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Clinical management of frustrating canine generalized demodecosis in a female germansephard dog: A case report

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Abstract
A German shepherd dog about one and half year old was presented to the TVCC Hospital, BVC, Patna with a complaint of inappetance, alopecia, redness and itching all over the body. Clinical examination revealed rough haircoat, alopecia, itching and erythema at face, ears, ventral abdomen along with swollen distal aspect of front and hind limbs, subsequently deep skin scrapings were collected and digested with 10% KOH and diagnosed as *Demodex canis*. The lesions of the dog was washed with benzyl peroxide and treated with Ivermectin @ 400 µg/kg s/c at every week interval and Amitraz @ 4ml/litre of water twice weekly for 4 weeks. During the due course Cephalexin @ 30 mg/kg, Meloxicam @0.2mg/kg and cetrizine@1mg/kg daily orally administered to prevent secondary bacterial infection, inflammation and itching respectively. An uneventful recovery was observed after 56 days of therapy.

Keywords: german shepherd dog, generalized demodicosis, demodex canis, ivermectin, amitraz

Introduction
Ectoparasitic infestation is the single most important cause of dog skin disease, among which canine demodicosis is a common disease affecting dogs world-wide, and can be one of the most serious of all canine dermatoses (Scott *et al*., 2001) [17]. It is caused by mite called *Demodex canis* that appear microscopically as cigar-shaped and considered as normal inhabitants of cutaneous microfauna in dogs. However, in immunosuppressed (Tarallo*et al.*, 2009 [22] and Janus *et al*., 2014) [6] or predisposed individuals by several factorssuch as age, body condition, breed, and climateconditions (Rodriguez-Vivas *et al.*, 2003 [13] and Abdel-Ghaffa *et al.*, 2008) [1], it produces clinicaldiseases in the form of localized or generalized demodicosis. Though, the lesions can occur anywhere on the body, but the face and feet are most commonly affected and it is generally accepted that up to four focal lesions indicate localized disease, whilst more than a dozen lesions, a large lesion or paw involvement suggest generalized disease (Mueller, 2008) [9]. Clinically, the clinical signs are usually characterized by alopecia, erythema, pustules and pruritus etc. which ultimately leads to concomitant bacterial and fungal infections (Pradhan *et al*., 2012) [12]. Management of canine demodicosis is challenging and frustrating that requires long term treatment. The treatment mainly involves specific miticidal therapy along with adjunctive therapy, if needed. Thus, the present case report discusses the successful clinical management of frustrating canine generalized demodicosis in a germansephard dog.

Material and Methods
A one and half year female German Shepherd dog was presented to the TVCC hospital, Bihar Veterinary College, Patna with a complaint of inappetance, loss of hair, redness and itching all over the body. The clinical examination revealed rough hair coat, alopecia, itching and erythema at face, ears, ventral abdomen along with swollen distal aspect of front and hind limbs (Figure 2). The dog was vaccinated and dewormed two week before. Skin scrapings were taken and digested in warm 10% KOH and smear was prepared for the detection of mites and examined microscopically. The skin scraping examination revealed the presence of elongate, cigar shaped mite, *Demodex canis* with body divisible into head, thorax bearing four pairs of short and stumpy legs and abdomen bearing transverse striations (Soulsby, 1982) [21] (Figure-1). The hematobiochemical parameters haemoglobin (Hb), packed cell volume (PCV), total erythrocyte count (TEC), total leucocyte count (TLC), Differential leucocyte count

(DLC), Total Protein, Albumin, and alamineaminotranferase (ALT) were also estimated before and after treatment (Table-1).On the basis of history, clinical signs and skin scrapping the case was diagnosed as canine generalized demecosis.

Treatment and Discussion

Treatment was initiated with ivermectin injection @ 400µg/kg body weight subcutenously once in week for four weeks. External application was also advised with amitraz @ 4mL in /liter of water twice a week for four weeks as topical application followed by bath with benzyl peroxide shampoo, used for its follicular flushing activity. Cephalexin @ 30 mg/kg was given orally daily for 15 days to prevent bacterial infection and to alleviate icthing, antihistamine cetrizine was used @ 1mg/kg body weight once daily. Omega fatty acids (Nutricoat advance, Petcare Co.,) and hepatobiliary drug (Tefroli forte, TTK Co.,) were also given orally during the course of treatment to minimize oxidative stress and to nourish the skin and hair follicles for healthy skin growth. The dog owner was advised to follow up weekly and one week later the dog was again presented to the hospital with aggravations in erythematous skin lesions with severe painful swelling of limbs (Figure-3). The history taking revealed that owner was using unhygienic winter coat without drying hair coat properly. The dog owner was advised Meloxicam @ at a dose rate of 0.2 mg/kg to treat inflammation and continue the same treatment. It was recommended to discard the unhygienic winter coat and advised to dry the hair coat properly after application of medicaments. Thereafter the animal responded very well after 4 week of treatment and skin scrapping revealed absence of mites with resolution of skin lesions and disappearance of clinical signs of erythema, and pruritus. The same treatment was further continued for next few weeks until recovery and almost complete recovery occurred after 56 day of treatment (Figure-4). Demodicosis is a common skin disease of the dog. The present case was considered as a generalised demodicosis due to presence of more numbers of lesions throughout the body (Satheesha, *et al*. 2016) [16] and (Kaplaywar *et al*., 2017) [7]. The lesions in the present case were similar to those described by Gupta *et al*., 2002 [5], Janus *et al*., 2014[6] and Kaplaywar *et al*., 2017[7]. Treatment of canine generalized demodicosis is multimodal which include a number of medications for demodicosis treatment (Muller, 2008) [10]. In the present case the weekly dose of Ivermectin at 400µg/kg s/c combination with Amitraz (12.5%) and benzyl peroxide shampoo showed a good success in the treatment of generalised demodecosis. These findings were in accordance with the findings of Roy *et al*., 1991[14] and Kaplaywar *et al*., 2017 [7], but the clinical signs and lesions were aggravated after a week of treatment might be due to predisposing factors like poor condition, malnutrition and abnormal environment that favours mite proliferation and development of skin disease which is supported by previous reports of Folz, 1983 [4], Nayak, 1993[11], Muller *et al*. 2012[10] and Shrestha *et al*., 2015 [18]. The use of broad spectrum antibiotic strongly recommended in the present case was due to the fact that most cases of canine generalized demodicosis involve a secondary bacterial skin infection, that required for several weeks along with acaricidal treatment (Verde, 2005) [23] and Muller, 2011) [8]. In the present case study the haematological parameters (Table-1) revealed decreased level of haemoglobin concentration, total erythrocyte count, leukocytosis, neutrophilia and eosinophilia. These finding were in accordance with the findings of Pradhan *et al*., 2012 [12], Arora *et al*., 2013 [2] and Janus *et al*., 2014 [6]. The biochemical changes in the present case were also showed decreased level of total protein, albumin which concurred with the findings of Sakina *et al*., 2012 [15] and increase level of ALT, which was in accordance with the findings of Arora *et al*., 2013 [2]. In the present case study provision of adequate nutritional supplements as omega fatty acids and heptoprotective drugs such as liver tonics given good response in managing canine demodicosis by its antioxidant properties (Singh *et al*., 2011 [19], Yatoo *et al*., 2014 [24] and Arsenovic *et al*., 2015) [3] and also to overcome side effects of specific acaricidal treatment (single *et al*., 2013) [19] respectively.

Table1: Haematobiochemical parameters of affected dog.

Parameters		Before treatment	After recovery
Hb (g %)		9.2	11.8
PCV (%)		29	35
TEC (/micro litre)		3.9	4.6
TLC(/micro litre)		18,200	11, 400
DLC (%)	N	86	74
	L	14	23
	E	06	03
Total Protein (g/dl)		5.20	6.36
Albumin (g/dl)		2.04	3.18
ALT (IU/L)		88	65

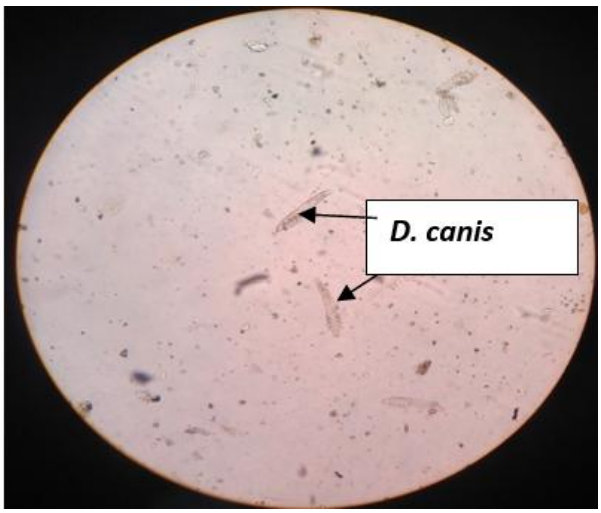

Fig 1: Cigar shaped Deodex canis in skin scrapping

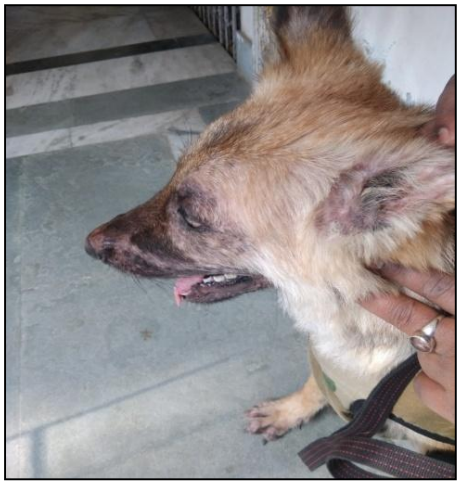

Fig 2: Dog showing lesions of erythema on face, limbs, ears and trunk

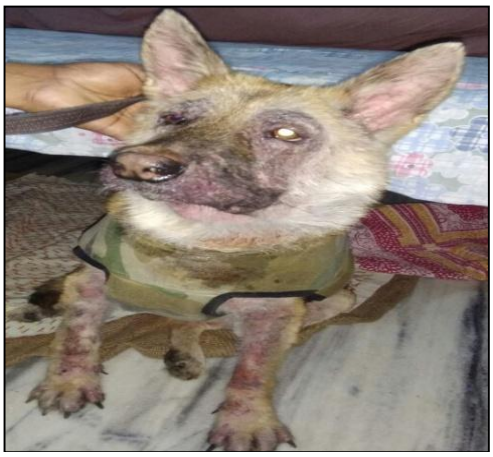

Fig 3: dog showing lesions of erythema, alopecia crust on face, neck and pododemodicosis

Fig 4: Dog showing recovery after 56 days of treatment

Conclusion

It is concluded that canine demodecosis is a common skin problem often complicated with bacterial infection in dogs causes severe morbidity. Hence Macrocyclic lactones derivative like Ivermectin and miticidal agent like Amitraz along with antibacterial therapy and nutritional supplements has got great efficacy in canine parasitic management.

References

1. Abdel-Ghaffar F, Al-Quraishy S, Sobhy H,Semmler M. Neem seed extract shampoo, Wash Away Louse®, an effective plant agent against Sarcoptesscabiei mites infesting dogs in Egypt. Parasitol. Res. 2008; 104:145-148.
2. Arora N, Vohra S, Singh S, Potliya S, Lather A, Gupta A, Arora D, Singh D. Therapeutic Management of Chronic Generalized Demodicosis in a Pug. Advances in Animal and Veterinary Sciences. 2013; 1(2S):26-28S, pecial Issue–2 (Clinical Veterinary Practice– Trends)
3. Arsenovic M, Pezo L, Vasic N, Ciric R, Stefanovic M. The main factors influencing canine demodicosis treatment outcome and determination of optimal therapy. Parasitology Research. 2015; 114:2415-2426.
4. Folz SD. Demodicosis (Demodex*canis).*Comped. Contd. Ed. 1983; 5(2):116-121.
5. Gupta GC, Rajora VS, Pachauri SP. Clinico biochemical studies in dermatological disorders in dog. XIX Annual Convention of I.S.V.M., Jammu and Kashmir, 2001, 9-11.
6. Janus A, Ttresamol PV, Mercy KA, Habeeb Biju P, Sheameen H. A study on clinical and hematobiochemical parameters in canine demodecosis. Indian Journal of Canine Practice. 2014; 6(2):92-94.
7. Kaplaywar S, Jyothi J, Sreenivasa GS. Murthy. Clinical management of generalized and pododemodicosis in German shepherd dog. The Pharma Innovation Journal. 2017; 6(11):829-831.
8. Mueller RS. Evidence-based treatment of canine demodicosis. Tierarztl Prax Ausg K Kleintiere Heimtiere. 2011; 39(6):419-24.
9. Mueller Ralf S. Demodicosis - a frequent problem in the dog. *Dermatology* WSAVA / FECAVA World Small Animal Congress, 2008, 150-152.
10. Mueller Ralf S, Bensignor E, Ferrer Lluı´s *et. al*. Treatment of demodicosis in dogs: 2011 clinical practice guidelines. Veterinary Dermatology. 2012; 23:86-96.
11. Nayak DC. Studies on canine demodicosis. Ph.D. Thesis submitted to the Orissa Univ. Agric. and Tech., Bhubneswar Cited Clinico-Biochemical Aspects OF canine Demodicosis. A Thesis Submitted to the Anand Agricultural University (Gujarat), 2005, 64-65.
12. Pradhan NR, Chatterjee S, Lodh C. Demodicosis IN Dogs and its Therapeutic Management**.** Indian Journal of Canine Practice. 2012; 4(1):17-20.
13. Rodriguez-Vivas RI, Ortega-Pacheco A, Rosado-Aguilar JA, Bolio GME. Factors affecting the prevalence of mange-mite infestations in stray dogs of Yucatán, Mexico.Vet. Parasitol. 2003; 115:61-65.
14. Roy S, Ghosh RC, Mishra DP. Therapeutic evaluation of ivermectin against demodectic mange infestation in dogs. I. J. A. H. 1991; 30:131-135.
15. Sakina A, Mandal RK, Mudasir Q. Haematobiochemical changes in canine demodecosis. Vetscan.2012; 2:75-78.
16. Satheesha SP, Chandrashekhar G, Nagaraj L, Malatesh, DS, Patel Suresh R, Kottadamane MR. Therapeutic Management of Generalized *Demodicosis* IN A Beagle Puppy. International Journal of Science, Environment and Technology. 2012-2016; 5(5):3177-3181.
17. Scott DW, Miller WH, Griffin CE. Parasitic skin diseases. In: Muller and Kirk's Small Animal Dermatology, 6th edn. Philadelphia, PA: W.B. Saunders Co., 2001, 457-74.
18. Shrestha D, Thapa B, Rawal G, Dhaka S, Sharma B. Prevalence of demodectic mange in canines of kathmandu valley having skin disorder and its associated risk factors Int J ApplSci Biotechnol, 2015; 3(3):459-463.
19. Singh SK, Kumar M, Jadhav RK, Saxena SK. An Update on Therapeutic Management of Canine Demodicosis. Veterinary World. 2011; 4(1):41-44.
20. Singla LD, Eljadar MSM, Bal Mandeep Singh, Deshmukh S, Uppal SK, Juyal PD. Parasitic Dermatitis Due To Canine Demodicosis In Dogs. Indian Journal of Canine Practice. 2013; 5:85-87.
21. Soulsby EJL. Helminths, Arthropods and Protozoa of Domesticated Animals. 7th ed., Bailliere Tindall, a division of Cassell Ltd., London, 1982, 476-479.
22. Tarallo VD, Lia RP, Sasanelli M, Cafarchia C, Otranto D. Efficacy of Amitraz plus Metaflumizone for the treatment of canine demodicosis associated with *Malasseziapachydermatis*. Parasites and Vectors, 2009, 2:13.fd
23. Verde M. Canine demodicosis: treatment protocol. Proceeding of the NAVC North American Veterinary Conference Jan, 2005, 8-12.
24. Yatoo M. Iqbal Jhambh R, Malepad DP, Kumar P, Dimri U. Advances in Therapeutic Management of Complicated Demodicosis in Canines. The Journal of Advances in Parasitology. 2014; 1(1):6-8.