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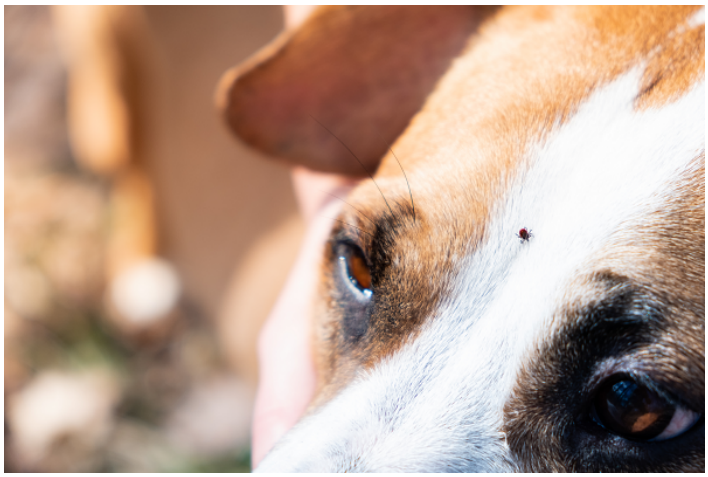
Anaplasmosis in Dogs

What is anaplasmosis?



Anaplasmosis is a tick-borne disease caused by the infectious bacterial organism *Anaplasma phagocytophilum*. It is transmitted through bites of the deer tick (also known as the black-legged tick) and the Western black-legged tick. A lesser form of anaplasmosis is caused by *Anaplasma platys* and is transmitted by the brown dog tick.

Anaplasmosis has been reported worldwide in a wide variety of animals.

What are the clinical signs of anaplasmosis?

Infection with the more common form of anaplasmosis, *A. phagocytophilum*, often causes lameness, joint pain, fever, lethargy, and anorexia (lack of appetite). Most infected dogs will have symptoms for one to seven days; however, some will have only minor symptoms or none. Less common clinical signs include vomiting, diarrhea, coughing, and labored breathing. Rarely, neurological signs such as seizures have been reported.

Infection with *A. platys* can cause cyclic thrombocytopenia, a condition in which there is a periodic decrease in platelets (circulating cells that help the blood clotting process). Clinical disease is often mild, but some dogs may develop bruising or bleeding (including nosebleeds), especially during the early stages of infection when platelet counts may be at their lowest.

Dogs with anaplasmosis often have many of the same symptoms as those with Lyme disease, and infection with both agents (co-infection) is not uncommon. Lyme disease and anaplasmosis are commonly found in the same geographic location and are transmitted by the same tick species.

How is anaplasmosis diagnosed?

Several tests to diagnose exposure or an infection are available. Exposure to *Anaplasma* can be detected in your veterinary clinic using a special test kit. Other tests, including enzyme-linked immunosorbent assay (ELISA), indirect fluorescent antibody (IFA), and polymerase chain reaction (PCR), can help your veterinarian determine if an active infection is present. These tests are sent to a veterinary laboratory. In addition, the organism can sometimes be seen through a microscope during peak phases of infection.

How is anaplasmosis treated, and what is the prognosis?

The treatment for canine anaplasmosis is the same as that for other closely related tick-borne infections, including ehrlichiosis and Lyme disease—the antibiotic doxycycline. Many infected dogs are treated for two to four weeks (the longer course more often if co-infected with Lyme disease). In most cases, symptoms improve rapidly. Dogs are often markedly better 24 to 48 hours after therapy is started, and the prognosis for clinical recovery is excellent.

Although most dogs clinically improve, it may be difficult to determine whether a dog is no longer infected. If a dog stops producing antibodies to the organism, this may indicate that the organism has been cleared from the body. Even if a dog infected with anaplasmosis is treated and returns to normal, the dog may continue to test positive for the infection on subsequent blood tests; this does not mean that the dog has an active infection, so a second round of antibiotics to obtain a negative blood test is generally not recommended.

What if my dog tests positive but isn't sick?

Dogs from areas where anaplasmosis or Lyme disease are common have often been exposed to *A. phagocytophilum* and have a positive antibody test result. It appears that many dogs may have antibodies to *A. phagocytophilum* without having any evidence of clinical disease. It has been shown that clinically healthy dogs may have persistent infections with *A. phagocytophilum* and are chronically infected carriers of the organism. We do not know if these dogs will eventually become ill or not.

Current research suggests that canine anaplasmosis is an acute disease that occurs in dogs a week or two after infection through a tick bite. Because chronic infection has not been directly related to clinical disease and a therapeutic regimen effective in clearing the organism from an infected animal has not been established, treating clinically healthy, positive testing animals is of questionable benefit and not generally recommended.

"...a positive test result in a clinically healthy dog should not be disregarded."

However, a positive test result in a clinically healthy dog should not be disregarded. At a minimum, positive dogs should have an aggressive tick control program implemented to minimize exposure to ticks. Co-infection with two or more tick-borne agents is common, and dogs co-infected with Lyme disease (*Borrelia burgdorferi*), *A. phagocytophilum,* and *Anaplasma* are nearly two times more likely to develop a clinical disease than dogs infected with either agent alone.

There is also some concern that chronically infected carrier dogs could be adversely affected by medications that compromise the immune system (i.e., steroids) or an illness that might reduce a dog's immune status.

How can I prevent my dog from getting Anaplasmosis?

The key to prevention is limiting your dog's exposure to ticks. Ticks are found in grassy, wooded, and sandy areas. They find their way onto an animal by climbing to the top of a leaf, blade of grass, or short trees (especially cedar trees), where they wait until their sensors detect an approaching animal on which to crawl or drop. Keeping animals from thick underbrush reduces their exposure to ticks. Dogs should be kept on trails when walking near wooded or tall grass areas.

Since ticks need to feed for at least 24 hours before naturally transmitting anaplasma to a pet, medications that kill ticks in under 24 hours can be effective in preventing the disease. Ask your veterinarian what parasite control options are best for your dog.

Can I get anaplasmosis from my dog?

Anaplasmosis is considered a zoonotic pathogen. This means it has the potential to infect humans. However, direct transmission from animals to people or animal to animal is highly unlikely and has not been documented. If a dog is diagnosed with anaplasmosis, strict tick control measures should be taken as this indicates there are infected ticks in the environment that could transmit the disease to humans.