International Journal of Science, Environment and Technology, Vol. 5, No 5, 2016, 3177 – 3181

ISSN 2278-3687 (O)
2277-663X (P)

THERAPEUTIC MANAGEMENT OF GENERALIZED *DEMODICOSIS* IN A BEAGLE PUPPY

Satheesha, S.P.*, Chandrashekhar, G., Nagaraj, L. Malatesh, D.S., Patel Suresh. R. and Kottadamane, M.R.

Department of Teaching Veterinary Clinical Complex,
Veterinary College, Shivamogga (Karnataka)

Abstract: A Beagle male puppy of 4 months old was presented to the TVCC hospital Veterinary college Shivamogga, with a history of diffused alopecia pustules, and itching all over the body. Deep skin scrapping examination yielded *Demodex canis* mites. The case was diagnosed as canine generalized demodicosis**.** The animal was treated with ivermectin (Neomac® Intas Pharmaceuticals Ltd.) @ 600 µg/kg s/c at every week interval for 4 weeks. The animal was also applied with Amitraz (Tactic ® Containing 5% Amitraz , MSD animal health Pvt. Ltd.) @ 4ml/litre of water weekly twice for 4 weeks proceeding to that animal was washed with a shampoo containing Benzyl peroxide (Petben® Petcare Co.). A course of broad spectrum antibiotic i.e, Cephalexin (Cephavet® Savavet Co.,) @ 30 mg/kg once a day, PO, for 10 days. An uneventful recovery was observed from 4 weeks onwards and full recovery was observed after 45 days from the date of first injection. Two successive deep skin scraping examination after one week interval of last injection yielded no mites, considered complete recovery from the disease.

Keywords: Beagle puppy, generalized Demodicosis, Ivermectin, Amitraz.

Introduction

Demodicosis (demodectic mange, follicular mange, red mange) is an inflammatory parasitic disorder characterized by the presence of larger than normal numbers of demodectic mites in the skin (Miller et al., 2013). *Demodex* mites are considered normal residents of canine skin and *Demodex canis* has long been recognised as the most common species in dogs. *D. canis* resides in the hair follicles and sebaceous glands and survives on epidermal debris, cells and sebum. *Demodex* mites are considered to be a normal part of the cutaneous micro fauna in the dog and are transmitted from the bitch to the pups during the first days of life. Puppies raised in isolation after caesarean section does not have any *Demodex* mites. It is assumed that immunosuppression or a defect in the skin immune system allows for mites to proliferate in hair follicles, resulting in clinical signs (Mueller, 2012). Canine demodicosis is classified as localized (CLD) or generalized (CGD) according to the extent of the disease, as the course and prognosis of the two types of demodicosis are vastly different. Typically both types of

*Received Aug 26, 2016 * Published Oct 2, 2016 * www.ijset.net*

demodicosis start during puppyhood (3 to 18 months). Canine generalized demodicosis is a disease regularly seen in small animal practice. The localized form of the disease occurs most commonly in young dogs, is characterized by focal erythema and alopecia on face and distal limbs and is self-resolving in most dogs (Scott, 2001).

The present case report discusses the successful clinical management of generalised demodicosis in Beagle puppy.

History and Observation

A Beagle male puppy of 4 months old was presented to the TVCC hospital, Veterinary College Shivamogga, with a complaint of alopecia and itching all over the body. On clinical examination there was a generalised alopecia, nodules at some places, pustules, itching and thickening of skin majorly at face, front legs, ventral abdomen distal aspect of hind limbs and neck (Figure 1).

Diagnosis and Treatment

Deep skin scrapping was taken until the capillary bleeding was observed and examination under low power yielded more than 2-4 *Demodex canis* mites in a single field (Figure 2). The case was diagnosed as generalized Demodicosis. The haematological parameters revealed mild eosinophilia.

The animal was treated with Ivermectin (Neomac® Intas pharmaceuticals Pvt. Ltd) @ 600 µg/kg s/c at every week interval for 4 weeks. The animal was also applied with Amitraz (Tactic ® containing 5% Amitraz, MSD animal health Pvt. Ltd.,) @ 4ml/litre of water weekly twice for 4 weeks proceeding to that animal was washed with a shampoo containing Benzyl peroxide (Petben® Petcare Co.,). A course of broad spectrum antibiotic i.e, Cephalexin (Cephavet® Savavet Co.,) @ 30 mg/kg SID PO was given for 10 days. The supportive medications like Nutricoat® (Petcare Co.,) syrup 5 ml twice daily PO was given to nourish the skin and hair follicles. Changes in the skin colouration and reduction in the infection rate was observed from ten days after treatment (Figure 3). An uneventful recovery was observed from 4 weeks onwards and full recovery was observed after 45 days from the date of first injection (Figure 4). Two successive deep skin scraping examination after one week interval of last injection yielded no mites, considered complete recovery from the disease.

Discussion

Canine demodicosis is a disease caused by the proliferation of Demodectic mites typically leads to alopecia, comedones, follicular papules and pustules, scaling and crusting (Mueller,

2012). The present case was considered, generalised Demodecosis as more number of lesions throughout the body. Hnilica (2011) opined that when a dog has five or more localized lesions, when an entire body region (e.g., facial area) is involved, or where the complete involvement of two or more feet occurs the case was considered as generalised.

Many different treatments are reported and reviewed. In the present case the weekly dose of Ivermectin at 600µg/kg s/c combination with Amitraz (5%) lotion and benzyl peroxide shampoo as follicular flushing agent at twice a week application yielded a good success in the therapy of generalised Demodecosis. Even though ivermectin is not licensed for use in canine demodicosis, weekly injection at a dose of 0.4 mg/kg s/c given variable and inconsistent results (Scott and Walton, 1985). However, ivermectin given orally at a dose of 0.3-0.6 mg/kg /day was satisfactory in a number of published studies. Topical amitraz is FDA-approved for treating generalized demodicosis in dogs older than 4 months of age. Amitraz, a miticide and insecticide, is a monoamine oxidase inhibitor (MAOI), prostaglandin synthesis inhibitor, and an alpha2-adrenergic agonist (Mueller, 2004). The success rate of amitraz therapy in canine demodicosis varies from 0 to 92% (Kwochka et al., 1985; Scott and Walton, 1985; Medlau and Willemse 1995). Benzyl peroxide-based shampoo are often recommended because of their keratolytic and supposed follicular flushing activity (Scott et al., 2001). The use of broad spectrum antibiotic is majorly due to the fact that most cases of canine generalized demodicosis involve a secondary bacterial skin infection, which needs administration of systemic antibiotics for several weeks along with acaricidal treatment (Verde, 2005).

References

[1] Hnilica K.A (2011). Small Animal Dermatology A Color Atlas and Therapeutic Guide. 3rd Edition. Saunders, Elsevier publication. pp126-128.

[2] Kwochka, K.W., et al., (1985): The efficacy of amitraz for generalized demodicosis in dogs: a study of two concentrations and frequencies of application. The Compendium on Continuing Education for the Practicing Veterinarian. 7: 8-17.

[3] Medlau, L. and Willemse T. (1995). Efficacy of daily amitraz therapy for refractory, generalized demodicosis in dogs: two independent studies. *Journal of the American Animal Hospital Association.* 31, 246-249.

[4] Miller W.H., et al., (2013). *Muller and Kirk's Small Animal Dermatology* (7th edn), Philadelphia, Pa: WB Saunders, Elsevier publication. pp. 304-313.

[5] Mueller R.S (2012). An update on the therapy of Canine Demodicosis. Compendium : Continuing Education for veterinarians. Vetlearn.com. pp. E1-E4.

[6] Scott D.W., et al., (2001). Dermatologic therapy. In: Mueller and Kirk's small animal dermatology. 6th ed. Philadelphia, Pa: WB Saunders. pp. 207-273.

[7] Scott D.W. and Walton D.K (1985). Experiences with the use of amitraz and ivermectin for the treatment of generalized demodicosis in dogs. *Journal of the American Animal Hospital Association.* **21***:* 535–541.

[8] Verde M (2005). Canine demodicosis: treatment protocol**.** Proceeding of the NAVC North American Veterinary Conference Jan. 8-12, 2005, Orlando, Florida. http://www.ivis.org/. pp. 229-230.

Fig. 1. Alopecia and thickening of skin over head ears, and legs due to Demodecosis in a beagle puppy before treatment

Fig. 2. *Demodex canis* mites (10X)

Fig. 3. After 10 days of treatment. (Note the reduction in skin lesions over fore head)

Fig. 4. Complete recovery after 45 days from the date of first treatment