

# Octodectes cynotis in cats and dogs – diagnosis and management techniques

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***OTODECTES cynotis* is the most important ear mite in the cat and dog ([Figure 1](#)). It is the most common cause of ear problems in cats, where it is said to account for approximately 80% of all cases of otitis externa.**

While it can be identified in dogs – especially puppies – it is a far less common primary trigger for canine otitis externa, with allergic otitis being the most frequent cause of ear disease in the dog.

*O cynotis* is a browsing, rather than burrowing, mite and although it will generally feed within the external ear canal, its feeding activity is not confined to the ear. It can be found on the skin adjacent to the ear and can also be identified on samples taken from areas such as the rump of the animal.

The mite's feeding activity causes intense irritation within the ear, which leads to the production of large amounts of thick ceruminous discharge – often described as “coffee ground” in appearance. Mites are visible with the naked eye as minute white parasites. Males are approximately 400µm x 300µm in size, while females are slightly larger at 500µm x 300µm. They are photophobic and can be seen as tiny white dots scurrying away from the bright light of the otoscope when observed within the ear canal.

## Life cycle

The *Otodectes* life cycle is typical of psoroptic mites, taking three weeks from egg via larval and nymph forms to adult ([Figure 2](#)).

## Clinical signs

Typically, animals present with a thick, black/brown, crumbly, waxy discharge in the affected ear, with accompanying pruritus ([Figure 3](#)). This may be manifested as head shaking, scratching at the ears or rubbing the head along a rough surface such as the side of a chair or a carpeted floor.

Often, the clinical signs do not correlate with the numbers of mites within the ears; this is because in addition to the mechanical discomfort induced by the mite's feeding activity, a significant degree of pruritus is created by a hypersensitivity reaction to the mite's saliva. It is this type one hypersensitivity reaction that is thought to lead to an increased severity in clinical signs in some animals.

When mites feed on the skin of the animal at sites distant to the ear they will cause a localised reaction, which can lead to areas of acute moist dermatitis. Although *Otodectes* has been reported as a zoonotic infection, human cases are very rare.

## Diagnosis

A diagnosis of *O. cynotis* can be made on the basis of clinical signs and identification of the mite or any of the immature stages on samples of wax taken from the ear, or from tape strippings taken from the coat.

Wax can be collected on a cotton applicator and mounted in either liquid paraffin or potassium hydroxide on a microscope slide ([Figure 4](#)). When mounted in liquid paraffin the mites are not killed and remain motile within the specimen, aiding identification. However, if the sample is not to be viewed for some time after collection, mites may die and curl up on the slide in liquid paraffin. The author's preference is, therefore, to use potassium hydroxide, which – although it will kill mites – has the ability to clear the sample, often making identification of the mites much easier.

## Therapy

Therapy for *Otodectes* infestation may be topical and/or systemic. The author's preference is to use both modalities. Topical cleaners play an important part in any therapeutic regime. The use of a mild ceruminolytic cleaner helps remove wax to facilitate better penetration of a topical miticide and also makes the animal feel more comfortable.

Ear drops that contain tiabendazole (expired in June 2014) – which is recognised as having excellent acaricidal activity against all stages of the mite life cycle – offer a good topical option for therapy. Many of the licensed topical ear drops do not contain a specific miticide and are thought by some authorities to work by “smothering” the mites, as most contain an “oily” type of base such as propylene glycol, liquid paraffin or sesame oil. This may be reflected in the fact administration of these products suggests once or twice daily application for up to three weeks.

The presence of a topical glucocorticoid in ear drops helps to reduce swelling and inflammation

within the ear and aids in the treatment of any hypersensitivity reaction.

Topical therapy does not address the possibility of ectopic infestation with mites at sites distant from the ears. Lesions at these areas are best treated by the use of systemic medication. Many of the spot-on or spray-on flea preparations can be used for this purpose.

Where a prolonged course of topical therapy to resolve otic infestation is not possible – due to the fractious nature of an animal or in feral cats where human contact can be intermittent – systemic medication may be the only way the animal can be treated. In these cases the author would generally suggest the cat is admitted and sedated or anaesthetised so the ears can be cleaned out before starting systemic drugs.

Avermectins form the mainstay of systemic therapy when both otic and ectopic disease is to be managed. Although such drugs as ivermectin can be used off licence, there is little indication to use these with the availability of safer licensed preparations. There have been reports in the literature of fatal reactions in young kittens given ivermectin by injection (Frischke and Hunt, 1991).

Moxidectin and selamectin are available as licensed topical spot-on preparation in both dogs and cats. Moxidectin has been shown to be 99.6% effective in the therapy of *Otodectes* in cats when two treatments are applied at 30-day intervals. In dogs, similarly high efficacy rates of 98% have been reported when moxidectin has been used topically twice at 28-day intervals (Bayer studies). Selamectin has demonstrated a 100% efficacy when used to treat *O cynotis* in cats and dogs (Shanks et al, 2000; Six et al, 2000). The manufacturer's recommendation is a single treatment in cats and two applications at a 30-day interval in dogs.

## References and further reading

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Figure 1. *Otodectes* mites.

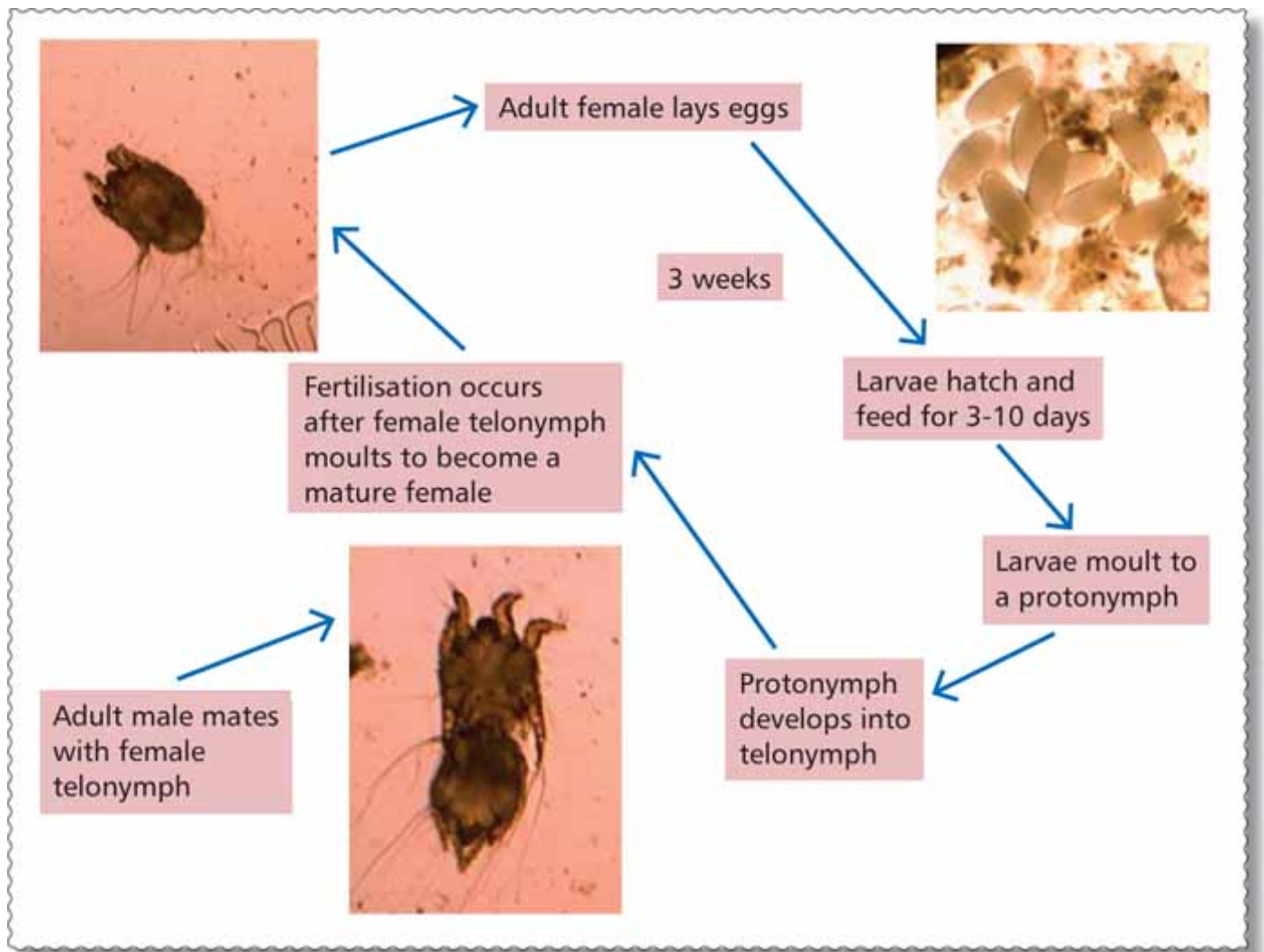


Figure 2. The life cycle of *Otodectes*.



Figure 3. Thick crumbly discharge from a cat's ear with *Otodectes* infestation.



**Figure 4. A sample of wax can be rolled on to a slide to be examined.**

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