CASE REPORT

Therapeutic Management of Notoedric Mange in Rabbits

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Mange in rabbits is a highly contagious and a rising disease caused by different burrowing and non-burrowing mite species protozoon. Rabbits occasionally get infestated with *Notoedres cati*, which burrow the superficial layers of skin (Darzi *et al*., 2007). The mange infestation is widespread throughout the different parts of the world, with lesions first appearing on the lips and nose before spreading to the rest of the face. However, additionally crucial to zoonotic research, burrowing mites can cause humans to get dermatitis that is temporarily itchy. This mange spreads speedily through direct contact with skin or interaction with the environment (Panigrahi *et al*., 2016), and it can infect an immense number within a short duration of time. Only the adult female will pierce the skin and create a tunnel to deposit eggs. Adult male and older larvae stay on the skin surface. It takes two or three weeks to complete the life cycle from eggs to adulthood. If proper management practices are not implemented, this mange can cause severe pruritis and self-inflicted scratches that can result in secondary pyoderma, and it poses a serious threat to rabbit colonies. It is challenging to apply topical medication to eradicate a mite infestation, but ivermectin is simple to use and effective at clearing the skin of mange (McKellar *et al*., 1992). The present clinical case report explains Notoedric mange in two rabbits and its successful therapeutic management with the use of Ivermectin subcutaneously.

Case History and Observations

Two rabbits (one male and one female) were presented to the Veterinary Clinical Complex, College of Veterinary Science and Animal Husbandry, Anand, with the chief complaint of alopecia, rough hair coat and intense pruritus for the past 15 days. The owner claimed that alopecia began in the face and also spread to other parts of the body over time. Additionally, the owner also informed that the infection was transferred from one rabbit to another, and the earlier affection had not been addressed. During clinical examination, the rabbits were extensively examined for the presence of skin lesions on different parts of the body. Physical examination in both rabbits showed scaly, crusted lesions with edalopecic patches and erythema. The skin lesions were distributed over the face, around the eyes, ear pinna, nose, and forelimbs, with lesions mainly in the interdigital areas in the feet (Fig. 1). The skin scrapings from the different parts of the body were collected using a sterilized blunt scalpel blade and dissolved with 10% potassium hydroxide solution. The microscopic examination of the skin scrapping sample revealed a small number of adult *Notoderes cati* mange. Based on their morphology and the presence of a dorsal anus, the mange was recognized as *Notoedres* spp. according to the description provided by Muller *et al*. (1983). Based on clinical signs and skin scrapping results, the cases were identified as Notoedric mange.

Treatment and Discussion

The rabbits were treated with Inj. Ivermectin @ 0.3 mg/kg body weight subcutaneously once followed by Inj. Chlorpheniramine maleate @ 0.4 mg/kg b.wt. intramuscularly, and topically application of Povidone-iodine over the skin lesion three times a day. The Notoedric mange responded well to the ivermectin. After a few days of treatment, the clinical indications disappeared, and both rabbits stopped itching. On the fourth day of treatment, the rabbit's clinical indications disappeared, their health continued to improve noticeably, and on the eighth day, the lesions shed entirely visually. After treatment, there was a noticeable improvement in clinical status and complete recovery was noticed on 15th day; skin scrapings revealed no abnormalities with growth of new hairs. Following the treatment, no unfavourable effects were seen.

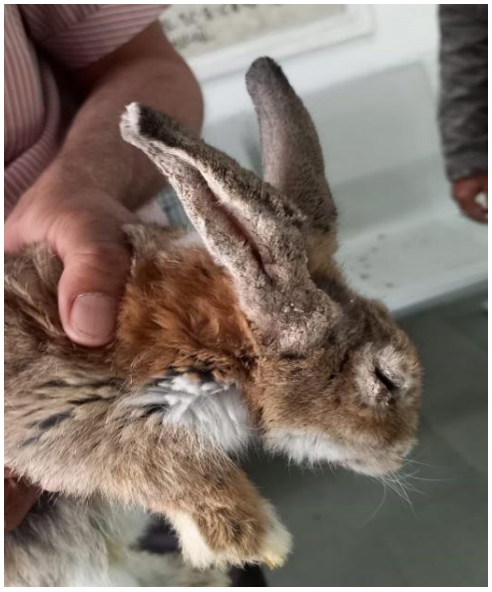

Fig. 1: Rabbit with skin lesions

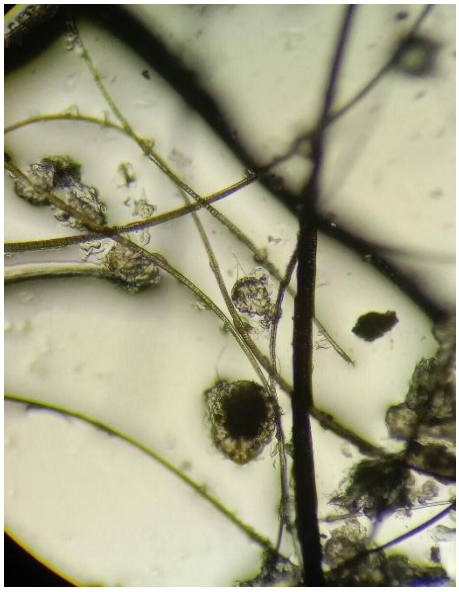

Fig. 2: Presnece of *Notoedres* spp. in skin scrapping

According to Gordon *et al*. (1943), the hatching time of *Notoedres* spp. often is 4-5 days. The decrease and elimination of mites starting on the ninth day following treatment suggests that the medicine in sufficient concentrations is effective in killing any larvae that hatch from the egg. These results are consistent with previous report (Singla *et al*., 1996), where complete visual shedding of lesions and mites disappeared from the 7th day till 30th day post-treatment with a similar dose rate of ivermectin. Similar findings were also noted by Borkataki *et al*. (2018) and Narang *et al*. (2020). Ivermectin at 400 µg/kg body weight was administered subcutaneously by Panigrahi *et al*. (2016) for four weeks to rabbits infected with a mixed infestation of Sarcoptes, Psoroptes, and Notoedres mites. After two weeks of treatment, the rabbits' condition improved, and there were no mites found in the skin scraping examination. As a way to treat sarcoptic and notoedric acariosis in rabbits, Darzi *et al*. (2007) employed a single intramuscular injection of doramectin at 400 µg/kg b.wt. This injection resulted in a decrease in mites and their developmental stages, with no mite concentration in skin scrapings by the tenth day after treatment. Aulakh *et al*. (2003) reported subcutaneous injection of doramectin @ 200 µg/kg b.wt. once a week for two weeks as effective for the notoedric mange, while Singari *et al*. (2001) found that a single dose of doramectin @ 400 µg along with the supportive treatment of antihistaminic for three days against same type mange in rabbits was 100 % effective.

This communication indicates that a single subcutaneous injection of ivermectin @ 400 µg/kg b.wt. can successfully cure the clinical and parasitological symptoms of a mange infestation in rabbits associated with *Notoedrescati var. cuniculi*.

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