Treating canine juvenile onset generalised demodicosis

A guide to the well-known demodicosis which can present in several forms and seems to be on the rise in the UK

Canine demodicosis is a common cutaneous disease caused by two species – *Demodex canis* and *Demodex injai*. There is a third short-bodied species previously described but currently considered to be a variant of *D. canis*, and not differing in its clinical presentation. *D. canis* is the focus of this article.

Demodicosis may be localised, generalised (juvenile onset or adult onset) or demodectic pododermatitis. Some cases of pododermatitis may have originated as generalised cases but not resolved, while others present just with pododermatitis but are still considered under the generalised heading.

Generalised demodicosis due to *D. canis* is one of the oldest dermatoses to be described in veterinary literature. In the Middle Ages, it was known as “redde mange” due to the erythematous lesions of some cases (Figures 1 and 2). Juvenile onset demodicosis is the most common type of generalised case and is described here.

Until recently, juvenile onset demodicosis was considered a difficult condition to cure and earlier texts warned that euthanasia needed consideration in the most advanced cases. Recent advances in treatment have altered this guarded prognosis into a favourable outcome for the majority of affected dogs.

It is known that a genetic predisposition to develop generalised juvenile demodicosis exists. The primary defect leading to the disease is unknown; however, with advanced mite proliferation, dogs develop T-cell exhaustion favouring increasing mite proliferation and secondary pyoderma. Treatment with effective acaricidal products reverses T-cell exhaustion and leads to a clinical cure. It is unclear why some dogs develop generalised demodicosis at a young age and why these dogs after treatment usually remain cured.

If there were an underlying primary genetic cause, it would be logical to expect relapse to be common, but that is not the case.

It has been suggested that dogs with demodicosis have an inherited *Demodex* specific T-cell deficit of varying severity (Miller et al., 2013). This would explain the higher incidence in some breeds and why not all pups in a litter suffer from demodicosis. Indiscriminate breeding of dogs such as Staffordshire Bull Terriers by back street breeders has led to a marked increased incidence of the disease in recent years in the UK.

There are four stages to the life cycle: eggs (lemon pip shaped), six-legged larvae, eight-legged nymphs and eight-legged adults. The mites are transferred from the mother to the pups in the first two to three days of life, which explains why lesions tend initially to involve facial and pedal regions. After initial transfer of mites has occurred, the disease is non-contagious.