



Clinical Management of Sarcoptic Mange in a Deoni Calf in Parbhani, Maharashtra, India

**M.P. Sakhare^{a++}, MFMF Siddiqui^{a++}, S. T. Kalwaghe^{b+++*},
T. A. Shafi^{a#} and U. U. Wakade^{a†}**

^a Department of Veterinary Medicine, College of Veterinary and Animal Sciences, MAFSU, Parbhani - 431 402, Maharashtra, India.

^b Department of Veterinary Parasitology, College of Veterinary and Animal Sciences, MAFSU, Parbhani - 431 402, Maharashtra, India.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: <https://doi.org/10.9734/jsrr/2024/v30i112635>

Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/127124>

Case Report

Received: 18/09/2024

Accepted: 20/11/2024

Published: 26/11/2024

ABSTRACT

A Deoni cattle male calf presented with history of pruritus, scratching, self biting, erythema and alopecia at Department of Veterinary Medicine, COVAS, MAFSU, Parbhani. The skin scraping examination revealed *Sarcoptes scabiei* infestation. In haematological profile, marked neutropenia and eosinophilia were observed. The calf was treated with Inj. Doramectin @ 0.2 mg/kg BW SC weekly interval for the period of three weeks. The supportive therapy included Inj. Chlorpheniramine

⁺⁺Associate Professor;

[#]Assistant Professor;

[†]MVSc Scholar;

^{*}Corresponding author: E-mail: shrikantkalwaghe@mafsu.in;

Cite as: Sakhare, M.P., MFMF Siddiqui, S. T. Kalwaghe, T. A. Shafi, and U. U. Wakade. 2024. "Clinical Management of Sarcoptic Mange in a Deoni Calf in Parbhani, Maharashtra, India". *Journal of Scientific Research and Reports* 30 (11):1080-83. <https://doi.org/10.9734/jsrr/2024/v30i112635>.

maleate @ 0.5 mg/kg body weight I/M and Inj. Multivitamin 2 ml IM for 5 days. The calf showed uneventful recovery with absence of pruritus, exudative erythema and regrowth of hairs after 24th day of treatment.

Keywords: *Sarcoptic mange; Deoni; cattle calf; doramectin.*

1. INTRODUCTION

Parasitic diseases cause animal suffering through annoyance, irritation, pruritus, disfigurement and secondary infection. Mange mite is one of the skin diseases of cattle that can cause huge economic loss through a decrease in production (Kebede and Hirpa, 2022). Sarcoptic mange is the most commonly occurring parasitic condition in pigs but all species of animals may be affected and has zoonotic consequence as the infection can be transmitted to human beings (Sharma *et al.*, 2021). Scabies is a contagious skin condition caused by epidermal mite, *Sarcoptes scabiei*. It is transmissible directly from animal-to-animal by contact. Scabies causes considerable economic loss in terms of decreased production, thickening and wrinkling of skin, thus lowering the market value of hides (Jalajakshi *et al.*, 2015). There are no noticeable breed, age or sex predilections for the occurrence of disease. However, the disease causes decreased feed intake, weight loss, decreased milk production, hide damage, difficulty in estrus detection, secondary bacterial (usually *staphylococcal*) pyoderma, and myiasis can occur due to the severe pruritus and irritation (Scott, 2007) in mange affected animals. The present case reports severe *Sarcoptes scabiei* mite infestation in a deoni calf.

2. CASE HISTORY AND DIAGNOSIS

A four-month-old Deoni male calf referred to Department of Veterinary Medicine, College of Veterinary and Animal Sciences, MAFSU, Parbhani, Maharashtra with the history of pruritus, scratching, self biting, erythema and alopecia. As per the history from animal owner, deworming and acaricides for helminthes and ectoparasites management has not given to the affected calf. The owner had only one cattle along with its calf in his shed. On detailed dermatological examination calf had a very distinct skin lesions which included intense pruritus, scaling, papules, exudative crusts, generalized alopecia and erythema on face, neck, shoulder and rump region (Fig.1). Feed intake of the calf was slightly reduced while temperature, respiration rate and heart rate were within the normal physiological range. The skin scrapping from active lesion was collected and treated with 10% potassium hydroxide revealed adult mite (Fig.2) of *Sarcoptes scabiei* (Soulsby, 2005). The 2 ml blood sample was collected from jugular venipuncture in EDTA vial for hematological investigation. In the haematological profile, marked neutropenia (25%) and eosinophilia (8%) was noticed. On the basis of history, typical dermatological symptoms and laboratory examination the case was diagnosed as Sarcoptic mange.



Fig.1. Deoni calf with papules, exudative crusts, generalized alopecia and erythema on face, neck, shoulder and rump region (Before treatment)



Fig. 2. Adult mite of *Sarcoptes scabiei*

3. TREATMENT AND DISCUSSION

The calf was treated with Inj. Doramectin @ 0.2 mg/kg BW SC weekly interval for the period of three weeks. The supportive treatment included Inj. Chlorpheniramine maleate @ 0.5 mg/kg body weight I/M and Inj. Multivitamin 2 ml IM for 5 days. The clinical recovery was evaluated on the basis of absence of pruritus, erythema and regrowth of hairs. The calf showed uneventful recovery after 24th day (Fig. 3) with normal appetite (Fig. 4).

Sarcoptic mange, is a highly infectious dermatological disease transmitted by direct contact between infested animals or by contaminated fomites. The skin lesions caused by this burrowing mite first starts on the head, neck and shoulders and can spread to other parts of the body. In cattle, on the inner surface of thighs, underside of the neck and brisket and around the root of the tail is most prominent site for scabies lesions (Constable, et al. 2017). However, the whole body may be involved in 6 weeks (Ketzis, 2023) period. In present case, the

young calf affected due to immuosuppression. The young animals showed a higher infestation rate of *S. scabiei* than the adults and this could be attributed to soft and tender skin, dense hair coat, huddling tendency and relatively low level of immunity in young animals (Patel et al., 2003) reported in buffalo calf. There was no significant correlation observed in the age wise and gender wise prevalence of sarcoptic mange affected cattle (Singh, et al. 2018).

The scratching and rubbing of the affected areas to hard objects to mitigate the itching and the scratching leads to excoriation and erythematous lesions on the skin surface. The disease spreads speedily in dairy and breeding herds due to overcrowding, malnutrition and meager managemental surroundings. Burrowing and feeding activities of mite causes mechanical damage, secretion of irritant substances or immunological hypersensitivity to foreign antigen of mite (Nazir et al., 2014) resulting in inflammation and severe itching. In mange affected cattle, significantly ($p < 0.01$) reduced haemoglobin, packed cell volume,



Fig. 3. Calf with absence of erythema, crust and regrowth of hair (24th day After Treatment)



Fig. 4. Calf with normal appetite (24th day After Treatment)

total erythrocyte count and lymphocytes recored, whereas total leukocyte count and eosinophils were significantly ($p<0.01$) increased (Rathore, et al. 2024). Macrocyclic lactone endectocides (including ivermectin, eprinomectin, moxidectin, and doramectin) are the preferred products for treatment of sarcoptic mange (Constable *et al.*, 2017). For effective control of sarcoptic mange in cattle, it is very important to isolate the infested animals and to treat all cattle at risk. In present case, there is no any recurrence of skin lesion even follow up of six months.

4. CONCLUSION

Considering the public health hazard of scabies, the animals infested with mange if treated properly and timely will recover early. The skin diseases further prevents economic losses and market values.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

- Constable PD, Kenneth W, Hinchcliff SH & Done Walter Grünberg (2017) *Veterinary Medicine- A Textbook of diseases of Cattle, Horses, Sheep, Pigs and Goats*. 11th ed. Elsevier Riverport Lane St. Louis, Missouri Publication. Pp: 1619-1621.
- Jalajakshi K., Ch Lalitha & Jayalakshmi J. (2015). therapeutic efficacy of nimant gel

- Against mange in buffaloes. *Int. J. Agric.Sc & Vet.Med.* 3(4):1-4.
- Kebede Abriham & Hirpa Shafi (2022). Prevalence and Identification of Mange Mites on Cattle in and Around Nekemte Town, East Wollega Zone, Oromia Regional State, Western Ethiopia. *Veterinary Medicine: Research and Reports*.13: 109-116.
- Ketzis J. K. (2023). Mange in Cattle. *MSD Veterinary Manual*. Merck & Co., Inc., Rahway, NJ, USA.
- Nazir T, Katoch R, Godara R, Yadav A. & Pandey V. (2014). Observations on buffalo sarcoptic mange in Jammu, India. *Buffalo Bull.* 33(3): 308-315.
- Patel, J.S., Patel P.R., Panchasara H.H. & Brahmaxtri K.G. (2003). Epizootiology of sarcoptic mange in buffalo calves. *Indian Vet. J.*, 80: 972-974.
- Rathore G, Sharma SK, Joshi M, Saini A & Verma AK (2024). Prevalence, clinical and haemato-biochemical studies on mange in cattle. *International Journal of Advanced Biochemistry Research*. SP-8(1): 290-293. DOI: <https://doi.org/10.33545/26174693.2024.v8.i1Se.381>
- Scott, DW (2007). Color Atlas of Farm Animal Dermatology. 1st Edn., Blackwell Publishing Ltd., UK. Pp: 24-25.
- Sharma S, Sharma D, Pathak V & Singh E. (2021). Ectoparasites of cattle and their control strategies. *Indian Farmer*. 8(3):242-246.
- Singh A, Tiwari A, Shukla PC, Baghel RP, Maurya A & Das G (2018) Prevalence of sarcoptic mange in cattle in and around Jabalpur. *J Entomol. and Zool. Stud.* 6(4):1386-1387.
- Soulsby E.J.L. (1982) *Helminthes, Arthropods and Protozoa of Domesticated Animals*.7th edn., ELBS and Baillere Tindall, London.

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of the publisher and/or the editor(s). This publisher and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.

© Copyright (2024): Author(s). The licensee is the journal publisher. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:

The peer review history for this paper can be accessed here:

<https://www.sdiarticle5.com/review-history/127124>