

Sarcoptic mange infestation in a Rabbit: A Case Report

Sonam Bhatt^{1*}, Anil Kumar², Vivek Kumar Singh², Pankaj Kumar³, Pallav Shekhar¹, Bhavna⁴

Abstract

Two adult pet rabbits were presented to a TVCC, BVC, Patna with the history of anorexia, pruritis and lesions in ear, face and legs. Clinical examination revealed dried crusted scabs distributed in the face, nose, ear margins and legs. The skin was thickened and erythematous with patchy loss of hair. Based on clinical signs, disease was tentatively diagnosed as mange infestation. For confirmatory diagnosis, skin scraping was collected and examined. It was found positive for *Sarcoptes scabiei*. Treatment was done with Ivermectin injection at the dose rate of 400mcg/kg body weight subcutaneously along with multivitamins. For follow up skin scraped were taken on 14th and 28th day and found negative for the mite.

Keywords: Ivermectin, Mange, Rabbit, Sarcoptes.

Introduction

Sarcoptic mange is a highly contagious, non-seasonal skin disease of rabbit and is caused by the mite *Sarcoptes scabiei*. Predisposing factors for sarcoptic infection includes poor hygienic condition and overcrowding. It is one major constrains in a commercial rabbit farm (Darzi et al., 2007). *Sarcoptes scabiei* is a burrowing mite which reside under the host skin, at the stratum granulosum of the epidermis (Arlian et al., 1988). Clinical sign of sarcoptic mange includes alopecia, pruritis, seborrhea, crusting and hyperkeratosis. (Singh et al., 2017). Lesions are commonly seen in nose, ears, feet and perineal area (Kachhawa et al., 2013). Ivermectin is the commonly used drug for the treatment of sarcoptic mange (Sharun et al., 2019). Subcutaneous route is the most preferred route than the oral and topical (Alvenerie et al., 1993, 1998).

Case history and clinical examination

Three adult rabbits were presented to a Veterinary Clinical Complex, BVC, Patna with the history of anorexia, pruritis and lesions in ear, face and legs. Clinical examination revealed dried crusted scabs distributed in the face, nose, ear margins and legs (Fig.1a and Fig. 1b).



Fig.1 a. Rabbit presented with dried crusty lesions on face involving eyes, nose and ear margins



Fig.1 b. Dried crusty lesions on face and legs.

✉ Dr. Sonam Bhatt

sonam9363bhatt@gmail.com

1. Department of Veterinary Medicine, Bihar Veterinary College, BASU, Patna
2. Department of Veterinary Clinical Complex, Bihar Veterinary College, BASU, Patna
3. Department of Veterinary Parasitology, Bihar Veterinary College, BASU, Patna
4. Department of Veterinary Gynaecology and Obstetrics, Bihar Veterinary College, BASU, Patna

The skin was thickened and lesions were presented mostly in the face involving eyes. Skin scraping were collected and was processed as per standard protocol (Soulsby, 1982). Microscopic examination of skin scraping was found positive for sarcoptic mite (Fig.2).



Fig.2 Sarcoptes mite under microscope

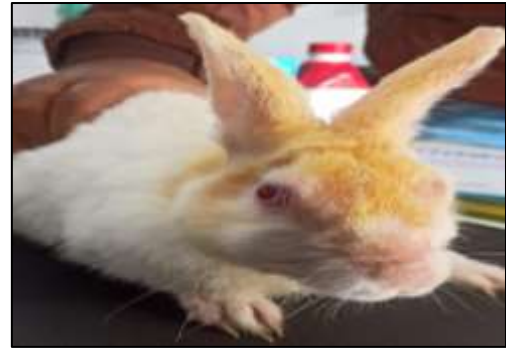


Fig.3 Improvement in the skin lesions after 2 weeks of treatment

Treatment and Discussion

Treatment was started with Injection Ivermectin (Neomec) @ 400mcg/kg body weight subcutaneously weekly interval for 3 weeks along with multivitamins (Syrup Zincovit) @ five drops, twice in a day for 14 days. Marked improvement in skin lesions was noticed after two weeks of treatment (Fig.2). Skin scrapping was found negative for sarcoptic mite after 3 weeks of treatment.

Sarcoptic mange is a common in rabbits which is characterised by the pattern of lesion distribution, pruritis and specific mite morphology in the skin scrapping (Bhardwaj et al., 2012). In the present study, confirmatory diagnosis was done by the microscopic examination of skin scrapes (Singh et al., 2017). Skin lesions in the present case were mainly seen in the face, ears, nose and legs. Similar findings were in accordance with Kaplaywar et al. (2017). Injectables macrocyclic like Ivermectin, doramectin etc are highly effective against sarcoptic mange (Voyvoda et al., 2005). Treatment with Ivermectin @400µg/kg body weight at weekly intervals is effective against Sarcoptic mange. Dose of Ivermectin for the treatment of mange is 0.2-0.4mg/kg body weight subcutaneously at weekly interval for three weeks (Mitra et al., 2014). In the present case Ivermectin at the dose rate of 0.4mg/kg body weight subcutaneously at weekly interval for 3 weeks was found effective in treating sarcoptic mange. This finding was in agreement with Panigrahi et al. (2017) and Mitra et al. (2014). Khan et al. (2020) reported the use of single dose of long acting Ivermectin (3.15% w/v) injection at the dose rate of 700mcg/kg body weight subcutaneously was found to be effective in complete elimination of sarcoptic mite infestation in rabbit. Multivitamins supplementation with ivermectin helps in clinical recovery in rabbit infected with *Sarcoptes* mite (Kumar et al., 2018b; Kumar et al., 2018). Omshi et al. (2018) reported the use of vitamin A supplement in managing drug induced oxidative stress.

Conclusion

This study indicates the successful treatment of sarcoptic mange with Ivermectin along with the supplementation of multivitamins. Complete clinical recovery was found after 3 weeks of the treatment.

References

- Alvinerie, M., Sutra, J.F. and Galtier, P. (1993). Ivermectin in goat plasma and milk after subcutaneous injection. *Veterinary Research*. 24(5): 417–421.
- Alvinerie, M., Escudero, E., Sutra, J.F., Eeckhoutte, C. and Galtier, P. (1998). The pharmacokinetics of moxidectin after oral and subcutaneous administration to sheep. *Veterinary Research*. 29(2): 113–118.
- Arlan, L.G. and Vyszenski-Moher, D.L. (1988). Life cycle of *Sarcoptes scabiei* var. *canis*. *Journal of Parasitology*. 74: 427–430.
- Bhardwaj, R. K., Ahmad, M. I., Ahmad, O., Kumar, A., Wahid, A. and Bhardwaj, D. (2012) An outbreak of mange in rabbits. *The Indian Veterinary Journal*. 89(12): 78.
- Darzi, M. M., Mir, M. S., Shahardar, R. A. and Pandit, B.A. (2007). Clinicopathological, histochemical and therapeutic studies on concurrent sarcoptic and notoedric acariasis in rabbits (*Oryctolagus cuniculus*). *The Journal Veterinarski arhiv*. 77(2): 167–175.
- Kachhawa, J. P., Kachhawaha, S., Srivastava, M., Chahar, A., & Singh, N. K. (2013). Therapeutic management of scabies in rabbits. *Intas Polivet*, 14(2): 306-309.
- Kaplaywar, S., Jyothi, J. and Murthy Srinivasa, G. S. (2017). Resolving Sarcoptic mange infection in a New Zealand white rabbit. *Pharma Innovation Journal*. 6: 641-642.
- Kumar, A., Kumar, R. and Archana, K. N. (2018). A successful treatment report on rabbits infected with sarcoptic mange. *Pharma Innovation Journal*. 7(2): 1-3.
- Kumar, M., Nath, A., Debbarma, S., Bhattacharjee, S., Monsang, S., Bijwal, D. and Raghavan, S. (2018b). Comparative curative efficacy of ivermectin and ivermectin with vitamin supplementation treatment against naturally infested *Sarcoptes scabiei* Mite in rabbits: a retrospective study. *Indian Journal of Livestock Research*. 8(12): 82–86.
- Mitra, J., Shikari, R. N., Das, A. K., Roy, B. B. and Mitra, M. (2014). Therapeutic management of sarcoptic mange in rabbit with ivermectin. *Exploratory Animal and Medical Research*. 4(1): 119-122.
- Omshi, F. S. H., Abbasalipourkabir, R., Abbasalipourkabir, M., Nabyan, S., Bashiri, A. and Ghafourikhosroshahi, A. (2018). Effect of vitamin A and vitamin C on attenuation of ivermectin-induced toxicity in male Wistar rats. *Environment Science and Pollution Research*. 25(29): 29408–29417.

- Panigrahi, P. N., Mohanty, B. N., Gupta, A. R., Patra, R. C. and Dey, S. (2016). Concurrent infestation of *Notoedres*, *Sarcoptic* and *Psoroptic acariosis* in rabbit and its management. *Journal of Parasitic Disease*. 40(3): 1091–1093.
- Prakash, M. A., Soundararajan, C., Nagarajan, K., Gnanaraj, P. T. and Saravanakumar, V. R. (2017). Sarcoptic mange infestation in rabbits in an organized farm at Tamil Nadu. *Journal of Parasitic Disease*. 41(2): 429–432.
- Singh, B., Gupta, D., Tiwari, A. and Shukla, P. C. (2017). Therapeutic management of sarcoptic mange in rabbit: a case report. *Global Journal Bio-Science and Biotechnology*. 6(2): 398–399.
- Soulsby, E. J. L. (1982). Helminths, arthropods and protozoa of domesticated animals, 7th edn. Bailliere Tindall, London.
- Sharun, K., Anjana, S., Sidhique, S. A., & Panikkassery, S. (2019). Treatment of Sarcoptic mange infestation in rabbits with long acting injectable ivermectin. *Journal of parasitic diseases*, 43(4), 733-736.
- Voyvoda, H., Ulutas, B., Eren, H., Karagenc, T. and Bayramli, G. (2005). Use of doramectin for treatment of sarcoptic mange in five Angora rabbits. *Veterinary Dermatology*. 16(4): 285–288.