

Heartworm disease in dogs is clearly not a new problem. Anyone who has had a dog in the last 40 years has experienced regular heartworm screening at the vet's office and given their dogs daily to monthly chewy treats enriched with worm-preventive medicine. So why talk about it now? Because heartworm disease is back on the rise and creating high-risk (... and high cost) treatment situations for dogs and their owners.

Heartworms are literally just as they sound: worms that live in the hearts of dogs. The larval forms are carried by mosquitoes and are passed into our dogs when these pests feed on them. Once in the blood stream, they will migrate about until they set up shop in the right side of the heart. Once there, they will mature to reach sizes of up to 12 inches in length. If both genders are present, they begin to reproduce. Left unchecked, dogs have been known to harbor HUNDREDS of worms and this number will markedly stretch the heart out leading to permanent damage to both the heart and lungs. Eventually, the dogs will develop heart failure. While heartworm is treatable with small numbers of worms, killing larger numbers can not only cause fatal allergic reactions, but the dead worms can end up breaking free and clogging the blood supply to the lungs.

Heartworm has been preventable for many decades. With some very rare exceptions, medications used in the preventives have proven to be very safe and effective over many generations. The first preventives were daily treats that soon evolved into monthly treats that many of us still use today. A topical, transdermal product followed shortly thereafter and there is also a 6 to 12-month injection that has been used for about 15 years. Despite all of these options, heartworm disease has been seeing an increase in diagnosed cases throughout the US. In New England in 2001, clinics typically saw 1-5 cases per year. That average has increased to 6-25 cases in 2016. While some of this may be attributed to more rescue organizations bringing in dogs from southern states, we have also begun to see a trend away from using preventives. Much like vaccines, there is some fear in using these preventives with owners choosing natural approaches or mosquito repellants. Unfortunately, research has shown that these alternatives have not been effective. Another reason is that people just don't think that heartworm is that big of a problem in New England compared to the South, or at least it is only a seasonal problem. So, preventatives are given sparingly or not at all with the thought process of "We will just treat it if they get it". As I said before, treatment is very dangerous, but also very costly. For a typical patient, the cost of the pre-treatment work-up, medications, monitoring, and follow-up equals the cost of 12-13 years worth of heartworm preventive. At our own clinic, we have seen an alarming increase in dogs who never leave the South Shore who have become positive for heartworm in the last few years. So, it is around and dangerous.

There are currently three ways to prevent heartworm. A topical product containing selamectin is absorbed through the skin and also has some efficacy against fleas, though since it doesn't do much for ticks, it may be overkill for our area. The monthly oral preventives are still the most popular among owners and there are several formulations that also cover other different parasites. However, there have been reports of dogs still contracting heartworm and other worms on some of these products. It is still unclear if this is due to a tolerance against the medicine or a dosage issue. The third type is an injectable that was originally developed for humans in areas where parasitic worms are prevalent but medical care is not. It left the market for a time in the US due to complaints that turned out to be unfounded. During that time, countries overseas began giving a triple dose of the injection that has shown to safely prevent

heartworm for 12 months. The same safety has continued to be seen here in the US. Though it is unlikely to ever be licensed for more than the 6-month interval, it is still the most reliable heartworm preventive and the one that our clinic recommends.

Do you have a veterinary question or concern? Email it to \*\*\*\*\*@\*\*\*\*\*.\*\*\* as a possible topic for our next segment!