



Fungal Nasal Disease Fact Sheet

Fungal (mycotic) infection of the nasal and paranasal sinuses is a well-recognised cause of chronic, mucopurulent discharge in the dog.

Clinical reports have suggested that the disease may contribute to between 12 and 34% of all nasal disorders.

A diagnosis of mycotic rhinitis appears to be becoming more frequent, as veterinarians develop an increased awareness of the disease.

What causes mycotic rhinitis?

Mycotic rhinitis in the dog is caused by infection with either *Aspergillus* or *Penicillium* spp – the same organisms that form ‘bread-mould’. *Aspergillus* is a very common fungal organism commonly found in compost piles, stables and barns. The organism has a world-wide distribution, and is the cause of similar clinical disease syndromes throughout the world.

Aspergillosis in the dog is usually limited to the nasal and paranasal sinuses, though infection of other body systems may occur rarely. The German Shepherd appears to be at particular risk of developing disseminated forms of the disease. Colonisation of the fungus in the nasal

and paranasal sinuses results in progressive turbinate (scroll-like bones in the nose) destruction through the combined influence of local damage to blood vessels, and direct toxic effects of the fungal products.

Nasal aspergillosis can affect a variety of dogs, but is typically confined to the 'long nosed' breeds. A disease predilection in the Golden Retriever has been reported consistently by many authors. Male dogs appear to be at higher risk of developing disease than females. Disease has been reported in dogs ranging from one year of age to twelve years of age. However, 77% of dogs are less than 8 years of age at the time of diagnosis. A seasonal incidence of infection has not been reported, and environmental studies have shown no significant fluctuation in spore counts during the year. Anecdotal evidence suggests that rural dogs, or dogs walked regularly in the country-side, are at greater risk of developing infection than their urban companions.

What are the signs of mycotic rhinitis?

Clinical infection of dogs with any of the mycotic agents results in a nasal disease characterised by a profuse mucopurulent (greenish-yellow) nasal discharge, intermittent sneezing and, usually, facial pain or discomfort. Often the animal is depressed and withdrawn. Nose bleeds may be an occasional finding. Ulceration and depigmentation of the nostrils is considered a characteristic feature of nasal aspergillosis, although this is not a consistent finding in all cases.

How will my vet diagnose mycotic rhinitis?

Diagnosis of the disease is usually based on the outcome of clinical examination, radiology, rhinoscopy and serological testing. Several other forms of nasal diseases may present with similar signs, and it is important that these diseases are excluded.

Growth of the fungus in the nose may cause some characteristic destructive changes to the nasal tissues, as a result of toxins produced by the fungus.

How is the disease treated?

Over the years, a variety of agents with reported anti-fungal effects have been used in the treatment of the disease. Treatments have been associated with mixed success. In the last ten years, treatment with newer generations of the anti-fungal drugs has resulted in greater effectiveness of treatment.

Numerous studies have shown that treatment with oral tablets does not give consistent clinical cures. As well as their lower effectiveness, systemic anti-fungal drugs are also associated with a high incidence of systemic side-effects. Liver injury, nausea, and skin

eruptions have all been reported, and necessitate early withdrawal of the drug. Current recommendations in the treatment of nasal aspergillosis limit the use of systemic medication to cases where the disease is considered to have extended beyond the nasal cavity.

Best results are achieved where anti-fungal solutions are instilled directly into the nose. This is usually performed under an anaesthetic. The drug is left in the nose for a period of up to one hour. Prior to recovery, excess drug is allowed to drain from the nose. Sometimes, antifungal cream may also be injected into the frontal sinuses to provide a prolonged period of exposure with the drug.

How effective is this treatment?

Only about 65% of dogs will respond to an initial treatment. Up to four treatments may be required in some cases. About 1 in 10 dogs will prove very difficult to manage and may require more aggressive (surgical) efforts to control the disease. Treatment with oral anti-fungal drugs may also be required in some cases.

Repeat rhinoscopy may often be required to confirm treatment success, as the nasal discharge may persist for many weeks after resolution. An improvement in mental demeanour is a good indicator of treatment success in most cases. This is usually seen within a few weeks of treatment.

Some animals may have a residual “watery” nasal discharge, and intermittent sneezing despite successful resolution of fungal disease. This appears to be related to severity of tissue destruction and alteration of the nasal microenvironment. There is a correlation between the occurrence of persistent signs with disease duration prior to treatment, so prompt intervention is advisable.

If you have any further questions about mycotic nasal disease you should speak to your veterinary surgeon who will be able to discuss this condition with you more fully.

If you are concerned about the health of your pet you should contact your veterinary surgeon.