



## **HEARTWORM DISEASE IN DOGS: CLIENT INFORMATION ON DIAGNOSIS AND TREATMENT**

### **What is heartworm disease?**

Heartworm disease is a serious and potentially fatal disease in dogs. A worm called *Dirofilaria Immitis* causes the disease. While it is primarily a problem of dogs, infections have been seen in cats and other pets, though much less commonly than in dogs. Cases in people have been reported, though it is an extremely rare finding.

Heartworm is transmitted to the dog through the mosquito. When an infected female mosquito bites the dog immature heartworms, called *microfilaria* are deposited into the dog's skin. Over time these microfilaria enter the blood vessels and move to the heart and major blood vessels where they grow into adult worms. These adult worms then begin to reproduce. The entire process of infection to maturation takes 6-10 months.

### **What are the signs of heartworm disease?**

Dogs infected with heartworm initially may not show any signs. After several months to years of infection owners may notice a chronic cough, shortness of breath, weakness, and exercise intolerance. These signs usually occur when the microfilaria have matured to adult worms in the heart. The appearance and/or severity of signs are often related to the number of heartworms present in the dog's system. Systems involved include heart, lungs and, less commonly, the liver.

Diagnosis of heartworm is made by a blood test at the veterinarian. Dogs with heartworm may test positive for adult worms only, or for both adults and microfilaria. Dogs on year-round heartworm preventative still need to be tested, as positive cases have been seen even in dogs on continual preventative. If your dog tests positive the test is repeated in order to confirm the diagnosis.

### **Can heartworm disease be treated?**

Yes. Treatment of heartworm disease involves several steps. Prior to treatment diagnostic tests are run to evaluate how severe the infection is and to determine if the dog is healthy enough to tolerate treatment. These tests include additional bloodwork to evaluate organ function, chest x-rays to evaluate the heart and lungs, and a urinalysis.

Your pet is admitted to the hospital following the above workup to start treatment. He/she receives a series of two to three injections of a product called **Immiticide** (melarsomine). This drug is designed to kill adult worms in the dog's heart. Side effects from the injection include soreness and, rarely, post injection abscess development at the injection site. Other side effects reported include lethargy, loss of appetite, vomiting, breathing problems and (less commonly) thromboembolism formation. While mortality after heartworm treatment has been reported, untreated cases of heartworm disease may also lead to an early death due to heart and/or respiratory problems. Most dogs are sent home on an antibiotic +/- an anti-inflammatory after their Immiticide injections.

A recheck exam is scheduled for 2 weeks after this stage of treatment to make sure your pet is doing well. Four weeks after treatment with Immiticide, dogs that are positive for microfilaria return to the hospital for treatment to kill these immature worms. Heartworm preventative is restarted to prevent future infections. Four months after treatment we retest the dog to evaluate whether all of the heartworms were successfully killed.

While heartworm treatment often is successful without any side effects your dog should be closely monitored for problems, especially during the first few weeks after Immiticide therapy. ***MOST IMPORTANTLY, you must RESTRICT EXERCISE for 4 to 6 WEEKS.*** Dying heartworms will decompose and are carried to the lungs where they are eventually absorbed by the body. This presents a potential danger to the dog as these dead worms can lodge in the vessels to cause an embolism. Any dog that shows signs of a significant reaction to these dying worms needs to be checked by a veterinarian immediately. Dogs who experience side effects (see above) may require further hospitalization for supportive care.

### **What can I do to prevent heartworm infection?**

The best way to treat heartworm infection is to prevent it from happening. Today's heartworm preventatives are very effective and easy to administer. Oral or spot-on treatments, given once monthly, are available at the clinic for dogs that are heartworm negative. These products are often effective against other parasites in addition to heartworms.

In our area, dogs should be given the preventative at least from springtime through December. We currently recommend year round administration of the preventative, as its effectiveness against intestinal worms is a valuable asset during the winter months. Dogs older than 6 months should be tested for heartworm each spring BEFORE starting the preventative; dogs on year round preventative can be tested at any time during the year. Dogs younger than six months old do not need to be tested before starting the preventative

In summary, heartworm infection is a disease that can be treated but is best handled by prevention. Regular testing and monthly preventatives are the cornerstones in keeping your pet safe from this potentially harmful parasite. As always, if you have any questions about heartworm testing, treatment or prevention, do not hesitate to ask the staff or veterinarian.