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Heartworms in Dogs

Lives of their own

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Most animals suffer from specific mosquito-borne parasites, and dogs are no exception. All canine heartworm infections begin with a bite from a mosquito carrying an immature form of the parasite. Heartworms are a common problem in our area, and, like men with prostate cancer, most dogs with heartworms die with them and not because of them.

“When I was finishing Louisiana State University Veterinary School, up to 25 percent of dogs we autopsied had heartworms even though they died of other causes,” says Dr. Daniel Vichot, a young veterinarian and Algiers native. Vichot attended Newman, Wake Forest University and veterinary school at LSU. He practices with Dr. Andrew Gutter at Algiers Animal Clinic where he once took his pets as a child.

“Every veterinary student leaves the gross pathology service surprised at how prevalent heartworm disease is,” says Vichot, who adds that he had no data specific for New Orleans as necropsies on dogs (just as autopsies on humans) are not routinely performed these days.

Mosquitoes vary in size, flight range, habitat and animal preference. There are more than 100 species of mosquitoes that call New Orleans home and only a few of these are vectors for canine heartworm disease. As the disease-transmitting mosquito laps up a meal of dog blood, baby heartworm larvae must break out of the insect’s tiny mouthparts and swim through a still fresh puncture site. Once an immature heartworm larva gets under the dog’s skin, it grows for weeks before primitive wanderlust instincts leads it to larger-caliber blood vessels. The most popular housing is the pulmonary artery, not the heart. It takes some six to seven months inside a dog for immature heartworm larvae to reach adult size of up to 12 inches.

“Capelli d’angelo,” was Joe Segretto’s quick response when asked for the name of the thinnest and longest Italian pasta. “You know it as angel hair pasta. We always have it on the menu at Eleven79,” says Segretto, an instant knowledge base for all things Italian and food-related. As he continued in his trademark charming, loquacious style, I didn’t have the heart to tell him I was calling for a food term to describe adult dog heartworms.

As with Italians and most other God’s creatures, it takes male and female heartworms to make babies. Adult worms must mate inside a dog’s circulatory system before gravid females can give live birth to tiny microfilariae. These microfilariae circulate in a dog’s bloodstream for years with the single evolutionary goal of being in the right place at the right time to make it into a bloodsucking mosquito’s stomach. Heartworm microfilariae cannot turn into adults without an intermediate trip through mosquitoes. The microfilariae undergo a series of molts, migrate to the mosquito salivary glands, wait for the hungry mosquito to bite another dog and crawl under skin of the next dog to grow into big worms.

Parasitologists refer to the number of parasites in any one animal as worm burden. The size and number of the adult worms are the problem. A dog can live comfortably, and usually without symptoms, with a few heartworms, but hunting dogs in rural areas can end up with hundreds of adult worms. The first symptoms of an infection are cough, exercise intolerance and maybe some weight loss. As the dog’s pulmonary arteries become more obstructed with adult worms, the cough worsens, breathing becomes more difficult and the belly appears bloated with ascites. These are all signs and symptoms of advanced heart failure.

According to Vichot, a veterinarian needs to evaluate any dog with heartworms to stage the disease before making any treatment options.

Unfortunately, most of the drugs that can kill the adult worm can also kill a dog. If too many adult worms die at one time, the lungs fill with dead worm parts and proteins in a condition that resembles human pulmonary emboli. A series of injections with an arsenic-like drug is regarded as a good treatment option for a younger dog as it eliminates the worms completely after one to two months. Cage confinement and steroids help prevent complications from a massive heartworm kill.

Dogs with more advanced worm burdens, or older dogs, might do better with some of the slow-kill or delayed-kill treatment options that are composed of the same active ingredients as used to prevent heartworms. Preventive doses of these drugs kill circulating microfilariae over months, usually without the serious adverse effects associated with sudden total kill.

“The active compounds in heartworm preventatives reduce transmission of heartworm disease, kill larval stages of the heartworms and slowly kill the adult heartworms. The antibiotic doxycycline can help by eliminating bacteria the heartworms need for metabolism. Combination drugs are often used,” says Vichot, who adds that the slow-kill drugs are usually reserved for older dogs and those with advanced symptoms.

“Your veterinarian can guide you in choosing an appropriate product that’s tailored for your pet and its environment. For instance, an independent farm dog that lives primarily outdoors with a high exposure to mosquitos, fleas and assorted wildlife likely requires a different product from a small, family house dog,” says Vichot. There are many heartworm preventatives to fit multiple situations.

Cat Heartworms

Cats are not a natural host for heartworms but, like ships at sea, heartworms will take any port in a storm. Once infected, the cat’s immune system swings into action. An overactive immune response causes symptoms resembling asthma, allergic bronchitis or other more generalized symptoms of distress. Diagnostic tests for feline heartworm infections aren’t as reliable as for dogs.

There is no safe treatment for cats with established heartworm disease other than supportive care as dead adult heartworms cause havoc in the cats’ lungs. Therefore, most veterinarians recommend preventative medication for cats. If you’re already giving your cat a neck rubdown once a month with one of the topical preventives such as Revolution or Advantage-Multi, you’re ahead of the curve. These products are absorbed through the skin into the bloodstream and help control fleas, ear mites, intestinal parasites and heartworms.

Source: Dr. Andrew Gutter, Algiers Animal Clinic