

PARASITIC DERMATITIS DUE TO CANINE DEMODICOSIS IN DOGS

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Three cases of generalized and one localized demodicosis in dogs were presented to Teaching Veterinary Hospital of GADVASU, Ludhiana with history of observed in case with localized dermatitis. Examination of deep skin scrapings revealed presence of *Demodex canis* mites. There was neutrophilia alongwith leukocytosis with slight increase in eosinophils. Three dogs were treated orally with ivermectin for 30 days where as one was treated with injectable ivermectin. The treatment resulted in a generalized pruritus, alopecia and severe dermatitis. Lesions were present on whole body in case of generalized and confined to area around eyes, mouth and testicles in case of localized demodicosis. Ear infection (*otitis externa*) was also decrease in the skin lesions and complete early recovery in case of localized lesions. Thus, though localized case was treated successfully with oral ivermectin, where as generalized cases requires long term treatment with oral ivermectin for complete recovery.

Key Words: Canine demodicosis, Dermatitis, Ivermectin.

Introduction

Ectoparasitic infestation is the single most important cause of dog skin disease and can produce hypersensitivity disorders (Chee *et al* 2008). Most frequently reported canine mange mite infections reported in India include demodectic and sarcoptic mange (Aujla *et al.*, 2000). Demodicosis commonly known as red mange or follicular mange is a common skin disease of dogs caused by a microscopic cigar shaped mite called *Demodex canis*. Though the mite is a normal inhabitant of canine skin, however in immunosuppressed (Tarallo *et al.*, 2009) or predisposed individuals by factors such as age, body condition, breed, and climate conditions (Rodriguez-Vivas *et al.*, 2003 and Abdel-Ghaffa *et al.*, 2008), it produces clinical diseases in the form of localized or generalized demodicosis. The presence of more than five localized lesions on the body, or when two or more feet affected by parasitic lesions, are indicative of generalized infection (Ghubash 2006). Demodicosis can follow immunosuppressive conditions or treatments, or may be related to a genetic immune deficiency. This is complicated by the fact that *Demodex* itself is thought to suppress the normal T-lymphocyte response. There are also certain breeds, such as the *Dalmatian*, which appear to be more susceptible (Urquhart 1996) to mite infestation. While direct treatment for severe cases is possible using a suitable acaricide which is applied to the skin, improved nutrition and checking for other, immune-system suppressing diseases are also

recommended. The secondary bacterial infection associated with pustular demodicosis requires treatment with antibiotics. Present communication reports three severe cases of generalized demodicosis and one case of localized dermatitis in dogs.

Materials and Methods

The following cases were presented for dermatologic consultation at the Teaching Vety Hospital of the Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana.

Case 1: Ten month-old, German shepherd bitch weighing 26.5 kg with a history of generalized pruritus, alopecia, lichenification, and nodular lesions.

Case 2: One year and 11 months old male dog weighing 30.4 kg with the history of itching on the whole body since the last 3-4months. Though the case was treated with antibiotics, non corticosteroidal antiinflammatory drugs and antihistaminics but no appreciable results were seen.

Case 3: Nine month-old, bitch weighing 13.7kg with a history of generalized pruritus, alopecia, and chronic skin problem since last one month.

Case 4: Six year old, male dog weighing approximately 20kg with a history of localized pruritus, alopecia, and irritation since last two months.

On the basis of history and clinical observations the cases were suspected to be infected with mange/mites. Suspected dermatological lesions and healthy skin were moistened with 10% potassium hydroxide

(KOH) solution and scraped with a scalpel until capillary bleeding was visible. The scraped

materials were placed in 10% KOH solution. The deep skin scrapings collected and boiled in 10 per cent potassium hydroxide were examined under low power of microscope for the presence of mange mites. Identification of mites was made by the method described by Urquhart (1996). The presence of even one mite on animals, in any development stage, was deemed as positive result. Blood samples were also collected in two cases for the observations of hematological parameters.

Results and Discussions

In case of generalized demodicosis lesions were present on whole body. There was generalized alopecia, severe dermatitis and

pruritus (Figs. 1, 2). One case of localized dermatitis was also reported with lesions of dermatitis around mouth, eyes and testicles (Figs.3, 4). In the deep skin scrapings of all the

four dogs *D.canis* was identified by microscopic examination (Fig.5, 6).

Haematological parameters were also evaluated in two cases (Table 1). There was leucocytosis along with neutrophilia and slight increase in eosinophils was observed as compare to reference values (Kahn *et al* 2005). Leukocytosis was observed in case 1 which was neutrophilic before treatment and lymphocytic 15 days post treatment. Beside these there was increase in platelets. Neutrophilia was also observed in case 2. Neutrophilia in above cases was may be due to secondary bacterial infection.

Three dogs (case 1, 3 & 4) were treated with ivermectin oral (Neomec tablets 10 mg orally once a day for 15-30 days. One dog (case 2) was treated with injectable ivermectin @ 200 µg/kg body weight s/c one week.

Table1.Haematological parameters

Case	Hb(g%)	TLC(cu mm)	N(%)	L(%)	M(%)	E(%)	B(%)
Case 1.	13.0	23,200	86	12	-	02	-
Case 1. 15 days post treatment	10.4	18,200	58	38	-	04	-
Case2.	10.0	15,000	82	17	-	01	-

Generalized demodicosis in dog with lesions on whole body (generalized alopecia, severe dermatitis and pruritus)



Fig.1



Fig.2

Localized demodicosis in dog with lesions of dermatitis around mouth, eyes and testicles



Fig.3



Fig.4

Showing *Demodex canis* in the deep skin scrapings dog

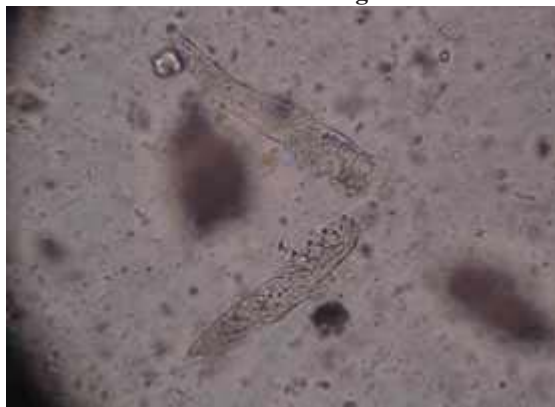


Fig.5

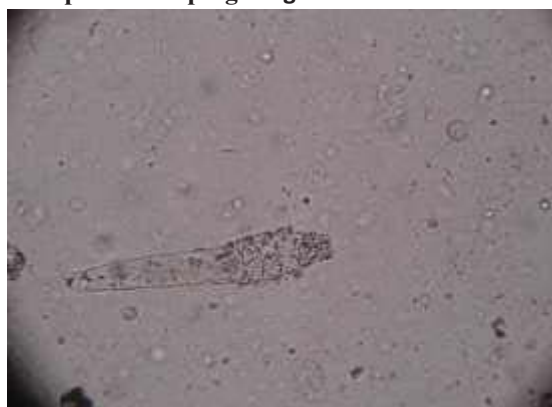


Fig.6

One bitch (case No. 1) was again presented for follow up 16 days after post treatment with in appetite, vomition and dermatitis. There was decrease in the skin lesions. Skin scrapings were positive for *D. canis*. However there was mild infestation (+) as compared to previous results (+++). Bitch was recommended treatment with ivermectin oral (Neomec) tablets, 10 mg) per os once a day for 30 days along with Vitamin B complex syrup (Polybion) per os 1 tsf. o.d x 30 days.

One dog (case 4) was presented to clinics one week post treatment. There was improvement in skin lesions. Dog showed symptoms of head tilting & discharge from left ear which may be due to otitis externa. Otitis externa due to *D. canis* in dog and cat has also been reported previously (Brockis 1994, Knottenbelt 1994 and Van 2001). Ear of dog was cleaned with betadine and savlon and antibiotic therapy (Tablet Sporidex (cephalexin) 500 mg b.d. x 5 days) started along with injectable ivermectin @ 200 µg/kg body weight s/c for one week.

It is concluded that *Demodex canis* result in severe generalized and localized dermatitis in dogs. Localized cases may be treated successfully with oral ivermectin, where as generalized cases are difficult to treat and requires long term (2-3 months) treatment with ivermectin oral for complete recovery. Beside these Vitamin B-Complex and liver tonics may also be administered to overcome side effects of specific acaricidal treatment.

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