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WELCOME TO ISSUE NO.2 OF THE ADVANCED VETERINARY MEDICINE NEWSLETTER.



AVM offers mobile board-certified veterinary expertise that cares for pets, collaborates with colleagues, and supports veterinary practices

AVM Vacation Notice:

Dr. Jeff Toll will be unavailable the week of June 13th while he attends the ACVIM Forum. He will return to clinical service on June 20th.

BARTONELLA: ELUSIVE BACTERIA AND EMERGING HEALTH ISSUE

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Bartonella is a genus of bacteria that causes a zoonotic infection -- that is, bacteria transmitted from animal host to people. According to the CDC, more than 60% of known infectious diseases are zoonotic. Bartonella species are fastidious gram-negative bacteria highly adapted to a mammalian reservoir host, within which these bacteria cause a persistent intraerythrocytic bacteremia.

Cats and dogs are common reservoirs. Veterinary research indicates that a high number of otherwise healthy cats (probably over 50% in the U.S.) and a surprising number of dogs harbor Bartonella. The bacteria may be

transmitted by animal bites and scratches, or, by direct contact with fleas, ticks, and biting flies (or their feces).

Although traditionally associated with Cat Scratch Disease in the U. S., Bartonella species are suspected of contributing to a wide variety of ailments in both animals and humans, including chronic conditions affecting the joints, nervous system, and vascular system. The current medical understanding is that Bartonella can be life threatening (endocarditis, myocarditis and encephalitis) to animals and to humans. Unusual vasoproliferative

AVM Service Highlight

AVM performs esophagostomy tube placements in cats that need temporary nutritional support. This procedure is relatively rapid, uncomplicated, economical, and applicable to a number of common clinical situations.



BARTONELLA continued

lesions occur in patients with compromised immune systems (e.g., HIV). Preliminary research also implicates Bartonella in a number of chronic conditions (arthritis, seizures, anemia, thrombocytopenia and granulomatous inflammatory lesions) in animals and people with seemingly healthy immune systems.

The nature of the bacteria makes it extremely difficult to detect using commercially available diagnostics. Antibody tests (ELISA, Western blot, or IFA) all have significant diagnostic limitations; serology can only determine prior exposure to a Bartonella species, not active infection. The gold standard in Bartonella detection is Enrichment-PCR™; a proprietary culture to grow the bacteria followed by PCR testing, with DNA sequencing of positive results to identify the species, guide treatment and make zoonotic disease recommendations.

Feline Bartonellosis

Bartonella henselae, B. quintana, B. kohlerae, and B. clarridgeiae have been isolated from the blood of cats and have been detected using molecular methods in cat fleas. Bartonella infection is a frequent occurrence in feral cat

populations, in shelters, among outdoor cats in flea-endemic regions, and in open, multi-cat households that periodically introduce flea-infested cats or kittens. Endocarditis and myocarditis due to B. henselae suggest that some strains are highly virulent for cats.

When and how to test cats for evidence of Bartonella infection has been in a state of rapid change over the last few years. As clinicians, we need to know if a cat is bacteremic, not whether the cat has been exposed to a Bartonella species at some previous point in time. The expense of antibiotics, the long duration of treatment required to eliminate the infection, the need to use non-first line antibiotics, and the increasing zoonotic concerns associated with this genus justify proving the presence (or absence) of bacteremia in each and every patient.

Canine Bartonellosis

Infections with Bartonella spp. are being recognized in dogs with increasing frequency as a result of more sophisticated diagnostic techniques. Bartonella infections in dogs induce a wide range of clinical signs, relating to involvement of many organ systems.

This is perhaps due to the endotheliotropic nature of these bacteria and the fact that intracellular organisms located within the vasculature can become redistributed throughout the body by transport in erythrocytes and macrophages.

Lesions may occur in the CNS, eye, nasal cavity, endocardium, myocardium, liver, lymph nodes, joints, skin, and subcutaneous tissues. To date, B. vinsonii subsp. berkhoffi, B. henselae, B. clarridgeiae, Candidatus B. washoensis, B. quintana, B. rochali-mae, and B. elizabethae have been recognized as pathogenic for dogs.

Find it. Treat it. Prevent it.

As veterinarians and members of the public health infrastructure, we recognize that animal and human health are strongly interrelated concerns. When it comes to Bartonella, our recommendation is:

- 1. FIND IT.** Test your patients. EnrichmentPCR™ from Galaxy Diagnostics (www.galaxydx.com) provides the most accurate test for documentation of bacteremia and, if positive, identifies which species of Bartonella are present.
- 2. TREAT IT.** Antibiotics can clear the bacteria from your patient with time. Retesting two weeks post-treatment is recommended to prove elimination of the infection.
- 3. PREVENT IT.** A regular flea and tick control program is essential to your patients' health and the health of the pet owner. Prevent reinfection -- and possible transmission -- by eradicating fleas and ticks. Advise clients to avoid rough play that results in bites or scratches. ~



AVM Service Highlight

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