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### Hepatozoonosis - A Different Kind of Tick Borne Disease Linda Aronson, DVM



Hepatozoonosis may only be endemic in Texas, Louisiana, Mississippi, Oklahoma, Alabama, Georgia, Florida, Arkansas and Tennessee at present, but odd cases are beginning to show up all over North America, and that is a reason for concern. Not only may vets miss the diagnosis, which will be fatal for the affected dog, but meanwhile that dog will be replicating the causative organism and potentially causing a problem for other animals.

Unlike the other tick borne diseases dogs become infected with *Hepatozoon americanum* not by being bitten by the tick, but by eating it. The dog may do this in self-grooming, but often outbreaks of the disease are linked to hunting. After taking the more desirable cuts from the deer the hunter will throw the lower leg to the dogs, and in that way they can ingest a lot of ticks in a short time. Once the dog has swallowed the tick, sporozoites are released into the gut, and engulfed by cells called macrophages, which carry them throughout the body. They then form cysts, where the organism reproduces until the cyst bursts releasing the next growth stage – merozoites. Some of these in turn are eaten by white cells – neutrophils, and then swallowed by ticks feasting on the dog, which can then infect the next dog to eat them. Every time a cyst bursts the dog will experience muscle pain and be very sore. The dog has trouble rising, and they walk stiffly. They don't like turning their heads. They will have a high temperature – usually around 105oF too, so that the problem may be misidentified as meningitis. Muscles may atrophy. One thing that will set the hepatozoonosis apart is that the dogs will discharge pus from their eyes. Not surprisingly they will stop eating and lose weight and they are very weak. The disease appears to come and go, and between releases of merozoites the dog may seem to recover.

**Initial diagnosis** can be made by a blood test offered by Auburn College of Veterinary medicine, and sometimes the organism can be seen on blood smears. Chronic cases are better diagnosed by muscle biopsy. White cells will be elevated, and there is often a non-regenerative anemia. Unlike other TBD platelet numbers are usually normal or even elevated.



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Left untreated dogs will usually die within 7 months of infection. Initial treatment is with a combination of the antibiotics trimethoprim-sulfadiazine and clindamycin and the antiprotozoal pyrimethamine for 2 weeks. Dogs may require pain killers and also fluid therapy too. Dogs will appear normal after 3 or 4 days, however, they will relapse without further treatment. A drug called decoquinatone must be started as soon as the combination treatment ends, and is given daily until the dog tests negative. This can be for 2 years or more.