told to “get married and go on a vacation.” With that recommendation in mind, she consulted an infectious disease specialist at a major medical center who was suspicious of *Bartonella* infection and cat scratch disease, even though there was no history of a cat scratch or bite. Her *Bartonella* antibody test was positive for *Bartonella quintana*. *Bartonella quintana* was not yet isolated from cats but was likely to be an additional *Bartonella* species capable of infecting pet cats. She was treated with azithromycin for 3 weeks and her symptoms promptly resolved within the first 2 weeks of therapy. We tested her serum by WB and found her to be more reactive to *Bartonella henselae* than to *Bartonella quintana*. The doctor remained healthy, **happy and single!**

Case 2: Vet Tech: Chronic Uveitis

The son of a Long Island veterinarian, who worked in his father’s practice, developed a chronic iritis and uveitis that persisted for 4 years. This was preceded by a long-term lymphadenopathy. Despite numerous diagnostic tests, the etiology of the uveitis was not determined. After reading the “Cats and *Bartonella*, Information for Cat Owners” brochure from our laboratory he called our laboratory to discuss the possibility that *Bartonella* might be the etiologic agent for his son’s uveitis. We agreed to test him, for experimental purposes only, for *Bartonella* antibodies by our western immunoblot test with the understanding that he would have our results confirmed by a licensed human *Bartonella* test. We found antibody (Figure 2) to *Bartonella* that was confirmed by his physician (*B. henselae* 1:128). Azithromycin therapy resolved the chronic uveitis within one month.

Figure 2

Western Blot for *Bartonella* Antibody



Case 3: Veterinary Office- Group-Test

Four members of a veterinary office in the New York Metropolitan area asked to be tested for *Bartonella* for research purposes. The two veterinarians were healthy, an office manager reported periodic fevers of unknown origin, and a veterinary technician complained of persistent low-grade fevers and a chronic condition. We found 1 of the healthy veterinarians and the veterinary technician to be serologically positive. Although healthy, the veterinarian was one of the strongest human WB reactors that we had detected. He remains healthy, without treatment, 6 months after the test. The veterinary technician was negative by a licensed human *Bartonella* test. A 2003 study from Japan found that approximately 4% of veterinary technicians, working 5 years or longer, had acquired cat scratch disease.¹²

Case 4: Vet Tech: Cat Scratch Disease

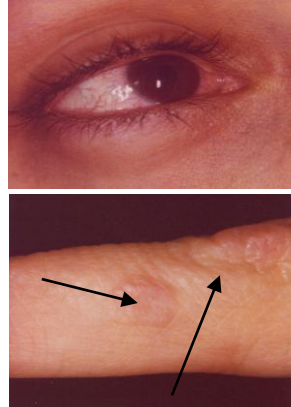
A 28-year-old female veterinary technician working in Florida was scratched on the right arm by a 3-month-old kitten. Approximately 5 weeks later she developed a painful swelling in the right axillary lymph node. The technician called our laboratory to arrange to test the kitten for *Bartonella*. In addition, we agreed to test her, for *Bartonella* antibodies by our western immunoblot FeBart® Test with the understanding that she would have our results confirmed by a licensed human *Bartonella* test. The kitten was strongly positive by WB indicating infection. The technician was positive for IgG and IgM antibodies to *Bartonella* on our western blot test. Her antibody status was confirmed and her disease resolved within 1 month without therapy.

Case 5: Vet Tech: Conjunctivitis & Skin Nodule

A 33-year-old New Jersey veterinary technician received a scratch to her right hand. Several days later two raised non-erythematous nodules occurred and persisted for several weeks. Four weeks later she developed persistent chronic conjunctivitis (Figure 3). We found her positive by western blot, however a confirmatory antibody test for *B. henselae* by her physician was negative. The reason for this discrepancy may be due to the fact that our western blot detects antibody to all 5 feline *Bartonella* spp whereas the human test was specific for antibodies to *B. henselae*. The technician may have been infected with *B. clarridgeiae* and not *B. henselae*. No azithromycin was given and the signs persisted.

Figure 3

Chronic conjunctivitis & scleral injection



Skin nodules

We presented our early *Bartonella* human study at the 1st International One Health Congress in Melbourne Australia in 2011:

Bartonella: The pet cat-human connection.

Background: *Bartonella* cause similar diseases in cats and humans and cats are the major reservoir for human infection.

Methods: With the collaboration of numerous practitioners, we have defined the *Bartonella* diseases of cats and determined the parameters and routes of zoonotic transmission from cats to people. *Bartonella* infection of cats was determined by western blot serology and 186 cat owners, who developed a *Bartonella* disease, were interviewed by telephone.

Results:

Cats: Serologic evidence of *Bartonella* infection was present in 38% of 49,921 healthy and 47% of 156,407 cats with inflammatory diseases.

Zoonotic Transmission: The offending cats were identified in 126 of 186 (68%) cases, where the route of zoonotic transmission was identified. All cats were serologically positive, 68% were healthy and 47% were kittens under 1 year of age. Routes of infection were: 57 scratches, 9 scratches/bites, 6 bites, 4 administering medication to cats, and 50 by unknown routes.

Human Disease: The *Bartonella* disease spectrum of 186 people was: 1) 151 (81%) developed classical CSD with a prodrome of lymphadenopathy (83%), fever (65%) and papule (26%) at the scratch or bite site. 106 of 151 (70%) had no sequelae after the prodrome, whereas 45 patients (24%) developed sequelae such as chorioretinitis, endocarditis, and encephalitis. In contrast, 35 (19%) patients had no prodrome and only developed sequelae. **Excluding the 26 veterinary professionals, only 9 (6%) of the 160 patients were informed of the zoonotic potential of feline *Bartonella* by their veterinarian, before their illnesses developed.**

Conclusion: Our study demonstrates that veterinarians and physicians must become more aware (one-health) of *Bartonella* in-order to prevent zoonotic transmission and to prevent delayed diagnoses which may result in permanent damage to vital organs in animals and people.

Personal Experience:

One of our laboratory's staff, who worked in a clinical setting handling cats for examinations, phlebotomy, and therapy for many years, who also performed laboratory culture studies of our *Bartonella* isolates, developed Bartonellosis. The person was positive by our western blot and confirmed by licensed *Bartonella* serological and PCR tests. Therapy was successful with azithromycin.

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***Bartonella* references can be obtained at:**
www.nlm.nih.gov and www.natvetlab.com
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