



ISSN: 2456-2912

VET 2024; 9(6): 559-561

© 2024 VET

[www.veterinarypaper.com](http://www.veterinarypaper.com)

Received: 16-10-2024

Accepted: 18-11-2024

**Shveta Singh**

Department of Veterinary  
Medicine, C.V.Sc., Khanapara,  
Guwahati, AAU, Assam, India

**Nripendra Singh**

Department of Veterinary  
Anatomy & Histology, College of  
Veterinary Science & Animal  
Husbandry, OUAT,  
Bhubaneswar Odisha, India

**Manisha Tyagi**

Division of Livestock Production  
Management, ICAR-NDRI,  
Karnal, Haryana, India

**Jayashree Sarma**

Department of Veterinary  
Microbiology, C.V.Sc.,  
Khanapara, Guwahati, AAU,  
Assam, India

**Renu Singh**

Department of Veterinary  
Pathology, C.V.Sc. & A.H.,  
DUVASU, Mathura, Uttar  
Pradesh

**Varsha Gangwar**

Department of Veterinary  
Surgery & Radiology, C.V.Sc. &  
A.H., DUVASU, Mathura,  
Uttar Pradesh, India

**Khumtya Debbarma**

Department of Veterinary  
Pharmacology & Toxicology,  
C.V.Sc., Khanapara, Guwahati,  
AAU, Assam, India

**Diksha Lade**

School of Wildlife Forensic and  
Health, NDVSU, Jabalpur,  
Madhya Pradesh, India

**Corresponding Author:**

**Nripendra Singh**

Department of Veterinary  
Anatomy & Histology, College of  
Veterinary Science & Animal  
Husbandry, OUAT,  
Bhubaneswar Odisha, India

## Successful therapeutic management of contagious ecthyma (Orf) in non-descript goat: A case report

**Shveta Singh, Nripendra Singh, Manisha Tyagi, Jayashree Sarma, Renu Singh, Varsha Gangwar, Khumtya Debbarma and Diksha Lade**

### Abstract

Contagious ecthyma, commonly known as orf, is a highly contagious zoonotic disease affecting small ruminants globally. It is characterized by severe lesions around the mouth, lips, gums, and tongue. A non-descript goat, aged 1 year, was presented to the Veterinary Clinical Complex (VCC), College of Veterinary Science, AAU, Khanapara, Guwahati, Assam with symptoms of pyrexia, anorexia, nasal discharge, lameness, and ulcerative skin lesions on the muzzle and mouth. Auscultation indicated pneumonia, and the clinical signs were consistent with orf. The condition was managed using antibiotics, meloxicam (0.5 mg/kg body weight), herbal antidiarrheals, and topical treatments with boroglycerine, turmeric powder, and boric acid. Goat showed full clinical recovery following treatment.

**Keywords:** Contagious ecthyma, orf, goat, zoonotic disease, therapeutic management, topical treatment, pneumonia

### Introduction

Orf, also known as contagious ecthyma, contagious pustular dermatitis (CPD), sore mouth, or scabby mouth, is an acute, contagious, and economically significant zoonotic viral disease affecting sheep, goats, and other domesticated and wild ruminants (CDC, 2015) [3]. The disease manifests as painful skin lesions, primarily around the mouth and muzzle, which can lead to anorexia and even starvation in affected animals due to the discomfort caused by these lesions (Constable *et al.*, 2017) [16]. The characteristic clinical signs include lesions on the mucous membranes of the oral cavity, tongue, lips, and teats, progressing through stages of papules, vesicles, pustules, and scabs, which are diagnostically significant.

Contagious ecthyma (Orf) is caused by a virus belonging to the genus *Parapoxvirus* of the family *Poxviridae* (Murphy *et al.*, 2012; Nadeem *et al.*, 2010) [13, 14]. Transmission occurs through direct or indirect contact, typically via broken or damaged skin. The virus is resilient, capable of surviving in dry environments for months to years, which explains its persistence and transmission potential, particularly in conditions such as pasture or manual feeding during drought (Radostits *et al.*, 2007) [16]. While the disease is reported in all seasons globally (Nandi *et al.*, 2011) [15], outbreaks tend to be more common in late summer, autumn, and winter, particularly among young animals, with peak incidence occurring in the first 3 to 4 months of life (Lovatt *et al.*, 2012; Reid *et al.*, 2007) [11, 17]. Prevalence rates are typically higher in goats than in sheep (Mondal *et al.*, 2006; Scagliarini *et al.*, 2012) [12, 19], with some animals acting as asymptomatic carriers. In goats, the disease often presents more severely compared to sheep (Radostits *et al.*, 2006; Aiello and Moses, 2016) [16, 2]. The Orf virus is an enveloped, double-stranded DNA virus that causes exanthematous dermatitis, primarily affecting young animals aged 3-6 months. It has been observed to cause more severe lesions in goats than in sheep (Nandi *et al.*, 2011) [15]. While morbidity rates can reach 100%, mortality is typically less than 1%, except in cases of secondary bacterial infection, stress, or concurrent diseases, where mortality can rise to 20-50% (Haig and Mercer, 1998) [7].

### Case History and Clinical Observation

A non-descript goat, aged 1 year, was presented to the Veterinary Clinical Complex (VCC), AAU, Khanapara, Guwahati, Assam with symptoms of pyrexia, anorexia, nasal discharge.

lameness, and ulcerative skin lesions on the muzzle and mouth. The lesions were noted to have an offensive odor, with fissure formation on both lips (Figure 1). Auscultation revealed signs of pneumonia. Clinical examination showed an elevated rectal temperature of 105°F, a heart rate of 70 beats per minute, and a respiration rate of 23 breaths per minute. The goat appeared dehydrated and emaciated. The owner reported the loss of two other animals with similar conditions. Based on the history, clinical examination, and characteristic lesions, the case was diagnosed as contagious ecthyma (Orf).



**Fig 1:** Goat with dry, ulcerative lesions around mouth, lips and muzzle

### Therapeutic Management and Discussion

The case was managed with a comprehensive treatment plan aimed at controlling secondary bacterial infections, reducing inflammation, and promoting lesion healing. Good personal hygiene practices were emphasized to prevent further transmission of the virus due to its known zoonotic potential. To treat pneumonia and secondary bacterial infections, the goat was administered Enrofloxacin (Floxidin 10%) at a dose of 5 mg/kg body weight intramuscularly once daily for 5 days. For pain and inflammation, Flunixin Meglumine (Megludyne) was given intravenously at 2.2 mg/kg body weight twice daily for 3 days. Additionally, Catcough, an electuary with immunomodulatory properties, was provided orally at a dosage of 15 g, three times daily for 5 days. Povidone Iodine (Cipladine-5%) was applied topically to the ulcerative skin lesions until healing was observed. This therapeutic regimen resulted in significant clinical improvement, with the goat showing noticeable recovery. The presence of ulcerative, scabby lesions in the oral cavity, along with lameness and respiratory distress, are consistent with contagious ecthyma (Orf) infection. Orf virus typically enters through abrasions in the skin and replicates within epidermal cells, leading to the development of progressive skin lesions that follow a well-defined sequence: erythema, macule, papule, vesicle, pustule, scab, and eventually scar formation (Gelberg *et al.*, 2012; Hargis *et al.*, 2012; Tizard, 2013) [6, 8, 20]. Although Orf primarily affects the squamous epithelium of the oral cavity, eyelids, teats, and coronary bands, it can extend to other regions, including the esophagus and rumen,

sometimes resulting in ulcerative gastroenteritis (Zachary *et al.*, 2012) [8].

Nandi *et al.* (2011) [15] noted severe proliferative dermatitis and chronic pneumonia in Orf-infected goats, along with additional complications such as arthritis and lymphadenopathy, findings that align with the clinical presentation in this case. The observed respiratory symptoms, particularly pneumonia, may be attributed to either the extension of the skin lesions into the respiratory tract or secondary bacterial infections. In line with existing literature, specific antiviral treatment for Orf is not typically recommended. Instead, supportive care that includes the topical application of antiseptics and systemic antimicrobial agents is advised to reduce the severity of symptoms and hasten recovery (Radostits *et al.*, 2007; Nandi *et al.*, 2011) [16, 15]. In this case, the use of Povidone Iodine and systemic antibiotics helped control the infection and facilitated recovery without further complications.

### Conclusion

Contagious ecthyma, a zoonotic disease, can cause substantial economic losses in livestock. Early detection and clinical management are essential for limiting its spread and reducing its impact on the flock. Although the disease is self-limiting, secondary bacterial infections often complicate recovery, which can be effectively managed through the use of antibiotics, anti-inflammatory medications, and topical herbal preparations, such as those containing turmeric. In cases involving diarrhea, herbal anti-diarrheal treatments, like Neblon, have proven effective. Culling persistently infected animals is an important measure to prevent further transmission and protect the overall health of the flock.

### Acknowledgement

The authors wish to express their sincere gratitude to the Dean, College of Veterinary Science, AAU, Khanapara, Guwahati, Assam for unwavering support throughout the duration of this study.

### Conflict of Interest

The authors declare that they have no conflict of interest concerning the publication of this article.

### Financial Support

Not available

### Reference

1. Abdullah FFJ, Adamu L, Osman AY, Mohammed K, Saharee AA. Contagious Ecthyma in goats: A case report of two outbreaks in Malaysia. *Veterinary World*. 2015;8(4):569-573.
2. Aiello SE, Moses MA. *The Merck Veterinary Manual*. 11<sup>th</sup> Ed. Merck & Co., Inc, 2016.
3. Centers for Disease Control and Prevention (CDC). Orf virus infection. [Internet], 2015. Available from: <https://www.cdc.gov/poxvirus/orf-virus/index.html>
4. Constable PD, Hinchcliff KW, Done SH, Grünberg W. *Veterinary Medicine: A textbook of the diseases of cattle, horses, sheep, pigs, and goats*. 11<sup>th</sup> Ed. Saunders Elsevier, 2017.
5. Frandsen P, Bertelsen MF, Lorch JM. Orf virus in captive muskoxen, Denmark. *Emerging Infectious Diseases*. 2011;17(11):2067-2069. <https://doi.org/10.3201/eid1711.110740>

6. Gelberg HB, McGavin MD, Zachary JF. Pathologic Basis of Veterinary Disease. 5<sup>th</sup> Ed. Elsevier; 2012.
7. Haig DM, Mercer AA. Ovine diseases: Contagious ecthyma (Orf). *Veterinary Microbiology*. 1998;55(1-4):169-174.  
[https://doi.org/10.1016/S0378-1135\(98\)00042-9](https://doi.org/10.1016/S0378-1135(98)00042-9)
8. Hargis AM, Ginn PE, Mansell JEKL, Rakich PM. Skin and appendages. In: Zachary JF, McGavin MD, editors. Pathologic Basis of Veterinary Disease. 5<sup>th</sup> Ed. Elsevier, 2012, p. 973-1041.
9. Kumar P, Hosamani M, Singh RK, Bhanuprakash V, Sreenivasa Gowda RN. Clinical features and management of contagious ecthyma in goats. *Veterinary Record*. 2016;178(8):197-198.  
<https://doi.org/10.1136/vr.103207>
10. Kumar P, Mishra AK, Singh KP, Tewari HC, Chandana S. Contagious ecthyma in goats: A report of two outbreaks. *Veterinary Practitioner*. 2015;16(2):186-188.
11. Lovatt F, Cudmore T, Naylor R. Orf outbreaks in sheep: A discussion of control strategies and treatment approaches. *Livestock*. 2012;17(1):17-21.  
<https://doi.org/10.12968/live.2012.17.1.17>
12. Mondal B, Mohanty BS, Chowdhury S. An outbreak of contagious ecthyma (Orf) in goats in West Bengal, India. *Tropical Animal Health and Production*. 2006;38(5):485-490. <https://doi.org/10.1007/s11250-006-4371-y>
13. Murphy FA, Gibbs EPJ, Horzinek MC, Studdert MJ. *Veterinary Virology*. 4<sup>th</sup> Ed. Elsevier Academic Press, 2012.
14. Nadeem A, Munir M, Rashid MU. Contagious ecthyma in goats: An emerging viral disease. *Pakistan Veterinary Journal*. 2010;30(3):139-143.
15. Nandi S, De UK, Chowdhury S. Current status of contagious ecthyma or Orf disease in goat and sheep: A global perspective. *Small Ruminant Research*. 2011;96(2-3):73-82.
16. Radostits OM, Gay CC, Hinchcliff KW, Constable PD. *Veterinary Medicine: A textbook of the diseases of cattle, horses, sheep, pigs, and goats*. 10<sup>th</sup> Ed. Saunders Elsevier, 2007.
17. Reid HW, Greig A, Aitken ID. Orf (contagious pustular dermatitis) in sheep and goats. In: Aitken ID, Editor. *Diseases of Sheep*. 4th ed. Blackwell Publishing, 2007, p. 299-303.
18. Robinson AJ, Balassu TC. Contagious pustular dermatitis (Orf). *The Veterinary Bulletin*. 1981;51(12):771-782.
19. Scagliarini A, Piatti P, Ciulli S, Battilani M, Prosperi S, McInnes CJ. Contagious ecthyma: A zoonosis of relevance in the international movement of domestic small ruminants. *British Veterinary Journal*. 2012;178(3):192-196.
20. Tizard IR. *Veterinary immunology: An introduction*. 9th ed. Elsevier Saunders, 2013.
21. Zachary JF, McGavin MD. Pathologic basis of veterinary disease. 5<sup>th</sup> Ed. Elsevier, 2012.

**Creative Commons (CC) License**

This is an open-access journal, and articles are distributed under the terms of the Creative Commons Attribution-Non Commercial-Share Alike 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.

**How to Cite This Article**

Singh S, Singh N, Tyagi M, Sarma J, Singh R, Gangwar V, Debbarma K, Lade D. Successful therapeutic management of contagious ecthyma (Orf) in non-descript goat: A case report. *International Journal of Veterinary Sciences and Animal Husbandry*. 2024;9(6):559-561.