Stories From Our Clinic: Heartworm Disease

Drs. Foster & Smith Educational Staff

A Case of Heartworm Disease

Baron, a German Shepherd, just did not "seem right" to his owner, Emily. He was eating as usual, but she noticed that he coughed once in awhile and he wasn't as eager to go on his usual daily walks. Emily made an appointment with her veterinarian for the next week. The veterinarian's technician took a history and found out Emily had not given Baron his full course of heartworm preventives the previous spring and summer. The veterinarian performed a heartworm antigen test at that time, and when he found out that Baron was positive, he repeated the test. When that test result was also positive, he took radiographs to determine the severity of the heartworm disease. Heartworm, or *Dirofilaria immitus*, used to be more likely to affect dogs living in the Southern United States, but heartworm disease has now been seen in all 50 states.

How does heartworm happen?

In dogs, the immature stage of the worm is deposited in a dog's skin by a mosquito. Over the course of three months, they will migrate through the bloodstream to the pulmonary vasculature where they grow into adult worms. As they grow, the heartworms can lodge in the heart, the blood vessels in the lungs, and even in the vena cava, the large vein that leads to the heart.

Signs of heartworm disease

Outward signs may not be apparent until a year after infection and may begin simply as a soft cough. As the disease progresses, the infected dog will find it more difficult to breathe, his quality of life can severely diminish, and as congestive heart failure occurs, the animal can die. Severity of disease depends on the number of heartworms present.

According to the American Heartworm Society, clinical signs of heartworm disease can range from no signs at all to cough, exercise intolerance, difficulty breathing, and fainting.

Diagnosis of heartworm disease

Serologic (blood) tests are used to identify antigens (small protein components) of heartworms in the bloodstream. If the test is positive, other confirmatory tests including radiographs, echocardiography (ultrasound of the heart) and additional laboratory tests are done.

Treatment and prevention of heartworm disease

Heartworm disease is a serious condition, and can cause heart and lung damage, and even death. Most heartworm disease can

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be successfully treated if it is diagnosed early. However, treatment is expensive and can lead to serious complications. In addition, if a pet is showing signs of heartworm disease, permanent damage to the heart and/or lungs has occurred. Baron was treated with an anitbiotic for 30 days that kills Wolbachia, bacteria associated with heartworms that contribute to inflammation in the lungs and kidneys. He was also treated with a heartworm preventive to kill any susceptible larvae. This makes the treatment with the adulticide less risky. The adulticide can cause complications if the dead and dying worms start to block the blood flow through the arteries to the lungs. Baron was then given an injection of the adulticide to kill the adult heartworms. Four weeks later, Baron was treated with two more injections of the adulticide. During this entire time, Emily needed to restrict Baron's exercise.

Six months after the final treatment, blood tests were performed on Baron to see if the adult heartworms were eliminated. Luckily, Baron survived his infection and his treatment. Emily has also decided to follow the American Heartworm Society's most recent guidelines and gives Baron heartworm preventive year round.

Each year, our pet's veterinarian sends us a notice or reminds us that it is time for our pets to get their annual heartworm tests. If the test is negative, we are given a prescription for a monthly heartworm preventive such as Tri-Heart Plus or Heartgard Plus. All dogs should be tested annually for heartworm infection. Annual testing will ensure that an infection is caught in plenty of time to effectively manage it.

WE RECOMMEND:

- **Tri-Heart Plus**, a preventive that contains ivermectin and pyrantel
- **Sentinel**, with heartworm prevention plus inhibits flea egg development
- **Heartgard Plus**, a monthly oral pet med used as a combination heartworm preventive and intestinal wormer

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