

Cryptococcosis

Cryptococcosis is the most common systemic fungal infection in cats. It is less common in dogs.

Cause

Cryptococcosis is caused by a fungal organism that is found in the soil. The infection is seen most commonly in outdoor cats but has been reported in indoor cats as well. Canine infections are less common but can occur. Infective fungal elements grow most readily in moist soil, so this infection is seen more commonly in geographic areas with heavier rainfall, such as the Pacific Northwest. The organism grows readily when there is rich organic matter in the soil, such as bird droppings and decaying plants. The infection can only be picked up by inhaling the organisms from the soil and is not spread from cat to cat. Human infections are rare, but most commonly seen in persons with compromised immune systems. Human patients acquire the infection from infected soil, not exposure to a cat with Cryptococcosis.

Clinical Signs

Most commonly, patients develop chronic nasal discharge early in the disease. Discharge is often thick, tenacious, and bloody, yellow or green in color. Patients often sneeze frequently and rub at their nose and face. The nasal discharge is usually unresponsive to antibiotic therapy, although some improvement may be noted because of the presence of opportunistic bacteria in the patient's inflamed nose and sinuses. Cats will often have swelling over the bridge of the nose, often in combination with nasal discharge and sneezing.

Without appropriate therapy, the infection spreads into the tissues that surround the nose, such as the sinuses, eyes, and, sometimes catastrophically, the brain. Although the disease is less common in dogs than cats, dogs are more likely to have signs of central nervous system infection than cats. The organism can also become systemic, by spreading through blood and lymph vessels into the patient's lungs, skin, and abdominal organs. Patients with neurologic or systemic involvement can be gravely ill, lose a significant amount of weight, and have signs of multi-organ failure.

Diagnosis

Diagnosis of Cryptococcosis is made by identifying the organism in the nose or another infected organ. There is a blood test called the latex agglutination test that detects the DNA of the organism. This test is highly sensitive and specific and should be submitted when a patient is suspected of having the disease. In most patients, a thorough workup to determine the extent of the infection is recommended. This is likely to include blood tests and imaging studies such as radiographs (X-rays) and an ultrasound exam. In patients that have suspected nasal Cryptococcosis, a CT scan will help determine if it is safe to biopsy the nose. Because the brain sits just behind the back of the nose and is only separated by a thin plate of bone, doing a biopsy without first doing CT imaging carries significant risk to the patient.

Treatment

Therapeutic options for patients with Cryptococcosis can vary with the extent of the disease. Fungi are tenacious organisms and grow by branching, in contrast to single-celled bacteria that are generally easier to destroy. Patients with mild to moderate infection are treated with oral anti-fungal medications.

Oral medications reduce the growth of the fungus until ultimately the patient's immune system can clear the infection. Medications must be continued for months until the infection is cleared.

More serious infections may require aggressive therapy with intravenous antifungal medications as well as aggressive supportive care. Intravenous therapy is reserved for the most serious cases due to costs and potential drug toxicity. Supportive therapies may include hospitalization for intravenous fluids, nutritional support by the placement of a temporary feeding tube, and hyperbaric oxygen therapy (HBOT).

Hyperbaric oxygen therapy is only available at some veterinary specialty hospitals. HBOT involves placing the patient in a chamber and delivering oxygen at high atmospheric pressures. This encourages oxygenation of deeply damaged tissues and discourages the growth of the fungus. There are some risks of this procedure, particularly in patients with central nervous system infection.

Prognosis

Prognosis depends upon the extent of the disease. This is an infection for which early diagnosis, particularly before systemic or neurologic signs develop is important. For many patients with Cryptococcosis, the prognosis is good with therapy and monitoring. Post therapy relapse can occur in roughly 30% of patients; this number may be reduced by appropriate monitoring and continuing medications well beyond perceived clinical cure. Antigen blood testing can be used to assess response to therapy and monitor for relapse.

Long Term Follow-Up

Depending on the severity of the disease, patients may need to be closely monitored (weekly) for several weeks and then less often (monthly) once the disease is under control. Patients with milder cases of Cryptococcosis still need long term monitoring, as therapy with anti-fungal medications will continue for 6-9 months. Patients with Cryptococcosis are generally followed by the internal medicine specialists at Veterinary Specialty Center. Medications have some potential side effects, so blood tests, along with other appropriate testing will be recommended, depending on the severity and extent of the disease. Because medication and follow-up recommendations are based on physical exam findings as well as radiographs and lab tests, we recommend that the follow-up be done at Veterinary Specialty Center if you and your primary care veterinarian want the internal medicine specialists to continue to make therapeutic recommendations. Discontinuing medications too soon can result in a relapse of the infection.