

A Heartworm Scare. By Paula Costa.

It is hard to believe that I have had my little rescue, Zachary, (formerly known as Zedicus) for 2 and a half years! Zachary is half Beardie and half PBGV. The time seems to have just flown by. He loves everyone and everyone loves him. He is just the sweetest little guy and I am lucky to have him!

This spring we had a little scare. I had routine blood work done and also tested for heartworms. Zachary tested heartworm negative when I got him, and since he had been on monthly Heartgard Plus--never having missed a month - you can probably imagine my shock when I was told he tested positive! The microfilariae test was negative, but the antigen test was positive. This seemed to indicate that the Heartgard was working--having killed the baby worms in their larval stage, the microfilariae; but the antigen test, which tests for a protein produced in the skin of the adult female worm (not the males), indicated adult worms were present. I was in total disbelief, and asked the vet to send the sample out to an independent lab--that result also came back positive (but it was the same blood sample). I was really beside myself and had a very hard time believing this could be true! Once I overcame my initial astonishment I set about researching how this could be the case and what best to do about it. The vet that did the testing seemed sure that Zachary was indeed heartworm positive, and though he did not insist upon the treatment, he said that would probably be the best course of action. Two other local vets that I called to discuss the scenario with also were willing to act and do the heartworm treatment based upon those test results. I became more resigned to the fact that this was probably the way things must go, but still, I felt that I should research the entire situation, for there were some pieces of the puzzle that seemed missing and left me a little unsettled. Having had a rescue many years ago that we treated for heartworms, I knew it was not to be taken lightly. That guy survived and lived over ten more years (after having the more severe arsenic treatment used back then) and ultimately succumbed to kidney failure, a likely result of that treatment.

I needed to go out of town for my son's college graduation, and knew that I wanted to be home when the treatment was administered (not wanting to entrust Zachary's care to anyone else), so this left me almost two months to research which way to go and to plan for the treatment. Zachary was totally asymptomatic-- healthy as could be and fast as a bullet, so it was thought if he were indeed heartworm positive, he likely had a light load, and waiting a short time would not have been detrimental. I did buy some doxycycline. Wolbachia is a rickettsial organism that is a parasite of the adult heartworm, and appears to protect the adult worms from treatment and also worsen inflammation in the lungs and kidneys and increase the risk of emboli when the adult worms die. Doxycycline kills the Wolbachia (and microfilaria too) and so may help protect the dog from some of the adverse effects of dying worms. Administering the doxy was something that I could do for the prescribed time prior to and to coincide with the actual immiticide treatment (three immiticide injections to the dog) upon my return.

In the meantime, I would research and research. It seemed as though I lived "heartworms" for two months. I read numerous papers on heartworms, read the entire sites of the American Heartworm Society and all papers of their recent symposiums, and reached out by email and phone calls to noted experts. I was grateful and it was most heartwarming to know that many of these people were indeed kind enough to respond to me and give me their thoughts. I emailed experts on three continents and received answers! Zachary's was a bit of a strange case....but certainly not unheard of. There were several reasons why he could have been microfilarial negative and antigen positive:

1. He could have been heartworm positive when I adopted him. A heartworm test at that time could have shown negative if he only had the disease for a short time. It takes about 6 to 7 months to get an actual positive (antigen) test.
2. He could have been heartworm positive at time of initial testing but only had male adult worms--the antigen test detects the presence of only female worms.

3. He could have a resistant strain of heartworm (there were Hurricane Katrina canine refugees adopted in this area that are thought to spread a resistant strain of heartworm).

4. All of the above would have still been consistent with him being microfilariae negative since the monthly Heartgard doses were killing the larva.

5. Or, the antigen tests could have been wrong!

Most experts believed that number one was probably the most likely scenario and actually, did not bring up number 5 in their evaluations. Still, something really bothered me. If you were to see this dog you would wonder how he could have heartworms, and though vets know there is a high likelihood of noncompliance in heartworm drug administration, I knew that Zachary had never missed a month of treatment. Of course, a light load of worms may produce an asymptomatic dog, but I still wasn't 100% convinced that he had them. I held off on administering the doxycycline.

Upon my return from my short trip, I knew I could put the decision off no more, and dreadful as it seemed, I knew the time had come. Yet, I wanted him tested again, just to be sure. He tested negative!!!! (both microfilariae and antigen tests). I tested again, and sent the blood out to an independent lab--negative! By this time, I really didn't know what to think--which tests were accurate? So, I tested a fourth time, and again the tests came back negative. After the 4th test I decided Zachary probably did not have heartworms and not to treat him! Truth be told, I am still a little concerned about it, and plan to test again in a few months, but now I do feel much more comfortable about him actually being heartworm negative.

I have since learned that positive results can be up to 50% inaccurate! That figure is astounding to me! And, I am concerned that three vets would have performed the immiticide treatment based upon the initial tests, not to mention that poor Zachary would have been injected with this arsenic treatment and confined to a crate for 6 or more weeks during treatment. Although I feel I became somewhat of an expert on heartworms during my two month research period, I am sure that many of you must know so much more than I do. However, I think Zachary's story bears repeating and if it sheds any light on the testing process and the fact that false positives are quite common, it will have been worth retelling here. I am so glad I chose to test Zachary again with new blood samples! Even sending out to the 1st independent lab was not adequate--because the same blood sample was used. I guess, as in human medicine, same as in canine--one must take responsibility for one's own care to some extent.

I am happy to report that Zachary still seems as healthy as he could possibly be! This guy is fast as a cheetah, agile as a Bolshoi ballet dancer, and strong as an ox! Not to mention as sweet as an ice cream sundae! Just love him!

Editor's note. While a negative antigen test for heartworm is extremely accurate in most cases a positive result must be interpreted in the context in which it is found. Zachary lives in Florida and the incidence of heartworm is quite high. While vets know that test results are never 100% accurate unfortunately in practice there is a tendency to rely upon and not question results. In part this is an attempt to reduce costs. Experience tells us that even if the owner gives the pill, much of the time they do not follow up and make sure the dog actually consumes it. (One study showed that some 80% of owners stopped giving heart worm medication after the first two pills and some never gave it.) Still, when you have a client like Paula who knows her dog took the pills you really have to question the accuracy or the test or the efficacy of the medication. For those wishing to understand the accuracy of the heartworm antigen test I would suggest reading this <http://www.abaxis.com/pdf/888-9200-rev-a-fp-fn-results-in-heartworm-disease.pdf> Don't let the math scare you, it's not that hard!