Haryana Vet. (June, 2018) **57 (1)**, 124-125

Clinical Article

DERMATITIS CAUSED BY MIXED *DEMODEX* SPP. and IT'S THERAPEUTIC MANAGEMENT IN A DOG

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SUMMARY

A one year old male non-descriptive dog was presented to the Teaching Veterinary Clinical Complex of Veterinary College and Research Institute, Namakkal with the signs of generalized pruritus, alopecia with erythema and crust formation on cheek, whiskers, neck and median aspect of forelimbs. Microscopic examination of the skin scrapings revealed *Demodex canis* and *D. cornei* and the case was successfully treated with macrocyclic lactone per oral, topical application of amitraz and antibiotic therapy. Haemato-biochemical analysis revealed no remarkable changes except lymphocytosis.

Key words: Dermatitis**,** *D. canis, D. cornei*, Ectoparasiticide, Haemato-biochemical analysis

Dermatitis in dogs due to demodicosis is most commonly caused by *Demodex canis,* however *Demodex injai*, a large bodied mite and *D. cornei,* a short bodied mite, may also be involved (Tater and Patterson, 2008), which colonize the hair follicles and sebaceous glands (Singh *et al.,* 2011).Clinical form is characterized by alopecia, pruritus, pustules with crust or scale formations on the skin (Kambo*et al., 1994)*.Demodicosis may be refractory to the treatment due to the increase in amitraz–resistant mange (Zivicnjak, 2005). Thispaper reports incidence of different *Demodex* spp.in a non-descriptive dog, haemato-biochemical changes and a combination therapy of acaricides and macrocyclic lactones.

A one year old male non-descriptive dog was presented to the Teaching Veterinary Clinical Complex of Veterinary College and Research Institute, Namakkal with the complaint of generalized hair loss, pruritus, alopecia with erythematous lesions and crust formation on cheek, whiskers, neck and median aspect of forelimbs (Fig. 1). The skin scrapings were collected in oil until oozing of blood and transferred to 10 % potassium hydroxide for microscopic examination and whole blood samples were collected for haemato-biochemical analysis.

The case was diagnosed as localized demodicosis due to the mites, long bodied *D. canis* (Fig. 2) and a short bodied *D. cornei* (Fig.3) which were cigar shaped based on morphometry as described by Soulsby (1982). The case was treated with oral ivermectin (Neomec®) @ 400µg/ kg daily for 21 days (Reddy *et al*., 2014) accompanied by topical application of amitraz-12.5% (RIDD®) @ 5 ml (625 mg)/L of water twice weekly for 4 weeks and oral enrofloxacin @ 5mg/kgfor 7 days with benzoyl peroxide shampoo (Petben®) weekly twice for 4 weeks for follicular flushing activity and to combat bacterial infections. New hair growth on affected skin started after 7thday of start of treatment and complete uneventful recovery occurred after 21 days post treatment, as Arora *et al*. (2013) observed recovery after 28 days post treatment.

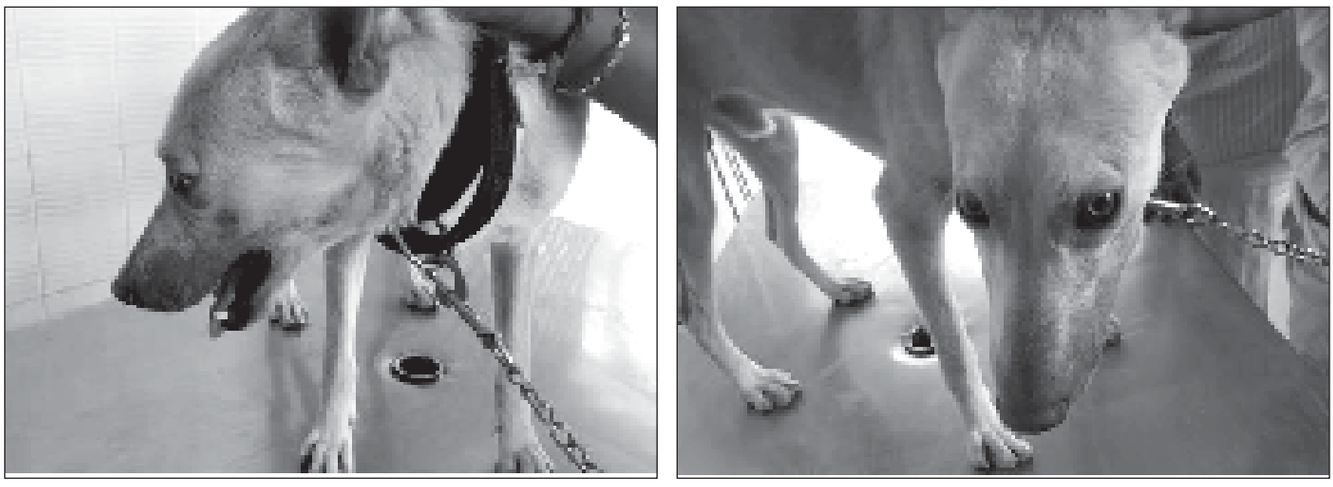

Fig 1. Alopecia and erythematous lesions with crust formation due to demodicosis in a Non-descriptive dog;

Haematological analysis revealed no alterations in the values (neutrophils- 65.0%, monocytes-3.0%, haemoglobin-14.4gm/dl, packed cell volume-43.5.0%, red blood cells-7.25 x 10^6/ml and white blood cells-6.1

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Fig 2. Microscopic appearance of *D. canis* from skin scrapings (40x)

Fig 3. Microscopic appearance of *D. cornei* from skin scrapings (40x)

x10^3/ml) except lymphocytosis (lymphocytes-32.0%). Biochemical analysis revealed no alterations in the values (glucose -108.0 mg/dl, total protein -7.04 mg/dl, albumin-2.9 mg/dl and globulin-4.14 mg/dl, blood urea nitrogen-7.4 mg/dl, creatinine- 1.04 mg/dl, aspartate aminotransferase (AST)- 22.4 u/l, alanine aminotransferase (ALT)- 27.7 u/l and alkaline phosphatase-72u/l, creatinine kinase- 135 u/l, calcium-9.44 mg/dl and phosphorous- 3.66mg/dl). However, Kumari *et al*. (2018) reported anaemia, leukocytosis, hypoproteinemia, hypoalbuminemia, hyperglobulinemia and elevated AST value.

Different types of mange mites were treated with oral ivermectin at different dose rates in dogs and since ivermectin compounds have no ovicidal activity on the eggs of mites, repetition of the treatment was recommended to prevent recurrence of demodicosis. Infestation by mixed *Demodex* spp. could be successfully treated with oral livermectin combined with oral and topical antibacterials.

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