

## Case Study

# Therapeutic Management of Generalized Demodicosis in a Female Rottweiler Dog

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## ABSTRACT

### Keywords

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A 4 years old Female Rottweiler dog, weighing around 28 kg presented with hair loss, itching, foul smell from body along with severe skin lesions on face and hind limbs. On skin scrapping the dog was found positive with *D.canis* and was successfully treated with amitraz, ivermectin, antibiotic and supportive therapy.

## Introduction

Canine demodicosis, also called demodectic mange or follicular mange is a common skin disease encountered in veterinary practice. The disease is most commonly caused by *Demodex canis*; however, other species, such as, *Demodex injai* (a large bodied mite) and *Demodex cornei* (a short bodied mite), may also be involved (Tater and Patterson, 2008). It is a dermatologic disease that occurs when mites colonize the hair follicles and sebaceous glands (Singh *et al.*, 2011 and Sudhakara Reddy *et.al.* 2014). The dogs suffering from demodicosis show the signs like alopecia, pruritus, pustules, thickening of skin associated with crust or scale formations (Komboj *et al.*, 1994). It can be classified into 2 types based on distribution of lesion; localized and generalized demodicosis. Localized demodicosis was reported to have usually spontaneous

remission; therefore, no treatment is needed. Generalized demodicosis cannot heal spontaneously and frustrating diseases to treat and mostly associated with secondary bacterial pyoderma thus, requiring prolonged treatment (Mueller, 2012). Thus, the present case report shows the successful therapeutic management of a generalized demodicosis with a combination therapy of acaricides and macrocyclic lactones along with supportive treatment.

## History and Clinical observation

A 4 years old female Rottweiler dog, weighing around 28 kg was presented to the Institute of Animal Health and Production, Patna with complaint of hair loss, itching, foul smell from body along with severe skin lesions on face and hind legs (Fig. 1). The

deworming and vaccination were properly updated and the dog had otherwise no other problem. On clinical examination of the dog foul smell from body, alopecia, crust formation and erythema of skin was observed in the region of face and hind limbs. Skin scrapings was collected in 10 % potassium hydroxide and submitted for microscopic examination which revealed *Demodex canis* under microscope. Identification of mites was made by the method described by, Soulsby, 1982. Adult mites were cigar shaped with four pair of stubby legs in the thorax part of their body (Fig. 2). The case was diagnosed as generalized demodicosis. The haemato-biochemical parameters (Hb, TLC, Total Protein, Albumin, Globulin and ALT) were also estimated as per standard procedures on day 0 (before treatment) and 42th day post treatment (Table-1).

### **Treatment and Discussion**

The dog was treated with injection ivermectin @ 0.2 mg/kg body weight subcutaneously once weekly interval for four weeks. Amitraz (Ridd®) 12.5% was diluted @ 4 ml/L of water and carefully worked into the skin with a sponge after every week for twenty–one days. Before dipping, bathing with benzoyl peroxide shampoo (Petben®) was advised for soothing of skin and removal of crusts and debris. The antibiotic Cephalexin tablets was also used @30mg/Kg BW orally for fifteen days to check any secondary bacterial infections along with nutritional supplement (Syrup Nutriccoat Advance, 2 tsf twice daily) and Liver tonic. The owner reported marked improvement in condition after 14 days of treatment; hence the treatment was continued and complete uneventful recovery occurred on 42th day after start of the treatment as evident from skin scrapings negative for mange mite (Fig3).

Canine demodicosis is a common skin disease of dogs in which proliferation of *Demodex canis*, an acarine parasite of canine hair follicles, is associated with the development of cutaneous lesions (Scott *et al.*, 2001). The dogs suffering from generalized demodicosis revealed a wide variety of clinical manifestations but the present clinical symptoms were in accordance with the findings of Floz, 1983; Quinn *et al.*, 1997 and Komboj *et al.*, 1994.

The signs associated with the conditions are attributable to irritation and inflammatory reaction caused by mites in the hair follicles resulting to damage of the epidermal cells and exudation produced by secondary bacterial and fungal infection (Mueller *et al.*, 1989). A number of protocols have been used to treat generalized demodicosis as topical amitraz and systemic and oral ivermectin in various doses (Nayak *et al.*, 2000; Mueller, 2004). The results obtained in the current study were also in congruent with that of Arsenovic *et al.*, 2015 who recommended the use combination of systemic antibiotics and/or antiseptic shampoo, with advocate spot- on, ivermectin s/c and/or amitraz bath. As supportive therapy, omega-3 fatty acids in the form of capsules or fish oil and/or E vitamin are considered.

In the present case study the haematological parameters (Table-1) revealed anaemia and leukocytosis and Similar findings were also reported by Arora *et al.*, 2013. The results of biochemical parameters revealed hypoproteinemia, hypoalbuminemia and hyperglobulinemia and these findings simulated with the observations of Gupta *et al.*, 2001, who also noted decrease of total serum protein levels in demodectic dogs. The increase in AST values were also in accordance with the findings of Arora *et al.*, 2013.

**Table.1** Haemato-biochemical parameters of Rottweiler Dog

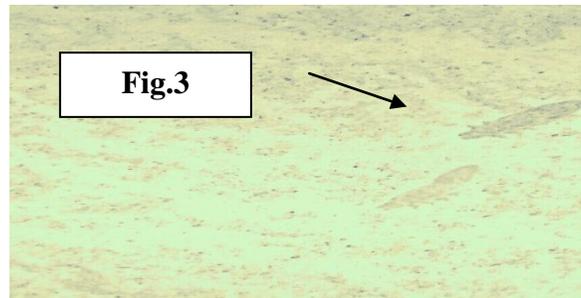
Parameters	Before treatment	After treatment
Haemoglobin	9.2g%	12.8g%
TLC	22,000/ $\mu$ l	13,200/ $\mu$ l
Total Protein	5.86g/dL	6.68g/dL
Albumin	2.20g/dL	3.08g/dL
Globulin	3.46g/dL	3.68g/dL
Alanine aminotransfrase (AST)	88 IU/L	56IU/L



**Fig.1** Skin lesions on face before treatment



**Fig.2** Complete recovery occurs on day 42th; after start of the treatment



Thus with the present cases study it can be concluded that ivermectin and amitraz may be considered as a drug of choice. Benzoyl peroxide containing shampoo should be used as a supportive therapy against canine demodicosis.

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