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Sarcoptic mange in a New Zealand white rabbit

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Abstract
A one-year-old female New Zealand white rabbit was presented to Arawali Veterinary College, Bajor, Rajasthan, with the history of severe skin lesions on both ear pinnae, around the eyes, lips, nose, body, limbs and interdigital space from the last 2 months. The clinical examination revealed crusts, scabs, alopecia, pruritus all over the body along with weight loss, anorexia and lethargy. Mange in rabbits is mainly due to infestation of *Psoroptes cuniculi*, *Sarcoptes scabie* war *cuniculi* and rarely due to Notoedres, *Cheyletiella* species. The skin scrapings were collected from all the lesions, sarcoptic mites were found under microscopic examination. Sarcoptic mange was diagnosed based on the skin lesions and microscopic examination. The rabbit was treated with subcutaneous injection of ivermectin @0.4 mg/kg body weight weekly once for 5 weeks along with chlorpheniramine maleate, multivitamin syrup and benzyl benzoate lotion for 1 week was applied on the skin lesions. Due to the chronicity of the mite infestation the improvement was observed after 20 days and successfully recovered after 35 days of treatment. Skin scrapings were collected on day 35 and showed no evidence of sarcoptic mites.

Keywords: Sarcoptes, New Zealand white rabbit, ivermectin

Introduction
Sarcoptic mange (or) Scabies is caused by Sarcoptic scabiei mite which is an emerging, zoonotic, highly contagious and pruritic skin disease in rabbits [1, 2]. Sarcoptic scabiei is a burrowing mite which has the ability to invade deep into the epidermis [3]. The female mite forms a tunnel and oviposits in stratum corneum layer of skin, the highly pathogenic larva hatches out after few days and moults into nymph and mature into adult mites. These mites live for one month on host by feeding on the epithelial cells, hair follicles etc, resulting in hypersensitivity and severe pruritic skin lesions in rabbits [3, 4]. Rabbits are affected with different types mite infestation caused by *Psoroptes cuniculi*, Sarcoptes scabiei, *Notoederes cati* and *Cheyletella parasitivorax*, among them, the Sarcoptic scabiei mite infestation is common which has high impact on the body weight, leather quality, overall productivity, conception rates and mortalities in commercial rabbit farms [5, 6]. The Soviet Chinchilla, New Zealand White and White Giant breeds, are highly susceptible among all the breeds of rabbit [7, 8]. The factors responsible for susceptibility of mite infestation are poor hygiene and overcrowding [9]. The direct contact between the diseased and healthy ones is the main route of transmission in rabbits (or) contact with contaminated environment (or) fomites is also reported [10, 11]. Scabies is nonseasonal skin disease, but highly noticed during rainy, winter season. All ages and both the genders of rabbits are affected in tropical and subtropical countries [12]. The sarcoptic mange is characterised by intense pruritus, alopecia, dry crusts, scab formation especially at ear pinna, eyes, nose, lips and legs and thickening of skin of the affected parts [7, 13]. The skin scrapings from different locations are sufficient and processing with 10% KOH gives us the clear morphology of mites in scabies [8]. The successful recovery can be achieved with the use of ivermectin along with multivitamin supplements [14-16]. The present study deals about a chronic and typical sarcoptic mange infestation in a female New Zealand White rabbit.

Case description
A female one year old New Zealand white rabbit was presented at TVCC, Arawali Veterinary College, Bajor, Rajasthan with the history of chronic severe itching, alopecia, crusted skin lesions all over the body in the last 2 months. The detailed clinical examination revealed intense pruritus, head shaking, dried crusted irregular scabs on ear pinna and periorbital areas bilaterally, nose, lips, legs and interdigital space with positive pinna pedal reflex, alopecia, anorexia, cachexia and lethargy (Fig 1-6).

Both the ears and eyes were severely affected with heavy irregular crust formation. The deep skin scrapings were collected from ear pinna, body and legs. The samples were taken into 10% KOH container for processing. A drop of this sample was taken onto the slide and examined under microscope. The microscopic examination revealed the round mites with short legs and thick body surface, chitinous wall with spines which indicates Sarcoptic scabiei mites under 10 and 40x (Fig 7-9). The skin scrapings were examined on day 1 and day 35. The rabbit was treated with ivermectin @ 0.4 mg/kg body weight subcutaneously once in a week for 5 weeks, chlorpheneramine maleate @ 1 mg/kg body weight I/M once daily for 1-week, benzyl benzoate lotion on skin lesions for 10 days and multivitamin supplement @ vimerol syrup -5 drops twice daily preoral for one month. The pruritus and itching reduced after 1 week with normal appetite. The marked improvement in the crusty skin lesions was observed after 20 days of treatment. The rabbit got completely recovered with negative skin scraping results and skin lesions on day 35 (Fig 10-12).

Fig 1: Dried irregular crusty scabs and erythema on left ear pinna

Fig 2: Severely thickened skin with crusts and Hyperkeratosis on right ear pinna and lips

Fig 3: Lesions around the eyes and nose

Fig 4: Lesion at loin region

Fig 5: Scaby erythematous lesions at interdigital space of left forelimb

Fig 6: Lesions on right hind leg and interdigital space

Fig 7: The pictures of microscopic examination of skin scrapings revealed Sarcoptes scabiei mites

Fig 8: Sarcoptes mite

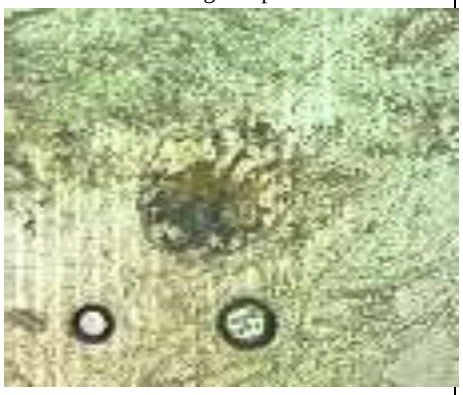

Fig 9: Sarcoptes mite

Fig 10

Fig 11

Fig 12

Fig 10-12: Rabbit recovered completely after 35 days of treatment with normal earlobes, eyes and hair coat

Conclusion

Sarcoptic mange is the most common ectoparasitic skin disease in rabbits the rabbits which are not maintained in separate cages i.e, overcrowding and poor hygienic conditions are responsible for the mange infestation especially the cachexia, lethargy along with skin lesions are noticed in chronic mange infestation in rabbits.

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