



International Journal of Veterinary Sciences and Animal Husbandry



ISSN: 2456-2912

VET 2024; SP-9(6): 143-146

© 2024 VET

www.veterinarypaper.com

Received: 14-09-2024

Accepted: 20-10-2024

MS Murugan

Assistant Professor, Veterinary
University Training and
Research Centre, Rajapalayam,
Tamil Nadu Veterinary and
Animal Sciences University
(TANUVAS), Tamil Nadu, India

V Palanichamy

Professor and Head, Veterinary
University Training and
Research Centre, Rajapalayam,
Tamil Nadu Veterinary and
Animal Sciences University
(TANUVAS), Tamil Nadu, India

M Madhanmohan

Assistant Professor, Vaccine
Research Centre-Viral Vaccines,
Centre for Animal Health
Studies, Tamil Nadu Veterinary
and Animal Sciences University
(TANUVAS), Tamil Nadu, India

TV Meenambigai

Professor and Head Vaccine
Research Centre-Viral Vaccines
Centre for Animal Health
Studies, Tamil Nadu Veterinary
and Animal Sciences University
(TANUVAS), Tamil Nadu, India

Corresponding Author:

MS Murugan

Assistant Professor, Veterinary
University Training and
Research Centre, Rajapalayam,
Tamil Nadu Veterinary and
Animal Sciences University
(TANUVAS), Tamil Nadu, India

Successful clinical management of contagious ecthyma in Kanni goats of Virudhunagar district of Tamil Nadu

MS Murugan, V Palanichamy, M Madhanmohan and TV Meenambigai

DOI: <https://doi.org/10.22271/veterinary.2024.v9.i6Sc.1894>

Abstract

An outbreak of contagious ecthyma was noticed at organised Kanni breeding goat farm, Virudhunagar District during September 2024. The morbidity was 68% but there was no mortality. Both sex of goats and kids were affected. The goats developed pyrexia with restricted feed intake, appeared dull, depressed with lesions on muzzle, nostrils and lips. The Characteristic lesions and physical examination findings strongly suggested contagious ecthyma and further confirmed by PCR assay. The affected goats were segregated from browsing and provided with stall feeding. They were treated with Ceftriaxone (15mg/kg, IM, BID) for five days, Meloxicam (0.5mg/kg IM) for 3 days and Viro care 10mL/day for five days. The lesions were washed with potassium permanganate solution and an ethno veterinary medicine paste of tender neem leaves and turmeric was applied over the lesions thrice daily. There was complete recovery within 3-4 weeks.

Keywords: Kanni goat, kids, ORF, contagious ecthyma, clinical examinations, virudhunagar

Introduction

ORF, commonly known as sore mouth or contagious pustular dermatitis, is caused by the parapoxvirus and leads to scabby lesions around the mouth and nostrils. Contagious ecthyma is an eruptive skin disease with a global presence (Mondal *et al.*, 2006) ^[4]. This virus is primarily responsible for producing acute pustular lesions (Abdullah *et al.*, 2015) ^[1]. The virus can be transmitted through direct or indirect contact via broken, scarified, or damaged skin (Frandsen *et al.*, 2011) ^[3]. Morbidity associated with the disease can reach as high as 100%, but the mortality rate in uncomplicated cases rarely exceeds 1% (Abu Elzein *et al.*, 2011) ^[2]. The increased mortality in young animals is primarily due to their inability to feed, resulting from oral lesions that may lead to secondary infections and anorexia. This condition tends to be more severe in goats than in sheep (Nandi *et al.*, 2011) ^[10]. Contagious ecthyma can be passed to humans through direct or indirect contact with infected animals (Groves *et al.*, 1991) ^[6]. The economic impact of this disease is considerable, especially in its effects on young lambs and kids. ORF results in significant economic setbacks in small ruminants, as the lesions often hinder optimal productivity and lower the market value of meat (Nandi *et al.*, 2011) ^[10]. Although there is no specific treatment as it is self-limiting, the use of topical antibacterial agents can facilitate a faster recovery, help the animals resume normal feeding (Wilson *et al.*, 2002) ^[16].

Materials and Methods

The Kanni goat breeding private farm was located at Rajapalayam, Virudhunagar District, Tamil Nadu, India. The farm had a size of 5 bucks, 84 does with 52 kids. The affected goats appeared dull, depressed, and anorexic. Few adult goats of irrespective of sex and kids were exhibited characteristic skin lesions on oral commissure, lips, muzzle and extended to all over the face. Their external skin lesions were dry, ulcerative, and scabby, initially occurring at the corners of the lips and gradually spreading to the areas around the mouth (Figure: 1a-1d). There was increased rectal temperature and presence of nasal exudates. The pooled scab material was collected and Viral DNA was extracted from 10% suspension of scab materials by phenol-chloroform method as described by Sambrook *et al.* (1989) ^[13]. Polymerase chain reaction (PCR) was performed following method of Ramesh *et al.* (2008) ^[12].

The extracted DNA was subjected to PCR using CEV specific primers which flanks a 408 bp sequence (forward primer: 5' CGC AGA CGT GGC TGA CGT 3' and reverse primer: 5' TGA GCT GGT TGG CGC TGT CCT 3'). The PCR cycling condition was one cycle of 94°C for 12 minutes followed by 40 cycles of 94°C for 30 seconds and 68°C for 45 seconds and final soaking at 4°C in a thermal cycler (Eppendorf Master cycler). The PCR amplified products were examined 2% agarose gel containing ethidium bromide. The affected goats were treated with Ceftriaxone (15mg/kg, IM, BID, Intacef) for five days, Meloxicam (0.5mg/kg IM, Melonex) for 3 days and Viro care 10mL/day for five days. The lesion was cleaned using cotton swabbed in potassium permanganate solution. Lesion was treated externally by application of herbal paste prepared from turmeric powder and aloe vera gel in 1:1 ratio. After each application fresh paste was prepared and applied twice daily.

Results and Discussion

Contagious ecthyma is a disease that affects sheep and goats found in tropical areas with hot and humid climates. *Parapoxvirus* causes proliferative skin lesions, starting as papules, progressing to pustules, and eventually forming thick scabs or crusts on the mucous membranes of the lips, muzzle, and nostrils. The symptom observed during present outbreak

was suggestive of contagious ecthyma. The disease was further confirmed by PCR (Fig.1-g). ORF virus can resist dry environment and can continue to live for considerable length of time ranging from months to years in dry environments (Radostits *et al.*, 2007) [11].

Diseased goats kept in sick animal shed and treated as above showed complete recovery within three week of starting the treatment (Fig.1 e-f).

Aloe vera contains anthraquinones with antiviral properties that inactivate enveloped viruses. It also has six antiseptic agents—lupeol, salicylic acid, urea nitrogen, cinnamic acid, phenols, and sulfur—that inhibit fungi, bacteria, and viruses. The polysaccharide glucomannan and growth hormone gibberellin stimulate fibroblast activity, boosting collagen synthesis with both topical and oral use (Chitra *et al.*, 1998) [5]. Aloe vera gel enhances collagen composition, increases cross-linking, and improves wound contraction and scar tissue strength. Turmeric contains curcumin, supports wound healing through its anti-inflammatory (Chitra *et al.*, 1998) [5], anti-infectious (Heggars *et al.*, 1996; Ling *et al.*, 2009) [7, 8], and antioxidant effects (Mega *et al.*, 2013) [9]. Topical curcumin application enhances re-epithelialization and promotes neovascularization. Both synthetic and traditional herbal therapies help in treating the infection (Nandi *et al.*, 2011) [10].





Conclusion

Most of the affected goats of all ages and sexes showed pyrexia (40 °C), anorexia, depression, and scab lesions around the mouth and nostrils, with 68% morbidity. Early identification of disease and timely intervention of both synthetic and herbal therapies curbs the contagious ecthyma infection in Kanni goats.

Acknowledgement

Authors are grateful to the Director of Extension Education, Chennai and the Director of CAHS, Chennai Tamil Nadu for providing facilities for carried out this work.

Conflict of Interest: None

Conflict of Interest

Not available

Financial Support

Not available

References

1. Abdullah AA, Ismail MF, Bin Balakrishnan KN, Bala JA, Hani H, Abba Y, *et al.* Isolation and phylogenetic analysis of caprine ORF virus in Malaysia. *Virus Dis.* 2015;26(4):255-259.
2. Abu Elzein EME, Housawi FMT. Severe long-lasting contagious ecthyma infection in a goat's kid. *Zentbl Veterinarmed B.* 2007;44:561-564.
3. Frandsen J, Enslow M, Bowen AR. *Orf parapoxvirus* infection from a cat scratch. *Dermatol Online J.* 2011;17.
4. Mondal B, Bera A, Hosamani M, Tembhurne P, Bandyopadhyay S. Detection of Orf virus from an outbreak in goats and its genetic relation with other parapoxviruses. *Vet Res Commun.* 2006;30:531-539.
5. Chitra R, Sajithlal GB, Chandrakasan G. Influence of *Aloe vera* on collagen characteristics in healing dermal wounds in rats. *Mol Cell Biochem.* 1998;181:71-76.
6. Groves RW, Wilson-Jones E, MacDonald DM. Human Orf and milkers' nodule: a clinicopathologic study. *J Am Acad Dermatol.* 1991;25(4):706-711.

7. Hegggers JP, Kuchukcelebi A, Listengarten D, Stabenau J, Ko F, Broemeling LD, *et al.* Beneficial effect of aloe on wound healing in an excisional wound model. *J Altern Complement Med.* 1996;2:271-277.
8. Ling G, Yang S, Zhou H, Shao L. Synthesis, crystal structure, and anti-inflammatory properties of curcumin analogues. *Eur J Med Chem.* 2009;44(2):915-919.
9. Mega B, Li J, Cao H. Antioxidant and anti-inflammatory activities of curcumin on diabetes mellitus and its complications. *Curr Pharm Des.* 2013;19(11):2101-2113.
10. Nandi S, De UK, Choudhury S. Current status of contagious ecthyma or Orf disease in goats and sheep—A global perspective. *Small Rumin Res.* 2011;96(2-3):73-82.
11. Radostits OM, Gay C, Hinchcliff KW, Constable PD. *A Textbook of the Diseases of Cattle, Horses, Sheep, Pigs and Goats.* 10th ed. Edinburgh: Saunders Elsevier; 2007.
12. Ramesh A, Vadivoo VS, Suresh Babu S, Saravanabava K. Confirmatory diagnosis of contagious ecthyma by amplification of the GIF/IL-2 gene by PCR. *Tamil Nadu J Vet Anim Sci.* 2008;4(6):208-210.
13. Sambrook J, Fritsch EF, Maniatis T, editors. *Molecular Cloning: A Laboratory Manual.* 2nd ed. Cold Spring Harbor (NY): Cold Spring Harbor Laboratory Press; 1989.
14. Shivaraju S, Mohan D, Kalaiselvan E, Maiti SK, Prakash GV. Successful clinical management of contagious ecthyma (Orf) in goat: A case report. *Int J Vet Sci Anim Husbandry.* 2021;6(1):40-42.
15. Singh RK, Rai D, Yadav D, Bhargava A, Balzarini J, De Clercq E. Synthesis, antibacterial and antiviral properties of curcumin bioconjugates bearing dipeptide, fatty acids and folic acid. *Eur J Med Chem.* 2010;45(3):1078-1086.
16. Wilson DJ, Scott PR, Sargison ND, Bell G, Rhind SM. Effective treatment of severe facial dermatitis in lambs. *Vet Rec.* 2002;150:45-46.

How to Cite This Article

Murugan MS, Palanichamy V, Madhanmohan M, Meenambigai TV. Successful clinical management of contagious ecthyma in Kanni goats of Virudhunagar district of Tamil Nadu. *International Journal of Veterinary Sciences and Animal Husbandry.* 2024;SP-9(6):143-146.

Creative Commons (CC) License

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0) License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.