Canine Brucellosis

What is canine brucellosis?

Brucellosis is an infectious disease caused by bacteria from the genus *Brucella*. There are different species of *Brucella* that infect sheep, goats, cattle, deer, elk, pigs, dogs, and other animals.

Canine brucellosis is a contagious infection caused by the bacterium, *Brucella canis* (*B.canis*). This bacterial infection is highly contagious between dogs. Infected dogs usually develop an infection of the reproductive system, or a venereal infection.

What are the symptoms of brucellosis?

Brucellosis in dogs typically causes reproductive problems such as infertility and abortions, with few other signs of clinical illness. The disease is most common in sexually intact adult dogs.

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Male dogs infected with brucellosis develop epididymitis, an infection of the epididymis. When sperm are produced in the testicles, they are immature; the epididymis is a coiled segment of the spermatic ducts where the sperm mature and are stored before ejaculation. A dog with a newly acquired infection will often have an enlarged scrotum or an enlarged testicle and may have scrotal dermatitis. The quality of the dog's sperm will be poor. In chronic or long-standing cases, the testicles will atrophy or become shrunken.

Female dogs infected with brucellosis develop an infection of the uterus; she may be infertile or have difficulty getting pregnant, or may abort in the late stages of pregnancy. She often has a persistent vaginal discharge. Typically, a pregnant dog with brucellosis will abort at 45–55 days of gestation, or will give birth to stillborn or weak puppies.

During the early stages of brucellosis, enlarged lymph nodes are common. Occasionally, *B.canis* will infect the intervertebral discs, the eyes, the kidneys, or the brain. If the bacteria infects these other tissues, the symptoms will be related to the bodily system that is infected.

How is canine brucellosis spread?

Large numbers of *Brucella canis* bacteria are shed in the genital secretions (semen or vaginal discharges) of an infected dog. Smaller amounts of bacteria may also be shed in the dog's urine or saliva. After a female dog aborts a pregnancy because of brucellosis, she will continue to discharge fluids infected with the bacteria for 4–6 weeks after the abortion.
Dogs are exposed to the disease via contact with infected bodily fluids. Although the most common route of infection is oral (i.e. from licking contaminated urine or discharges from the reproductive tract, or licking or chewing placental material or aborted fetuses), dogs can also pick up an infection through sexual transmission, inhalation (sniffing contaminated urine or other discharges), or through other mucous membranes such as the eyes.

How is canine brucellosis diagnosed?

The infection is usually diagnosed by a blood test. The most common blood test is called a "Rapid Slide Agglutination Test" or RAST, and it can detect infections after 8–12 weeks. This test is used for screening of breeding dogs, and negative tests are reliable unless the dog has been recently exposed to the disease. False-positive tests are relatively common, and any dog that tests positive with the RAST test should have the disease confirmed with an advanced test called an "Agar Gel Immunodiffusion Test" (AGIT), which will identify infected animals between 12 weeks and 3 years post-infection.

What is the treatment for canine brucellosis?

Although antibiotics can be used to help control the infection, no treatment is completely effective at eliminating the bacteria, and any dog that has been infected with *B. canis* should be considered to be infected for life. Even if the acute infection is able to be controlled with antibiotics, the dog may shed bacteria intermittently for the rest of its life."

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Surgical sterilization of the infected dog will decrease shedding of the organisms into the environment, thereby reducing the risk to other dogs.

How can brucellosis be controlled?

Brucellosis in dogs is a rare disease in Canada. It is more prevalent in some areas of the United States, such as the southern USA, and in other parts of the world. Since the disease is a major threat to the breeding capability of dogs, all dogs used for breeding purposes should be tested regularly (e.g. every 3–6 months, depending on exposure to other dogs), and new dogs should never be introduced into a kennel situation until they have been quarantined for 8–12 weeks and then tested for the disease. Most experts recommend performing 2 blood tests 4 weeks apart, near the end of the quarantine period.

In the United States, brucellosis is a reportable disease, meaning that the disease is considered to be of great public health importance, and veterinarians and physicians are required to report all positive cases to federal authorities.
Am I at risk for developing brucellosis from an infected dog?

Brucellosis is a zoonotic disease, or a disease that can be transmitted from animals to humans. Although people can become infected by coming in contact with infected animals or contaminated animal products such as milk or meat, it is uncommon for a person to get a brucellosis infection from a dog.

Breeders and veterinarians exposed to the blood or other secretions of infected animals are at an increased risk of developing an infection; pet owners are not considered to be at risk for infection because they are unlikely to come in contact with blood, semen or uterine discharges from an infected dog. However, people with compromised immune systems should avoid contact with a dog that is diagnosed with brucellosis. This includes people with AIDS/HIV, people on chemotherapy or receiving radiation therapy, people who are elderly or have serious chronic diseases, people who have received organ transplants, pregnant women and young children.

People who come in contact with breeding dogs, newborn puppies or aborted fetuses should use caution and practice good sanitation. Whenever possible, wear disposable gloves before handling newborn puppies or cleaning an area where a dog has whelped. After removal of the disposable gloves, wash your hands thoroughly with soap and water and rinse well.

This client information sheet is based on material written by: Cheryl Yuill, DVM, MSc, CVH
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