



BLASTOMYCOSIS: A HIDDEN THREAT TO YOU AND YOUR PETS

(May also be known as Gilchrist's Disease, 'Blasto')

WHAT IS BLASTOMYCOSIS / BLASTO?

Blastomycosis is a fungal infection caused by blastomyces dermatitidis. Blastomyces dermatitidis grows in the soil in the Mississippi, Ohio and Missouri river valleys, areas adjacent to Lake Michigan, Southern Canada, and along the Eastern Seaboard. Only some of the animals in these areas will be infected. The primary risk factor is an individual with a compromised immune system.

It most commonly occurs -

- along rivers banks or lakes,
- in rotting vegetation or fallen trees
- MULCH, top soil and even potting soil

The infected materials are usually in a relatively small area- possibly just a few square yards or a rotting log.

Blasto is most commonly diagnosed in humans and dogs, cats and horses, which live in, or have traveled in these regions.

In a 2008, a release from the State of Wisconsin Department of Health stated that Blastomycosis was a 'rare' fungal infection. This is probably why it is not always what comes to mind first for a physician or veterinarian attempting to diagnose an ailment that has symptoms in common with so many other ailments- Lyme's disease, pneumonia, cancer, other systemic diseases and viral infections.

Judging from the number of reported cases and deaths of dogs since then, it may be assumed that it is more prevalent than formerly believed and, hopefully, that it's diagnosis is becoming more common in the veterinary assessment of an ill animal.

'Uncommon' may be a more accurate term for the frequency of infection than 'rare'.

HOW BLASTOMYCOSIS IS TRANSMITTED TO YOUR DOG:

Spring and Autumn seem to be the most prevalent seasons of contagion, but is possible at any time, usually following contact with water or excavated earth. When material containing the Blasto organism is disturbed, the spores of the fungus blastomyces dermatitidis are dispersed into the air and then inhaled.



Most at risk are dogs that have extensive outdoor exposure. Since digging is a favorite pastime for some dogs, exposure is not surprising. Sporting dogs that are often in and around ponds, lakes and rivers are most likely to contract Blasto. It is unknown why intact males are more at risk than females. Although the females are generally more responsive to treatment, they are also more prone to relapse.

If you are a cat owner that allows your cats to roam outside or even just supervised strolls in your fenced yard- remember your cat will scratch at dirt to cover their eliminations.

THE SYMPTOMS AND PROGNOSIS:

Blastomycosis develops when the spores establish a primary infection in the lung. Symptoms appear weeks to months after exposure. Chronic infection spreads throughout the body via the bloodstream- usually the eyes, bones, skin, lymph nodes and even the spinal cord and brain.

Symptoms of the Blastomycosis systemic infection:

- Skin lesions, and draining ulcers or abscesses
- Bone, muscle and joint pain, lameness
- Lymph gland swelling
- Swelling of the brain, seizures
- CNS disturbances, paralysis
- Fever, loss of interest, listlessness, weight loss
- Coughing, shortness or breath, reluctance to walk, raspy bark
- Eye problems, corneal clouding, swelling, pain, sudden blindness

The earlier the diagnosis the less likelihood of:

- Permanent joint and bone damage
- Blindness
- Loss of limbs or eyes
- lung damage
- Central nervous system damage
- paralysis
- death

Dogs with eye or brain involvement or with compromised liver or kidney function are least likely to survive the disease or its treatment.

If the eye(s) are infected with the fungus, it is often removed. The tissue of the eye does not respond well to the treatment and can sustain the fungus for re-infection of the body once treatment is stopped.



65% of the dogs diagnosed with Blastomycosis will survive. Dogs that receive the treatment regimen have a survival rate of about 85%. Of those- 25% will relapse, requiring another regimen of treatment.

TREATMENT AND DISEASE MANAGEMENT:

Pets with the disease do not need to be isolated from their human family or other pets in the home. However, always maintain the utmost care when attending to any draining lesions- protective gloves and hand sanitation is highly recommended.

People with immunodeficient considerations should not handle pets that are infected.

Blastomycosis is not considered to be zoonotic (able to be transmitted from animal to human). It is believed that other than infection from the original source, the only way to infect another animal or human is through the drainage material from skin lesions

Once an animal is infected, the fungus exists as a single cell yeast that does not *appear* to be contagious. In this phase it can not be contracted by airborne spores. A more recent study confirms that there is some risk of infection if the skin is punctured by a sharp object infected with the fungus- a sharp stick, a bite (accidental needle stick). The much more likely risk of infection comes from contact with the same original source(s).

The required treatment for Blastomycosis is the administration of antifungal medications for many weeks and even months. As is common in pervasive and stubborn yeast infections, once treatment has started the yeast begins to fight back. Symptoms will increase in severity, often getting very much worse before they get better. Respiratory distress can become a serious complication in the first few weeks.

The longer the disease goes undiagnosed and untreated, the more aggressive, lengthy and expensive it becomes- often lasting over 6 months.

Side effects of some of the medications used to treat Blastomycosis can be severe. There are several available though, and your dog's vet should be aware of these and can adjust the dosage or switch to a different one.

HOW IS BLASTOMYCOSIS DIAGNOSED?

Initially, the disease manifests as respiratory infection and pneumonia. When the symptoms are unresponsive to treatment, diagnosis for other illnesses are then pursued. CBC (complete blood count) and chemistry panel usually show an elevated white blood cell count. This is not definitive though, considering white blood cell proliferation is the usual result as the body attempts to fight any type of infection. Chest X-rays are next and show pneumonia in the lungs.



The most accurate first phase tests to identify blastomyces dermatitidis are through biopsy or fine needle aspiration and culture of the collected specimen. Fungal titers are used to confirm the diagnosis and to differentiate the Blasto from other fungal diseases.

To receive the most accurate results; to identify all the effected parts of the body; and to monitor treatment effectiveness- imaging tests (CT scan, etc) are required. Although, obviously significantly more expensive, with the addition of this information, prognosis may be much more favorable.

Depending on the severity of symptoms, some dog owners, due to the length, difficulty, expense and its treatment's potentially serious side effects, understandably choose to have their pet euthanized. Its early detection and treatment give the dog and owner a more positive long term prognosis.

HELP OTHERS!

If you or your pet has been diagnosed with Blastomycosis, be sure to alert your family physician! This not only helps your family should anyone else become ill, it may help alert the health community of areas of contagion. The source may be near your home or dog park, walking trail, or yard, etc.

Unfortunately there is no way to rid the environment of the organism. It lives everywhere and identifying a source concentrated enough to infect is impossible

You and your veterinarian have an excellent resource for more information at www.blastomycosis.ca

***PERSONAL OBSERVATION:**

A dog that rarely left his large, fenced yard, except for walks in an urban neighborhood, contracted Blastomycosis. After months of treatment, he unfortunately died. Parts of trees that had been cut down, the sawdust and stump grinding remains that had been left in the yard were determined to be the source of his infection.