

Therapeutic Management of Generalised Demodicosis - A Report of three canines

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Abstract

Generalised demodicosis was diagnosed in three canines based on dermatological lesions and skin scrapping examination. Timely diagnosis and prolonged continuous treatment with acaricides and antibiotics ensured effective treatment.

Keywords: *Demodex canis*; generalised demodicosis; ivermectin

Introduction

Canine demodicosis is caused by burrowing mite *Demodex canis* which usually inhabits hair follicles, sebaceous glands or apocrine sweat glands in skin. The common disease is localized demodicosis, where the condition in most cases gets automatically resolved. Immunosuppression sometimes results in generalized form of disease, wherein the prognosis is poor. However, prolonged, specific treatment and care can cure the condition. The present paper reports three cases of generalised canine demodicosis.

History and Diagnosis

Two Dalmatian puppies (male and female) aged two months and one miniature pinscher adult female aged 2 years were presented with severe, foul smelling and pustular dermatitis. History revealed that lesions appeared as small areas of hairless patches with crusts on face two weeks earlier. The animals were reportedly treated for condition with corticosteroid and vitamin injections. Subsequently, the lesions had spread throughout body after an initial symptomatic recovery. Generalized alopecia, papules, pustules, thickening of skin and crusting were noticed throughout body surface. The severity of lesions was more in face and extremities. Pruritus was noticed and infected, self-mutilated wounds were seen all over body. The animals were dull and depressed and puppies had pyrexia with rectal temperature of 103°C. Presence of various stages of *Demodex canis* mites (Fig.1 - 4) in deep skin scrapings from affected region confirmed demodicosis.

Treatment

Treatment comprised of ivermectin @ 600µg/kg body weight o.d. for 14 days. The route of administration was s/c on the first day followed by oral administration for thirteen days. Cephalexin tablets were also given orally for fourteen days @ 20 mg/kg body weight at 12 hrs interval. Antihistamines were administered parenterally and skin tonics containing Vitamins and essential minerals were supplemented orally. Clipping of hair was done for better contact of topical medicines. A bath with antibacterial shampoo was given to remove pus and crusts. This was followed by topical application of Amitraz, 0.025 per cent solution once in seven days for four weeks. Other topical treatment included cleaning of skin surface with Chlorhexidine solution, followed by application of a paste prepared using neem leaves and turmeric with zinc oxide cream as base. All the three animals showed improvement, while the male Dalmatian puppy died on fifth day of treatment. The adult Pinscher and other puppy recovered and skin scrapings were negative for *Demodex* mites after three weeks. The neem, turmeric paste and nutritional supplements were continued for one month after parenteral treatment was stopped.

Discussion

Demodex canis is part of normal cutaneous fauna of dogs and their numbers are kept low by immune system of dogs. The mites are transmitted from bitches to nursing neonates within first few days of birth. Localised demodicosis is self-limiting and dog's own immune system can overcome the infection. Onset of generalised demodicosis can be triggered by drugs or disease altering the immune response (Mueller, 2005; Gortel, 2006;

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Horvath and Neuber, 2007). The immunosuppression caused by corticosteroid therapy could have exacerbated generalized form of disease in animals in the present investigation.

English sheep dogs. The drug has to be given under supervision for side effects like ataxia, mydriasis, tremors, stupor, salivation, bradycardia and respiratory arrest (Tater, 2008). All crusts

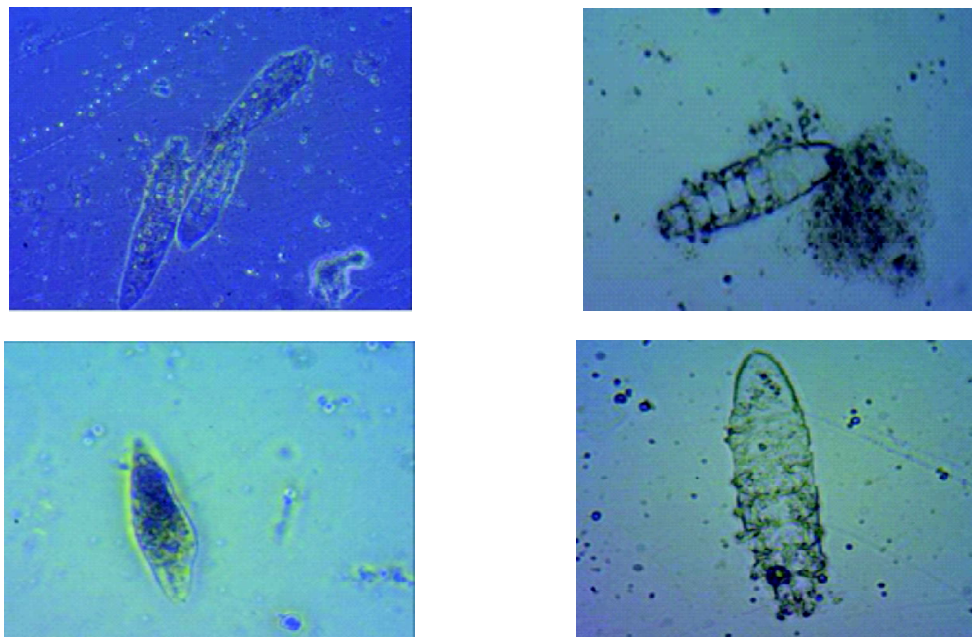


Fig. 1-4: Different stages of *Demodex canis* in skin scrapping

Identification of mites in skin scrapping is a reliable method for confirmation of disease. The presence of any stage of mite, dead mites or mite fragments is considered a positive result (Tater, 2008). With an effective treatment plan, a decreasing proportion of immature mite forms may be first sign of improvement. The disease has been reported in several breeds including Dalmatian and Miniature Pinscher earlier. Given the genetic basis of disease some authors have even recommended neutering of affected.

A rigid and prolonged treatment protocol is essential for complete cure in case of generalized demodicosis. Ivermectin is a macrolide that can act against arthropods. This class of drugs selectively binds to glutamate-gated and gamma-aminobutyric acid (GABA) gated chloride channels in mite's nervous system, resulting in cell hyperpolarization, mite paralysis and finally death. This drug is contraindicated in Coolies and

should be removed (preferably by shampooing with antibacterial follicular flushing agent such as benzyl peroxide). Turmeric and neem are known for their miticidal and antibacterial property. Complete recovery could be ascertained by monitoring for recovery by skin scrapping every week until three results turn out negative.

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