SHORT COMMUNICATION

Diagnosis and Therapeutic Management of Sarcoptic Mange in Rabbits

Yashoda Rathod*, Roopali Biradar, Vivek R. Kasaralaikar

Abstract

A total of six rabbits of either sex aged between 1-2 years were presented to the Department of Veterinary Clinical Complex of the College, Bidar with the history of intense itching, and hair loss all over the body since last 20 days. Clinical examination revealed whitish crusty lesions and alopecia on the margins of the ear pinnae, around eyes, nose and foot region with intense pruritus, and pale conjunctival mucous membranes. Deep skin scrapings from each rabbit collected from multiple sites on microscopic examination revealed the presence of *Sarcoptes scabiei* mites. The affected rabbits were treated with Inj. Ivermectin @ 200 µg/kg body weight S/C, Inj. Chlorpheneramine maleate @ 0.5 mg/kg BW I/M along with supportive therapy. The owner was advised for follow up therapy with oral multivitamin (Vimeral) 10 drops twice daily, with Ivermectin injection at weekly intervals. Four weeks post-treatment skin scraping examination showed absence of mites with uneventful recovery.

Keywords: Ivermectin, Rabbits, Sarcoptes scabiei, Skin scrapings, Vimeral.

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Introduction

Sarcoptic mange infestation is one of the most common and major constrain in commercial rabbit production in India (Ravindran and Subramanium, 2000; Darzi *et al*., 2007). With the hot and humid climate of the country, mange among rabbits is very high (Aulakh e*t al*., 2003). Mange is most obstinate, persistent and contagious disease with zoonotic importance. *Sarcoptes scabiei* is a deep burrowing mite in epidermis causing intense pruritis, crust formation, scale production, thickening and wrinkling on skin of affected area (Hendrix and Robinson, 2012). They are burrowing mites that live in the upper layers of the epidermis and create tunnels in which females lay their eggs. The entire life cycle of *S. scabiei* takes place on the host and lasts about 3 weeks. After hatching, the larvae migrate to the skin surface where they complete their life cycle, becoming nymphs and then adults. Sarcoptic mange in rabbits first appears on the head and ear and then becomes generalized being associated with intense pruritis with the loss of hair (Soulsby, 1982). Severe infection especially in young or debilitated animals causes high mortality (Bornstein and Samuel, 2001). *Notoderes cati* mange was successfully treated with Ivermectin in rabbits by Patel *et al.* (2024). The avermectin group of drugs includes ivermectin, abamectin, doramectin, eprinomectin and selamectin, which can be used to treat rabbits that are naturally infected with scabies (Kachhawa *et al*., 2013). The present communication reports successful management of sarcoptic mange with Ivermectin in rabbits.

Materials and Methods

A total of six rabbits two male and four female aged between 1-2 years were presented to the Department of Veterinary Clinical Complex, Veterinary College, Bidar with history of intense itching, hair loss all over the body and reduced feed intake since last 20 days. On clinical examination, rabbits showed normal rectal temperature (101.5°F to 103.4°F), pale conjunctival mucous membrane and erythema, alopecia with white indurate dry crust like lesions on the margins of the ear pinnae, around eyes, nose and paws of forelimbs (Fig. 1). The lesions were pruritic in nature and on itching and scratching there was shedding of fur.

Deep skin scrapings from affected rabbits were taken from different sites, *viz.,* margins of ear, nose, around eyes and feet with a sterile scalpel blade dipped in liquid paraffin until blood oozed from dermal capillaries. Scrapings were boiled in potassium hydroxide (10%), cooled, centrifuged and the sediment was observed under microscope (10X) for the presence of mite and thus confirmed the presence of *Sarcoptes scabiei* (Fig. 2) and their ova. The mite was identified according to its morphological characteristics cited by Soulsby (1982). Clinical and parasitological examination was again done on 28th day of treatment, which revealed healthy skin with absence of mites in the skin scrapings.

Department of Veterinary Medicine, Veterinary College, KVAFSU, Bidar-585 401, Karnataka, India

***Corresponding author:** Dr. Yashoda Rathod, Assistant Professor, Department of Veterinary Medicine, Veterinary College, KVAFSU, Bidar-585 401, India. Email: yrathod787@gmail.com

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Fig. 1: Crust formation around eyes, nose, ear, feet and ear

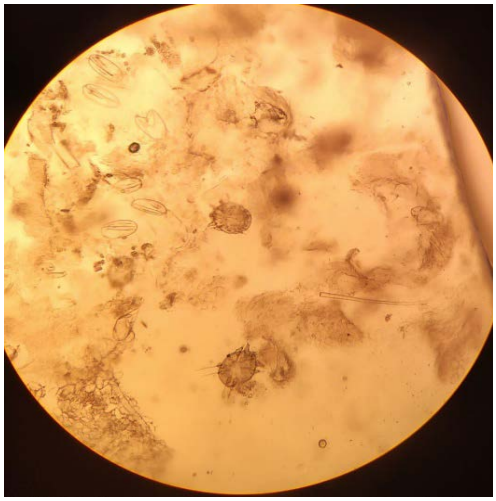

Fig. 2: *Sarcoptes scabiei* under microscope (10X)

Treatment and Discussion

The affected rabbits were treated with injection Ivermectin @ 200 µg/kg body weight S/C, Inj. Chlorpheneramine maleate @ 0.5 mg/kg b. wt., I/M along with supportive therapy. Owner was advised for follow up therapy with oral multivitamin (Vimeral) 10 drops twice daily, along with topical application of lotion Kiskin (clobetasol propionate, 0.03% + ofloxacin, 0.1 % + miconazole nitrate, 2 % + zinc sulphate, 3.0 %) over the lesion for 2 weeks and Ivermectin injection at weekly interval. Four weeks post-treatment skin scraping examination showed absence of mites with uneventful recovery of rabbits. The owner was also advised to disinfect the nest areas and surroundings of the sheds with cypermethrin @ 2 mL/litre of water.

Sarcoptes scabiei are highly contagious and burrows deep in epidermis of skin (Wall and Shearer, 1997). Mange caused by *S. scabiei* is more common in rabbits and distinguished by presence or absence of pruritis, morphology of mite and distribution of lesions (Deshmukh *et al*., 2010; Bhardwaj *et al*., 2012). In the present study rabbits showed clinical manifestations such as whitish crusty lesions and alopecia on the margins of the ear pinnae, around eyes, nose and foot region with intense pruritus. Similar clinical findings were reported by Kachhawa *et al*. (2013), Mitra *et al*. (2014), Singh *et al*. (2019) and Patel *et al.* (2024). Such pathogenic effects of these mites have been attributed to their burrowing activity and mechanical damage caused by the parasites during excavation, irritant action of their secretions and excretions (Darzi *et al*., 2007).

Confirmation of sarcoptic mange infestation in rabbits involves the microscopic examination of mites along with the characteristic skin lesions present on various parts of the body (Hemachand and Revati, 2023). In the present study diagnosis was done based on clinical signs and microscopic examination of deep skin scrapings. Adult *Sarcoptes scabiei* mites have a round shape, short legs, a long unjointed stalk with a sucker on the front pair of legs, a thick chitinous wall with large spines on the dorsal body surface, a terminal anus, and scales, cones, and bladelike setae on the dorsum (Soulsby, 1982). In the present case study, treatment carried out with Ivermectin @ 200 µg/kg body weight, subcutaneously at weekly interval for four weeks was found to be effective

in treating scarcoptic mange (Kaplaywar *et al*., 2017; Kumar *et al*., 2018), whereas Kachhawa *et al*. (2013) and Mitra *et al*. (2014) reported that Ivermectin @ 400 µg/kg body weight introduced subcutaneously was an effective treatment for the sarcoptic mange, and Patel *et al*. (2024) noted success with Ivermectin @ 300 µg/kg body weight. Ivermectin selectively bind to glutamate gated and gamma aminobutyric acid (GABA) gated chloride channel in the mite nervous system resulting in hyperpolarization of cell, paralysis and death of mites (Aulakh *et al*., 2003; Singh *et al*., 2019).

Thus, it is concluded that injection of ivermectin, oral administration Vimeral syrup and topical application of Kiskin lotion is effective for therapeutic management of Sarcoptic mange in rabbits.

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