SUCCESSFUL THERAPEUTIC MANAGEMENT OF DEMODICOSIS IN A LABRADOR DOG

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A male Labrador dog of age 5.5 years was presented to TVCC, C.V.Sc. and A.H., Durg; with a history of chronic skin lesions on the face, around the ears, abdomen, neck and forelimbs. Clinical examination revealed presence of primary and secondary skin lesions mainly alopecia, follicular papules, pustules, scaling, foul smelling, crusting and bleeding tracts. Skin scrapping reveals the infestation of Demodex mites. Case was efficiently and safely managed by using subcutaneous injections of ivermectin at weekly intervals along with gram positive sensitive antibiotic boosted with supportive therapy. The combination was well tolerated by the dog and no significant alteration was observed in hemato-biochemical profile during and after the recovery period.
Keywords: Demodex, Skin scraping, Dog, Ivermectin.

Dogs usually suffer from tick and mite infection, incase proper care not taken or while coming close to infected dogs. Among mite infection in dogs, Demodexmite is infect a large range of different breeds of dogs with pathological proliferation mites predominantly present in the hair follicles. The infection spreads to puppies few days post to birth incase mother is infected (Reddy *et al*., 2015). Causative agent is Demodexcanis, though others species of mites,like *Demodexcornei*and *Demodexinjai*also cause skin infection (Tater and Patterson, 2008). The disease varies from acute self-limiting to chronic recurrent or long-lasting infection (Manjul, 2012). Secondary bacterial infection superimposes in the generalized form increasing severity of infection (Mueller, 2004). The treatment last for four weeks till the skin scraping were negative to mite infestation. Macrocyclic lactones and amitraz are the drug of choice against mite infestation. Usually macrocyclic lactones anddoramectin@ 0.6 mg/kg/wkS/C has been recorded to be effective against demodicosis (Murayama, 2010). The secondary bacterial infection must be treated with systemic antibiotic along with supportivetherapy.

Materials and Methods

A male Labrador dog of age 5.5 year weighing around 37 Kg, was presented to TVCC, C.V.Sc. and A.H., Durg, Chhattisgarh; with a history of skin lesions for past 45 days on face, around ear, neck, abdomen, and forelimbs along with foul smell from body. The animal had severe itching and restlessness. The skin lesions were hemorrhagic.

The clinical examination revealed the presence of primary and secondary skin lesions like alopecia, follicular papules, pustules, scaling, crusting and foul odor. There was no evidence of fleas and its fecal dirt. Skin scrapping was collected in 10% potassium hydroxide and was microscopically examined revealing the presence of more than one cigar shaped adult Demodex mites with four pairs of legs in the thoracic region (Fig-1). The skin scrapping was further processed for detection of IgE using Coral kit and it was found to be high. Canine Free Thyroxine (FT4) was tested using commercially available ELISA kit and recorded in normal range (Table-1). After incubation for 48 hours in blood agar at 37ºC under aerobic condition, growth of Staphylococcus spp. was detected and after incubation for 7 days in Sabouraud dextrose agar at 25^{o}C under aerobic condition, growth of Aspergillus sp. was recorded. Antibiotics sensitivity test was conducted against Staphylococcus sp. grown after 48 hours from skin scraping incubation and antibiotics sensitive and resistant to Staphylococcus was recorded (Table-2). The systematic investigation did not show any

significant abnormality in the haemato-biochemical parameters.

Fig -1. Figure showing Demodex sp. in skinscraping of dog through microscopic examination

Table -1: Serum examination through commercial kit

Sl. No.	Parameters	Finding	Normal Value	Diagnostic Interpretation
1	IgE (Immunoglobulin)	35.00 IU/ml	0 - 7.1	High
2	Canine Free Thyroxine (FT4)	1.00 ng/dl	0.71 - 1.85	Normal

Table -2: Antibiotics sensitivity test against Staphylococcus sp. grown after 48 hour from skin scraping incubation

Antibiotics	Results	Antibiotics	Results
Amoxyclav	R	Ceftriaxone/Tazobactum	+++
Amoxycillin/Sulbactam	+++	DoxycyclineHydrochloride	R
Ampicillin/Sulbactum	R	Enrofloxacin	R
Ampicillin/Cloxacillin	+++	Gentamicin	++
Amikacin	++	Imipenem	+++
Cefotaxime	R	Levofloxacin	++
Ceftriaxone/Sulbactum	+++	Meropenem	+++
Cefuroxime	R	Moxifloxacin	++
Co-Trimoxazole	R	Novobiocin	+++
Ceftazidime/Calvulanic Acid	+++	Norfloxacin	R
Ceftazidime	R	Nitrofurantoin	R
Cefoperazone/sulbactum	+++	Oxytetracycline	R
Cephalaxin	R	Ofloxacin	++
Ceftriaxone	+++	Pipracillin/Tazobactam	+++
Ciprofloxacin	R	Tobramycin	R
Clindamycin	R	Cefpodoxime	R

Treatment

The case was treated with weekly subcutaneous injections of Ivermectin @ 0.6 mg/kg body weight for six weeks and oral cephalosporin antibiotic @ 15 mg/kg body weight PO BID for 15 days to check the secondary bacterial infections. Benzyl peroxide shampoo was also weekly used to remove crust and debris from the skin. Syrup Nutricoat advance @ 2 tsf PO twice daily for 20 days and antihistaminic tablet Levocetrizine @ 10 mg PO OD daily for 5

days for alleviating intense pruritis. The vitamin E @ 200 mg PO OD at alternate days for as an antioxidant.

Results and Discussion

Among the skin infection, demodicosis is one of the recurring infections in most of canine, causing skin lesions and immunosuppression. We recorded alopecia of skin with follicular pustules, moist and hemorrhagic exudation throughout entire face and fore limbs around ears and eyes and in the interdigital space, pustules with draining tract, which has been recorded earlier by other authors Ballari *et al*., 2009. We recorded free T4 in normal range in infected dog, similar findings have been recorded by Reddy *et al*., 2015. The treatment regime included weekly subcutaneous injection of Ivermectin for six weeks and Antibiotics against secondary bacterial infection, as was also recommended by Mueller, 2004. Supportive therapy included oral Omega 3, Omega 6, EPA and DHA supplementation for 20 days and antihistaminic for 5 days to reduce pruritis. Essential fatty acid is helpful to maintain health of skin hence Vitamine - E was also administered on every alternate day, since demodicosis induces oxidative stress due to rapid proliferation of mites as also reported by Patel, 2018. Benzyl Peroxide shampoo was also weekly used to clear debris from skin.

Conclusion

In Demodicosis, the IgE was recorded to be high. Secondary bacterial infection of Staphylococcus was associated with it. Specific drug like Ivermectin and doramectin are helpful in early treatment. Detection of early infection is helpful in treatment and control.

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