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Ehrlichiosis, *Ehrlichia*

Canine rickettsiosis, canine hemorrhagic fever, canine typhus, Tracker dog disease

Affected Animals:

Dogs, cats, and in rare instances, humans. German shepherds and Doberman pinschers tend to be affected more severely by the disease.

Overview:

Dogs get ehrlichiosis from the brown dog tick, which passes an *Ehrlichia* organism into the bloodstream when it bites. There are three stages of ehrlichiosis, each varying in severity. The acute stage, occurring several weeks after infection and lasting for up to a month, can lead to fever and disorders of the blood. The second stage, called the subclinical phase, has no outward signs and can last for up to five years. If the infected dog's immune system is unable to eliminate the *Ehrlichia* organism, the third and most serious stage of infection, the chronic phase, will commence. Lameness, neurological and ophthalmic disorders, kidney disease, and anemia and other blood disorders can result. Chronic ehrlichiosis can be fatal.

Antibiotics, administered for an extended period of time, are effective at eliminating the infection. Dogs with severe cases of chronic ehrlichiosis cannot be cured, but supportive care and treatment of diseases secondary to the infection, such as anemia, can help stabilize the dog.

Clinical Signs:

The acute stage of the disease, occurring most often in the spring and summer, begins one to three weeks after infection and lasts for two to four weeks. Clinical signs include a fever, petechiae, bleeding disorders, and vasculitis. There are no outward signs of the subclinical phase, which can last for up to five years. Clinical signs of the chronic phase include pale gums due to anemia, thrombocytopenia, vasculitis, lymphadenopathy, respiratory dyspnea, coughing, polyuria, polydipsia, lameness, ophthalmic diseases such as retinal hemorrhage and anterior uveitis, and neurological disease.

Symptoms:

Symptoms of the acute stage of disease include a fever, lesions within the mucous membrane, bleeding disorders, and inflammation of the blood vessels. The subclinical phase has no outward signs of disease. Signs of the chronic stage of the disease can

include pale gums due to anemia, inflammation of the blood vessels, swollen lymph nodes, difficulty breathing, coughing, kidney symptoms such as increased urination and increased drinking, lameness, eye disorders, and neurological disease.

Description:

Ehrlichiosis is a tick-borne disease of dogs that is caused by an organism called *Ehrlichia*. There are several species of *Ehrlichia*, but the one that most commonly affects dogs and causes the most severe clinical signs is *Ehrlichia canis*. The brown dog tick, or *Rhipicephalus sanguineus*, that passes the *Ehrlichia* to the dog is prevalent throughout most of the United States, but most cases tend to occur in the Southwest and Gulf Coast regions where there is a high concentration of the tick.

There are three stages of the *Ehrlichia canis* infection: acute, subclinical, and chronic. Approximately one to three weeks following the infection, clinical signs of the acute phase begin and typically last for two to four weeks. The subclinical phase, which does not produce outward clinical signs, lasts for up to five years. If the dog's immune system is unable to eliminate the organism during this stage, the chronic phase will occur and may last for years, depending on the severity of the infection. Dogs that are severely affected can die from this disease.

Although people can get ehrlichiosis, dogs do not transmit the bacteria to humans; rather, ticks pass on the *Ehrlichia* organism. Clinical signs of human ehrlichiosis include fever, headache, eye pain, and gastrointestinal upset.

Diagnosis:

Diagnosis is achieved most commonly by serologic testing of the blood for the presence of antibodies against the *Ehrlichia* organism. During the acute phase of infection, however, the test can be falsely negative because the body will not have had time to make antibodies to the infection. Thus, the test will need to be repeated if the first result is negative. In addition, blood tests will show abnormalities in the numbers of red cells, white cells, and platelets. Uncommonly, a diagnosis can be made by looking under a microscope at a blood smear for the presence of the *Ehrlichia* organism, which sometimes can be seen within a white blood cell.

Prognosis:

The prognosis is good for dogs with acute ehrlichiosis. For dogs that have reached the chronic stage of the disease, the prognosis is guarded. When bone marrow suppression occurs and there are low levels of blood cells, the animal may not respond to treatment.

Transmission or Cause:

The *Ehrlichia* organism is passed to the dog through the saliva of a tick called *Rhipicephalus sanguineus*. These ticks are prevalent throughout most of the United States, but most cases of infection tend to occur in the Southwest and Gulf Coast regions.

Treatment:

Supportive care must be provided to animals that have clinical signs. Subcutaneous or

intravenous fluids are given to dehydrated animals, and severely anemic dogs may require a blood transfusion. Treatment for ehrlichiosis involves the use of antibiotics such as doxycycline for a period of at least six to eight weeks; response to the drugs may take one month. In addition, steroids may be indicated in severe cases in which the level of platelets is so low that the condition is life threatening.

Prevention:

Prevent tick infestation by avoiding tick-infested areas. In addition, there are many methods for controlling fleas, including medicated shampoos, dips, sprays, the Preventic® collar, or Frontline®. If tick control is not feasible, tetracycline at a lower dose can be given daily for 200 days during the tick season in endemic regions.