Canine Demodicosis
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What are Demodex mites? And what is demodicosis?

Demodex spp. are cigar shaped microscopic parasitic mites that live within the hair follicles of all dogs. These mites are passed to puppies from their mothers in the first few days of life, and then live within the hair follicles for the duration of animal’s life without causing problems. It is thought that the body’s immune system helps to keep mite numbers ‘in check’ and prevent the populations getting out of control. For the vast majority of dogs, these mites never cause a problem. However in some instances, mite populations become huge resulting in inflammation and clinical disease. This disease is called demodicosis.
What causes demodicosis?
There are two presentations of demodicosis depending on the age at which it develops. Juvenile onset demodicosis tends to occur in puppyhood between the ages of 3 months and 18 months, and occurs in both localised and generalised forms. The exact cause is quite poorly understood but probably occurs due to a mite specific genetic defect in the immune system which allows mite numbers to increase. This defect may or may not resolve as the puppy ages. It is thought to be 'mite specific' because these puppies are healthy in all other respects and do not succumb to other infections. Generalised demodicosis can be a very severe disease.

Adult onset demodicosis usually occurs in the generalised form and in dogs over 4 years of age. It is generally considered a more severe disease than its juvenile onset counterpart. In these cases, mite numbers have been controlled in normal numbers in the hair follicles for years prior to the onset of disease, which tends to result from a systemic illness affecting the immune system. Common triggers for adult onset demodicosis include hormonal diseases and cancer.

What are the clinical signs?
Localised demodicosis in juvenile dogs presents as patches of hair loss and red inflamed skin. These patches often occur around the face, head and feet and are not typically itchy (Figure 1).

Generalised disease in juvenile and adult dogs is a more serious disease, although there is no uniformly accepted way of defining the number of lesions needed to classify generalised disease. Patches of hair loss and inflammation develop which often coalesce into large areas of thickened skin and sores (Figure 2). As the parasites damage the hair follicles, secondary bacterial infections are very common and affected dogs can develop discharging lumps within the skin (Figure 3). Bleeding from these lesions is not uncommon. As with the localised form, lesions often start around the head, face and feet, but often spread to involve large areas of the body surface. The ears can also be affected with this parasite, resulting in secondary infections. Itchiness and pain are commonly seen.
How is it diagnosed?

Demodicosis can often be suspected following a review of the animal’s history and assessment of the clinical signs. The parasitic mites within the hair follicles result in plugging and the formation of ‘black heads’. The plugged follicles also cause large amounts of scale to be present on the hairs themselves.

Demodicosis can usually be diagnosed relatively easily. Hairs can be plucked from the affected skin and then examined under a microscope for the presence of the mites (Figure 4). Alternatively, the skin can be squeezed and then scraped with a blade to collect up the surface debris from the skin. This material is then also examined under a microscope for the parasites.

If the numbers of mites are abnormal and if mites can be recovered from multiple sites, demodicosis can be diagnosed. Rarely, a biopsy of affected skin is needed to diagnose the condition.

Is it contagious?

Demodex mites from dogs are considered non-infectious to in-contact animals and people. It is thought that Demodex mites can only be passed between dogs in the first few days of life from the mother to the pup.

What is the prognosis?

The prognosis for localised disease in young dogs is very good, and most recover uneventfully from the disease. Generalised cases in young dogs can take many weeks or even months of treatment, but it is usually possible to control the disease with a good long term outlook.

The prognosis for adult onset generalised demodicosis is far more uncertain, as many of these dogs have an underlying systemic illness. If this illness can be identified and cured, the prognosis for managing the demodicosis is much better. Some cases require long term medication to keep mite numbers controlled.

How is it treated?

The treatment used for demodicosis depends on the age of the animal and the severity of the disease. Mild and localised forms of demodicosis in young dogs may not require treatment, and may resolve spontaneously as the animal ages. These cases should be closely monitored if no treatment is given.

Generalised cases in young dogs and those in adult dogs require intensive treatment. Secondary infections must be treated with courses of antibiotics, and a swab is often submitted to a laboratory to grow the organisms to ensure the correct antibiotic is selected. The licensed treatments for demodicosis in the UK include a dip solution called Aludex and a spot-on product called Advocate. The dip is performed on a weekly basis until mite numbers are brought under control. Advocate spot-on is generally used for milder cases and is usually used monthly.

In severe cases not responding to the licensed treatments, off-licence treatments must be used. Some of these drugs, such as Ivermectin and Milbemycin, are used for demodicosis in other countries.

An essential part of treating adult onset cases is to identify the underlying illness that triggered the problem. This often requires blood testing and scans (CT, ultrasound) to investigate.

Treatment must continue until mite numbers have returned to a normal level and this can take a very long time. This can only be assessed by repeat sampling of the patient using plucks of the hair or scrapes of the skin.

Why should I bring my pet to Willows?

Our dermatology service is led by a recognised, accredited Specialists and we aim to provide the best possible care and treatment for your pet in our state-of-the-art hospital. Our dermatologist works closely with Specialists in the disciplines of Internal Medicine, Orthopaedics, Soft Tissue Surgery, Neurology, Ophthalmology, Oncology and Anaesthesia and the hospital provides 24-hour veterinary and nursing care to ensure the best possible outcome in each and every case.

If you have any queries or concerns, please do not hesitate to contact us.