

Aspergillosis

About aspergillosis

Aspergillus fumigatus is ubiquitous in the environment, meaning that this yeast can be found everywhere. However, higher density populations are commonly found in food kept in feed bins or in damp environments e.g. foods kept in a shed, and also where poor husbandry is present e.g. damp cages containing old food. Many (if not all) birds are exposed to *Aspergillus* species, and most exposures do not result in clinical disease. *A. fumigatus* is usually an opportunistic pathogen that is **NOT** contagious, but affected birds may act as a source of fungal spores to others.

Affected species

Any bird may be affected by *Aspergillus* species, but it is most commonly associated with birds of prey and with parrot species that are taking a seed-based diet.

Clinical signs (symptoms)

A. fumigatus is known as a silent killer: there are no specific clinical signs that accompany this disease but affected birds exhibit alarming weight loss for no apparent reason. Affected birds may have a change of pitch in, or loss of voice, which is often the first thing noticed by parrot owners. Birds may exhibit laboured breathing because plaques of inflammatory material become lodged in the airways, so may sit with their legs wide apart, may bob their tail to breathe or sit with their wings held out from the body. These patients are often reluctant to fly, and are often reluctant to eat despite their weight loss.

Diagnosis

Unfortunately, the diagnosis of *A. fumigatus* is often a diagnosis of exclusion (everything else is ruled out first), but there may be time pressure to find and treat the cause with these birds. Blood tests may indicate an inflammatory process and along with the history, should form a basis of suspicion. X-rays should be taken and may show mottled patterns over all of the air passages. Swabs may be taken from the trachea for culture, but *Aspergillus* species are very slow growing organisms, so results can take weeks to months to get back. Ideally, the patient should undergo endoscopy, which involves the insertion of a camera into the airways. This enables the veterinarian to both see and sometimes to remove plaques of material present, and to directly administer treatment onto affected areas. At the same time as having endoscopy, a fluid sample can be taken for culture, directly from the airways.

Aspergillosis and you

Aspergillus fumigatus is zoonotic, meaning that it can be passed between species, and can be transmitted from affected birds to people.

This applies particularly to those people with chronic respiratory difficulties such as asthma, or the immunosuppressed such as the very young, the elderly, people with chronic conditions or those receiving chemotherapy. Fungal spores may also be carried as fomites on clothing so that regular contact with immunosuppressed people who are not in direct contact with the affected bird itself can still result in potentially very serious (if not fatal) infections. Strict hygiene measures must be observed if anyone in an 'at risk' category will be near or visited by someone near to the affected bird, including hand-washing and clothing changes.

Treatment

The first question to consider in these cases is, 'should we treat'? Treatment of these cases is anything but easy, takes a very long time and there is no guarantee that a cure can be achieved. The treatment is expensive, so this should also be factored in. In addition, *Aspergillus* can affect those in contact with the affected bird over long periods of time, so if it is likely that the owner's health will be severely compromised, euthanasia will usually be recommended for the patient.

The most effective treatment utilises endoscopy. The patient undergoes an anaesthetic for endoscopy every 2 weeks to 6 months to remove plaques and to apply topical treatments to the affected areas. Although this method is the most effective, it requires repeated general anaesthetics and repeated x-rays to monitor the regression of the plaques. Another method of treatment involves nebulization with anti-fungal agents. This negates the need for anaesthesia but is not as effective as endoscopy. Oral systemic anti-fungal medications may also be used, but these risk damage to the liver.

Any of the treatment options are a long-term commitment, with treatment lasting from a few weeks to many months. The response is not guaranteed, so a patient could be treated for 9-10 months but still be euthanised (put to sleep) or pass away with sudden death. However, treatment may be curative in some cases and these patients make good recoveries. In all cases, supportive treatment will be needed concurrently with the medication course, and may include supplementation of vitamin A and nutritional support.