

COCCIODIOMYCOSIS (VALLEY FEVER)



GREYHOUND AND SPANIEL; DOCTOR FOP; HERRING, JOHN FREDERICK, SR. (1795-1865)

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The desert southwest (Arizona, N. Mexico, S. California) is the hotbed for coccidiomycosis in the U.S. "Cocci" or "Valley Fever" is a fungus that lives in the desert soil and forms spores when released into the air. Events such as the digging of building foundations and pools help this spore release process along. Periods of rain, which cause fungal growth, are usually followed by more cases diagnosed. The spores are inhaled by man, dogs, and horses (cats seem to be resistant), causing the disease, Valley Fever. Valley Fever is an "equal opportunity" disease because any dog who breathes air in an endemic region can get it. There is no vaccine or way to avoid it short of moving away.

Our greyhounds seem particularly susceptible to cocci, perhaps due to their normally low white blood cell counts (therefore less resistance to infectious disease?). Whatever the reason, the incidence and severity of cocci in greyhounds does seem higher than in the rest of the local canine population. Immunity plays a part in which dogs contract Valley Fever. We see as many cases of cocci in house dogs who are only out for a minute to do their duty as in outdoor dogs who run around all day with their noses to the ground. Additionally, just because one dog in a household gets sick is no reason to expect the other dogs to come down with it. Valley Fever is not contagious from dog to dog.

Symptoms:

Valley Fever is a disease that can be obscure and may progress before the owner sees sufficient reason to go to the vet. Some dogs display no specific signs, especially early on; they just may not feel as well or eat consistently or lose weight. Despite the name, half of Valley Fever dogs have normal temperatures at presentation. They may, however, run fluctuating fevers at home and have times of feeling well interspersed with times of lethargy.

These ADR ("Ain't Doin' Right") dogs inevitably go on to develop more specific signs if undiagnosed and untreated. The most common signs are poor appetite, weight loss, lameness, bone pain, spinal pain, and coughing. This is because in the early ("primary") form, the fungus infects the lungs, then moves on to infect bones ("secondary" form). Lungs and bones account for most cases; other places cocci can go are the central nervous system, eyes, and rarely, heart or skin.

With greyhounds, we seldom see the coughing stage. In most cases, the greyhound presents with bone involvement or nonspecific illness/weight loss. While other dogs tend to present with equal proportions of lung vs. bone form, greyhounds run ballpark 10% lung, 30% ADR, 60% bone, and a neuro case here and there.

A particular concern with greyhounds is how much the cocci bone lesions resemble bone cancer (osteosarcoma) on x-rays. Lesions can be either osteoproliferative (enlarged fuzzy areas on bone) or osteolytic (holes in bone). If an Arizona greyhound is ever diagnosed by x-ray with "bone cancer," be sure a cocci titer is done. I strongly recommend a cocci titer be done early on any Arizona greyhound sick for any reason. Catching the disease a few weeks early may save months or years of treatment down the road. Additionally, be sure to also check the greyhound for Ehrlichia, as some greyhounds have both diseases together.

Treatment:

Treatment for Valley Fever has recently become less expensive as the antifungal drugs used to treat it are finally off of patent. The most common treatment has always been ketoconazole (Nizoral) tablets as it is the least expensive antifungal. However, you can now buy compounded fluconazole, a more effective drug with less side effects, for almost the same price. Antifungals tend to cause appetite loss in greyhounds - fluconazole less so than ketoconazole and itraconazole. If one antifungal isn't tolerated, sometimes switching to another is the answer. If the dog isn't too sick, sometimes the dose can be adjusted gradually so that the dog can slowly work up to the full dose. Force-feeding should be done if you've got a sick dog who needs the full dose immediately.

If there is one bit of advice I can give regarding greyhounds and Valley Fever, it is to force feed the greyhound if he loses his appetite on antifungal meds. You need to get 3-4 cans of food daily into him, preferably with the most fat and calories you can find. It is easy to do and can save your greyhound's life [instructions may be found in Tips.pdf]. A greyhound cannot beat Valley Fever if he continues to lose weight during treatment. Dr. Shubitz at the Valley Fever Center for Excellence at the University of Arizona told me that most of the problem eaters she hears of are greyhounds and other sighthounds - she personally force fed her own Valley Fever whippet for 9 months! Usually after 3-4 weeks of force feeding, a greyhound will be feeling improved enough from Valley Fever that he regains a reasonable appetite.

The best deals on the antifungals are with the compounding pharmacies in Phoenix, such as Pet Health Pharmacy (800) 742-0516. Most dogs will improve on antifungal drugs if they are not too far gone and are not allowed to continue to lose weight, but may relapse when the pills are stopped as "azole" drug action is fungiSTATIC. This means that the drug does not kill the fungus, but merely keeps it from reproducing, leaving it up to the body's immune system to get rid of the fungus. Treatment of bone lesions for years is the norm, and some greyhounds take antifungal meds on and off for the rest of their lives as relapses occur, or more prudently, in my opinion, are maintained at a low dose once apparently "cured" to prevent relapses. Until a few years have gone by without a relapse, many veterinarians consider Valley Fever not to be cured, but only in remission.

A treatment mode for serious cases is an injectable intravenous drug called amphotericin-B (Fungizone). This drug can be extremely toxic to the kidneys and has been dubbed "amphoterrible" by many medical personnel. As I like to say, "if it doesn't kill the dog it will kill the fungus." (Not entirely true, some dogs will still need follow-up oral antifungals). Amphotericin-B has a fungicidal or killing action on the fungus and is also a powerful immunostimulant. While the drug itself is cheap, treatment is expensive due to the necessary

hospitalization and monitoring. The treatment course is much shorter than with oral meds; a standard full treatment course is two intravenous treatments weekly for two months. Some dogs will not tolerate amphotericin and treatment may need to be less often, at a lower dose, or stopped altogether. Close monitoring of kidney function is essential. I have successfully treated about 20 ketoconazole-refractory dogs with amphotericin-B, including two greyhounds. A third greyhound became jaundiced (liver toxicity) after the first dose, but took ketoconazole with no problems for the next 4 years. Owner and veterinarian must weigh benefits vs. risks when deciding which treatment to use.

