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Diagnosis and clinical management of canine Demodicosis: Case reports

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Abstract

Two dogs showing signs of demodicosis were diagnosed and treated. Physical and skin scrapping examination revealed generalised demodicosis in all cases. Clinical examination revealed alopecia, crusting of skin and pustules in both the cases. Both the cases were managed successfully with oral administration of Ivermectin at weekly interval, Benzyl peroxide shampoo once in a week, Amitraz dip once in a week and oral administration of antibiotic Cefalixen for twenty one days. Local application of Betadine and Wokazole was also given 2-3 times for 10 days. Both the cases recovered after almost 2 months of treatment.

Keywords: Amitraz, canine, cefalixen, demodicosis

Introduction

Demodicosis is one of the common skin disease of the dog. The main etiologic agent of demodicosis in dogs is *Demodex canis*, which is found among the normal fauna of canine skin [1]. Demodicosis is a parasitic, chronic, and recurrent dermatopathy involving excessive proliferation of mites of the genus *Demodex* species in the hair follicles and oil glands of the skin [2]. Due to this proliferation, perifolliculitis, folliculitis, and furunculosis occur [3]. Canine demodicosis may be classified as localized and generalized form. In localized demodicosis only small areas of skin having one or more discrete foci are involved that regress spontaneously or may progress to wide spread generalized cutaneous lesion. Generalized demodicosis is potentially life threatening disease and mostly associated with secondary bacterial pyoderma requiring prolonged treatment [4, 5].

Clinically disease is characterized by erythema, pustules, crusts, hyperkeratosis, and alopecia with secondary pyoderma as a frequent complication [6]. The easiest means for the diagnosis of canine demodicosis is a microscopic examination of skin scraping. Scraping should be obtained from multiple areas and should be deep enough to produce capillary bleeding while squeezing the area being scraped which forces mites deep in the hair follicle to the surface. Skin scrapping examination is both simple and confirmatory means of diagnosis [7, 8]. Treatment of canine demodicosis involves medication against both mites and bacteria besides preventing inflammation and allergy [9, 10].

Case report

Two dogs of different breeds aged between 9 months and 2 years were presented at department of Veterinary Clinical Complex, Khalsa College of Veterinary and Animal Sciences, Amritsar during the period March 2019 to August 2019. They had signs of alopecia, erythema and hyperpigmentation, comedones, crust formation, itching, oozing of serum and pus formation at certain points on body. The overall clinical examination of the dogs was done and clinical parameters like temperature, respiration rate and pulse rate were taken into account. Scrapings from multiple areas were taken from edge of lesion by a sharp blade smeared with glycerol in a petri dish until bleeding occurred. Skin scrapings were digested in warm 10% KOH and smear for Gram's staining was prepared. Blood samples for hematology and biochemistry were taken.

Result and Discussion

On clinical examination alopecia, erythematous exudating crusty lesion and pustules were noticed in both the cases. Both dogs had itching and serosanguinous discharge oozed out from the lesions. There was also pus formation around the lesions.

Temperature was slightly elevated in both the cases, but respiration rate and heart rate were within normal range. Both the animals were dull, depressed and anorectic. In one dog pinna pedal reflex showed jerking of foot on pinching pinna but not in other.

Skin scrapping revealed presence of Demodex species, as shown in figure. On Gram's staining, gram positive bacteria were seen. Treatment was started with oral administration of Ivermectin Both the dogs were treated with oral ivermectin at 100 to 400 $\mu\text{g}/\text{kg}$ body weight as incremental doses looking for any toxic symptoms to treat mite infestation [11]. Benzyl peroxide shampoo for its follicular flushing activity was used once in a week. Benzoyl peroxide shampoo possesses keratolytic and follicular flushing activity and hence is recommended for the treatment of demodicosis [12]. Amitraz dip (0.05%) once in a week to treat generalised demodicosis [13], and oral administration of antibiotic Cefalixen @ 25 mg/kg daily for twenty one days to treat pyoderma. These findings are in agreement with Kuhl [14] who stated that most superficial pyodermas require at least three weeks of systemic antibiotics while the duration of antibiotic therapy for deep pyodermas is highly variable and they may require long term therapy. To minimize oxidative stress and to support healthy skin growth omega fatty acids were supplied Local application of Betadine and Wokazole was also given 2-3 times for 10 days. Animals responded well to treatment and both the cases recovered after almost 2 months of treatment.

Conclusion

Treatment of canine generalized demodicosis is multimodal. In the present cases, demodicosis complicated with pyoderma was effectively managed with Ivermectin, Amitraz, Benzyl peroxide, and other supportive therapy. Dogs responded well to the treatment. It was thus concluded that therapeutic regime requires a strategic approach that overcomes both effects of mite and bacteria and the damage they cause in the animal in general and in the skin in particular.



Fig 1: Skin scrapping revealed presence of Demodex species, as shown in figure

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