Babesia canis: The Cause of Piroplasmosis

Drs. Foster & Smith Educational Staff

Babesia canis was formerly called *Piroplasma canis*, so you may hear infection with this parasite called 'canine piroplasmosis.' *B. canis* is a one-celled parasite that infects dogs and other wild carnivores like wolves and fox. It can be quite common in certain areas of the southern United States, and is found most often in kennel situations.

What is the life cycle of *Babesia canis*?

Not everything about the life cycle of this parasite has been discovered, but here is what we know. The parasite lives in red blood cells where it reproduces by dividing in two. Sometimes 2, 4, or even more parasites can be found in a single red blood cell. The infected cells rupture and release the parasites that can then enter new cells. The parasite is transmitted from animal to animal by ticks.

What are the signs of infection with *B. canis*?

The severity of signs may vary depending on the strain of parasite, the level of infection, and the immune status of the dog. In most cases, anemia occurs. If large numbers of red blood cells rupture at the same time, fever, vomiting, diarrhea, jaundice, and kidney failure can result. Sometimes skin lesions can be present. Rarely, the infected cells may clog some of the small blood vessels and cause nervous system abnormalities and muscle weakness. Sometimes, the same tick can transmit *Babesia canis* and other organisms (e.g.; *Ehrlichia canis*, which causes anemia in dogs) at the same time. This causes the canine piroplasmosis to be more severe.

Unlike many other diseases, infections with *B. canis* are less severe in young dogs than older ones.

Chronic forms of the disease can occur. Dogs have recurring fevers, lose their appetites and can become emaciated.

How is piroplasmosis diagnosed and treated?

The disease can be diagnosed by examining blood or tissues under the microscope and finding the parasite. This can sometimes be difficult, so often a serologic (blood) test is performed.

Other species of *Babesia* infect cattle, horses, poultry, and humans.

Some very special drugs are used to treat *B. canis* infections in dogs. If you really want to know, they include diminazene aceturate, imidocarb diproprionate, and pentamidine isethionate. These drugs may successfully treat the disease, but not totally eliminate the organism since relapses often occur. In severe cases, blood transfusions and extensive supportive care are often needed.

Other than tick control, are there any other prevention measures?

Veterinarians need to screen blood donors for *B. canis* because it can be transmitted through blood transfusions. Research into developing a vaccine is ongoing.