

Blastomycosis

By Dr. Karen Becker

Hi, this is Dr. Karen Becker, and today we're going to discuss blastomycosis. Blastomycosis is a systemic fungal infection caused by *Blastomyces dermatitidis*, an organism that grows in rotting wood and wet soil.

The *Blastomyces* fungus thrives in wet environments like swamps, lakes, and on riverbanks, where damp soil and lack of direct sunlight encourage its growth. The fungus is also found in locations that harbor decaying organic matter like wooded areas, forests, and farms. Blastomycosis infections are prevalent in areas located near water, including the Mississippi, Ohio, Missouri, and Tennessee River basins.

Risks and Manifestations

The infection is seen most often in large breed dogs, male dogs, and especially in hunting dogs, sporting breeds, and dogs that spend a lot of time in environments where the *Blastomyces* organism could exist. Female dogs are also susceptible, of course. And occasionally, cats can also acquire the infection.

Studies indicate most dogs that acquire a blastomycosis infection live within a quarter of a mile of a body of water.

The fungus releases airborne spores into the environment that can be inhaled by people or animals. This is the most frequent method of transmission, though the spores can also enter through the skin. In fact, just digging in the soil can really release the spores. Once inhaled, the spores travel through the lungs and become large, thick-walled, yeast-like organisms that multiply within the lung and other tissues of the body.

Blasto is known as a dimorphic pathogen, meaning it occurs in two distinct forms: it grows as a mold in the environment and as yeast in tissue. Blastomycosis has the potential to cause significant pulmonary disease. The yeast also tends to travel to other sites in the body, especially the skin, eyes, and the joints in dogs.

If your dog has a blastomycosis infection, he can't directly infect other members of the family – humans or pets. However, care should be taken when handling any secretions. For example, in draining lesions, you should use protective gloves and wash your hands thoroughly after you've had contact with your infected pet's sores, if the fungus has produced skin lesions.

There's no need to isolate infected pets from other family members. However, you should take care to avoid the area where your dog likely picked up the *Blastomyces* spores. This is particularly important for infants and toddlers, elderly family members, and anyone who is immunocompromised.

Symptoms and Diagnosis

Symptoms of blastomycosis infection in dogs include loss of appetite, fever, weight loss, depression, inflammation of the iris of the eye and discharge from the eyes as well, coughing, wheezing, and pus-filled skin lesions. More serious symptoms can include sudden blindness, lameness, inflammation of the testicles, enlarged lymph nodes, and seizures.

Unfortunately, blastomycosis is often misdiagnosed even by the best veterinarians, sometimes as cancer and sometimes as a bacterial lung infection. Needless to say, treatments for cancer and antibiotics for bacterial infections will not address the fungal infection and can lead to permanent damage or even death, if your pet goes undiagnosed.

If your dog is showing symptoms as described previously, if you would say in the last six weeks he's just not getting any better, and could have been in an environment that was harboring the Blastomycis fungus, your veterinarian should test for a fungal infection.

Blastomycosis is best diagnosed through examination of a lymph node, fluid drain from skin lesions by a transtracheal wash, or by examining lung tissue. Tissue samples may need to be taken to check for fungal organisms. There's also a blood test screening called an AGID test or antigen ID test for exposure to Blasto. But a positive result doesn't mean your dog always has infection, only that he's been exposed.

Chest X-rays often reveal kind of like a snow storm pattern. Urine screening test can also be very beneficial at attaining a diagnosis.

Treatment

Traditional treatment for a blastomycosis infection is oral administration of an antifungal drug. These medications all require long-term treatment, sometimes for many, many months. All of these medications are very expensive. And of course, all of them carry serious potential side effects.

The preferred antifungal at the moment for dogs diagnosed with this infection is Itraconazole, which is better tolerated and has fewer side effects than the other older antifungal drugs.

I also recommend supplying with a nutraceutical called quantum nucleotides (which helps to stimulate an immediate immune system reaction), as well as supplying oil of oregano in capsule form, which is excellent at aiding the body in fighting fungal infection.

For many dogs, the critical period during treatment is the first 24 to 72 hours, as the antifungal drug begins to kick in and kill off the fungi. Since there are typically a large number of organisms in the lungs, there can be an overwhelming inflammatory response that can result as the fungi die off. Respiratory distress can be a big problem during the first few days of treatment.

Whatever drug is used, it must be given for a full month past all the signs of infection. Dogs with severe breathing difficulties may require supplemental oxygen until their lungs return to normal function.

Blastomycosis is a serious fungal infection. The sooner that you seek treatment, the better the chance your dog will have of a full recovery.

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