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Diagnosis and therapeutic management of feline scabies

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Abstract

Cats presented to VCC Bidar exhibited symptoms like crust formation, hyperkeratosis, alopecia and intense pruritus. Lesions were observed at the ear margins, face, and legs. Skin scrapings examination from the Cat revealed the presence of adult mites of *Sarcoptes scabiei*. The infected cats were put on therapeutic administration of ivermectin at 200 µg/kg body weight, and diphenhydramine 1 mg / kg body weight along with oral administration of multi-vitamin daily. Affected Cat was followed up for four consecutive weeks with weekly administration of ivermectin, Cat showed recovery and skin scappings revealed negative result post treatment.

Keywords: Cats, Ivermectin, *Sarcoptes scabiei*, zincovit, zoonotic

Introduction

Sarcoptic mange is rare, highly contagious disease of cats and kittens caused by *Sarcoptes scabiei*, which can opportunistically infest other animals, including humans (Griffin *et al.* 1993) [4]. *Sarcoptes* is a tiny burrowing mite that has dorsal pegs and spines seen on its body (Scott *et al.* 2001) [8]. As Sarcoptic mange is communicable to human beings, it requires immediate and appropriate treatment and the owners must be cautioned when handling cats (Chakrabarti 1986; Foil 2003) [2, 3]. Scaled Pruritus is the main clinical symptom of scabies in cats (Hardy *et al.* 2016) [5]. The symptom that appears when a cat is attacked by scabies is that the cat often scratches its body parts (Susanto *et al.*, 2020) [11]. Itching and characterized hair loss with the appearance of the scabs often become the indication of the diagnosis. Confirmation of the diagnosis can be done by skin scraping of the skin that is suspected of being infested with mites. Liquid paraffin or potassium hydroxide can be used for attaching skin scrap to glass objects (Macfarlane, 2014) [7]. The present report describes case of sarcoptic mange in two cats and successful management with ivermectin therapy.

An adult cat 2 years old and her son of 9 months age were presented to the Veterinary Clinical Complex, Bidar with a history of decreased food intake, chronic skin problems and intense pruritus as a chief complaint. Clinical examination of cat revealed high temperature (104 °F). Further examination of cat revealed scales, crusts, erythema and alopecia. Eczematous lesions on the face, margins of ears, legs, chest and ventral abdomen were observed. The owners who had close association with the cats and also suffering from intense pruritus since 1 month. They had small erythematous crusted papules, hyper pigmentation on the hands, fingers, legs and ankles (Fig. 3). A presumptive diagnosis of mange in humans was made based on history of pruritus and the distribution of the inflammatory papules, history of contact with the affected cats.

Materials and Methods

Skin scraping examination is the gold standard test for mites, eggs, or faeces to be visualised using a microscope. Superficial and deep skin scrapings were collected from various sites of body of cat. Skin scrapings revealed adult live mites. Skin scrapings were also digested in 10% NaOH solution and examined microscopically for morphology, which revealed a round body, short legs. The mites were identified as per the reports of Walker (1994) [12], based on their shape and the presence of spines, which distinctly differentiates between *N. cati* from *Sarcoptes* sp.

Results and Discussion

Based on morphology, mites from the affected cat were identified as *Sarcoptes* (Soulsby 1982) [10]. Treatment was initiated with ivermectin injections at 200 µg/kg body weight subcutaneously every week for four consecutive weeks and diphenhydramine 1 mg / kg body weight (Iqomah, M. *et al.*, 2020) [6] along with supportive therapy by oral administration of 2 ml of multi-vitamin and mineral syrup (Zincovit) daily.

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Efficacy of the drug was assessed based on the clinical recovery and examination of skin scrapings at weekly intervals of post therapy. Post treatment clinical examination of cat on 7th day revealed partial improvement in pruritus, disappearance of scales. By 14th day cat was totally free from of pruritus and alopecia with negative scrapings. On 28th day of examination, cats were free from all lesions and hair growth was also observed. After completion of 2 weeks of therapy (four doses of ivermectin) scrapings were negative for mites. But oral ivermectin was continued for two more weeks along with supportive therapy to prevent recurrence. Senthil Kumar *et al.* (2008)^[9] reported higher efficacy with parenteral ivermectin at 200 µg/kg body weight, S/C in cats with *Sarcoptes*. Advice was given to the owners to wash all inanimate objects like feeding and watering bowls, cloths, bedding and towels those were in contact with the cats and owners with hot water. It was also advised to spray the floor and walls with cypermethrin at 4 ml/l of water monthly twice. No recurrence was observed in any of the cats up to 4 months of post therapy. No adverse reactions were observed after the treatment with oral ivermectin. Ivermectin is known to act on GABA neurotransmission at 2 or more sites blocking interneuronal stimulation of excitatory motor neurons, leading to flaccid paralysis. More recent evidence suggests that ivermectin may exert its effect through action on glutamate-gated Cl⁻ ion conductance at the postsynaptic membrane or neuromuscular endplate (Adams 2001)^[11]. The successful recovery in the present study indicated the benefit of ivermectin therapy in cats for the management of feline scabies. Humans will develop intense pruritus without any mite burrows within few hours of initial contact with the infested cats. Prolonged association with the infested cats was responsible for this cutaneous disease. The lesions in infested people subsided when the cats were segregated from humans (Chakrabarti 1986)^[12].

Conclusion

The present study reported *Sarcoptes scabiei* in cats of a single household with the chief complaint of pruritus. Four doses of ivermectin at 200 µg/kg body weight, and diphenhydramine 1 mg / kg body weight provide good effectiveness for the treatment of scabies in cats along with oral multivitamins as supportive therapy successfully cured sarcoptic mange infection in cats.

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