



International Journal of Veterinary Sciences and Animal Husbandry



ISSN: 2456-2912

NAAS Rating (2026): 4.61

VET 2026; 11(7): 264-267

© 2026 VET

www.veterinarypaper.com

Received: 14-05-2026

Accepted: 18-06-2026

Ch Srinija

Post Graduate Scholar, VMD,
PVNRTVU, Rajendranagar,
Telangana, India

Rasamalla Suresh

Assistant Professor,
Department of Veterinary
Clinical Complex, College of
Veterinary Science, Korutla, P V
Narsimha Rao, Telangana
Veterinary University,
Hyderabad, Telangana, India

P Rachana

Post Graduate Scholar, VMD,
PVNRTVU, Rajendranagar,
Telangana, India

K Shivani

Post Graduate Scholar, VMD,
PVNRTVU, Rajendranagar,
Telangana, India

O Naresh

Post Graduate Scholar, VMC,
PVNRTVU, Rajendranagar,
Telangana, India

T Jeevanmai

Post Graduate Scholar, VMD,
PVNRTVU, Rajendranagar,
Telangana, India

D Swapna

Post Graduate Scholar, VMD,
PVNRTVU, Rajendranagar,
Telangana, India

Corresponding Author:

K Shivani

Post Graduate Scholar, VMD,
PVNRTVU, Rajendranagar,
Telangana, India

Diagnosis and therapeutic management of staphylococcal dermatitis in a sheep: A case report

Ch Srinija, Rasamalla Suresh, P Rachana, K Shivani, O Naresh, T Jeevanmai and D Swapna

DOI: <https://www.doi.org/10.22271/veterinary.2026.v11.i7d.3634>

Abstract

Dermatological conditions are commonly observed in small ruminants and can adversely affect animal health, welfare and productivity. A 14-month-old female sheep weighing approximately 14.8 kg was presented to the Veterinary Clinical Complex with a two-week history of multiple moist skin lesions, alopecia, crust formation and progressive dermatitis affecting different regions of the body. Clinical examination revealed non-pruritic exudative lesions involving the thigh and mammary regions, accompanied by focal alopecia, skin thickening, hyperpigmentation, and epidermal erosions. Deep skin scrapings were negative for ectoparasites and fungal elements. Bacteriological examination of lesion swabs yielded pure growth of *Staphylococcus aureus*, identified based on cultural, morphological, and biochemical characteristics. Antimicrobial susceptibility testing was performed to guide therapeutic intervention. The animal was treated with systemic antimicrobial therapy, anti-inflammatory medication, topical antiseptic management, and supportive care, resulting in complete clinical recovery within three weeks. The present report highlights the importance of laboratory confirmation and antimicrobial susceptibility-guided therapy in the successful management of ovine bacterial dermatitis.

Keywords: Sheep, dermatitis, *Staphylococcus aureus*, bacterial skin infection, antimicrobial susceptibility testing, ovine dermatology

Introduction

Skin disorders are frequently diagnosed in sheep and represent an important health concern in small-ruminant practice. These conditions can lead to economic losses by reducing growth performance, lowering wool quality, increasing treatment costs and affecting the overall welfare of the animals. A wide range of factors may contribute to the development of dermatological lesions, including ectoparasites, bacterial and fungal infections, nutritional imbalances, environmental influences and disorders of the immune system. Among the bacterial agents, *Staphylococcus aureus* is considered a significant opportunistic pathogen that commonly infects damaged skin, resulting in conditions such as pyoderma, folliculitis, furunculosis, pustular dermatitis, cutaneous abscesses and exudative dermatitis in domestic animals (Foster, 2012; Quinn *et al.*, 2016) ^[2, 6]. *Staphylococcus aureus* is an opportunistic pathogen equipped with several virulence determinants, such as coagulase, hemolysins, exfoliative toxins, adhesins, proteolytic enzymes and the ability to produce biofilms. These characteristics enhance its capacity to adhere to damaged tissues, evade host defenses, invade the skin and establish persistent infections (Lowy, 1998) ^[3]. Infection generally occurs when the integrity of the skin barrier is compromised by mechanical injury, prolonged moisture, ectoparasite infestation, environmental stressors or inadequate hygiene and management practices (Bath *et al.*, 2011) ^[1]. In recent years, the emergence of antimicrobial-resistant *Staphylococcus* isolates from livestock has become an increasing concern, underscoring the importance of bacterial culture and antimicrobial susceptibility testing for selecting effective treatment protocols (Wesołowska *et al.*, 2023) ^[9].

The present case report describes the clinical findings, laboratory confirmation through bacteriological isolation, antimicrobial susceptibility pattern and successful treatment of

naturally occurring staphylococcal dermatitis in a sheep.

Case History and Clinical Examination

A 14-month-old female sheep weighing approximately 14.8 kg was presented to the Veterinary Clinical Complex with extensive cutaneous lesions that had progressively worsened over a period of 15 days. According to the owner, the lesions first appeared as small moist patches over the hindquarters and gradually spread to adjacent areas. The animal had not received recent vaccination or deworming. On physical examination, the sheep was mildly febrile (103.5°F) with a heart rate of 118 beats/min and a respiratory rate of 11 breaths/min. Mild enlargement of the prescapular lymph nodes were also noted.

Dermatological examination revealed multiple exudative lesions involving the thigh and mammary regions. The affected skin showed patchy alopecia, erythema, superficial erosions, ulceration, serous discharge, crusting, localized thickening and areas of hyperpigmentation. The lesions were largely non-pruritic and varied from focal to multifocal in distribution. Based on the clinical presentation, bacterial dermatitis was considered the primary tentative diagnosis.



Fig 1 & 2: Showing erythema, superficial erosions, serous discharge, crusting, localized thickening and hyperpigmentation

Materials and Methods

Deep skin scrapings were collected aseptically from the active margins of skin lesions and examined microscopically following 10% potassium hydroxide (KOH) digestion to exclude ectoparasitic and fungal involvement (Scott *et al.*, 2013; Moriello, 2014) [5].

Sterile swabs collected from active lesions were transported under chilled conditions and cultured on 5% Sheep Blood Agar and Mannitol Salt Agar (MSA). The inoculated plates were incubated aerobically at 37°C for 24–48 h and examined for bacterial growth and colony characteristics.

Bacterial isolates were identified based on colony morphology, Gram staining and standard biochemical tests, including catalase, coagulase, and mannitol fermentation tests. Identification was performed according to standard Veterinary microbiological procedures described by Quinn *et al.* (2016) [6].

Antimicrobial susceptibility testing (AST) was performed using the Kirby–Bauer disc diffusion method on Mueller–Hinton Agar following Clinical and Laboratory Standards Institute (CLSI) guidelines (CLSI, 2024). The susceptibility profile was used to guide antimicrobial therapy.

Results

Microscopic examination of deep skin scrapings was negative for mites, fungal hyphae, and dermatophyte spores, thereby ruling out parasitic mange and dermatophytosis.

Bacteriological culture of lesion swabs yielded pure growth of smooth, circular, convex, opaque, creamy-to-golden yellow colonies on 5% Sheep Blood Agar. On Mannitol Salt Agar, characteristic yellow colonies surrounded by zones of mannitol fermentation were observed. Gram staining revealed Gram-positive cocci arranged in grape-like clusters. The isolates were catalase-positive, coagulase-positive and mannitol fermenting, confirming their identity as *Staphylococcus aureus* (Quinn *et al.*, 2016) [6].



Fig 3: Growth of *Staphylococcus aureus* showing yellow colonies with mannitol fermentation on Mannitol Salt Agar (MSA).



Fig 4: Positive catalase reaction of *Staphylococcus aureus* showing immediate oxygen bubble formation.

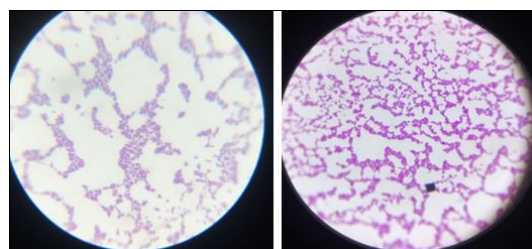


Fig 5 & 6: Gram-stained smear showing Gram-positive cocci arranged in grape-like clusters characteristic of *Staphylococcus aureus*.

Antimicrobial susceptibility testing demonstrated a favorable susceptibility profile with the isolate showing sensitivity to the antimicrobial selected for treatment. The AST results enabled evidence-based antimicrobial selection and contributed to the successful clinical management and recovery of the animal.



Fig 7: Kirby–Bauer disc diffusion assay showing the antimicrobial susceptibility pattern of the bacterial isolate.

Table 1: Antimicrobial susceptibility profile of *Staphylococcus aureus* isolated from a Sheep with bacterial dermatitis

Antibiotic (Abbreviation)	Disc Potency (µg)	Mean Zone of Inhibition (mm)	Interpretation
Ciprofloxacin (CIP)	5	33	Sensitive
Gentamicin (GEN)	10	27	Sensitive
Ceftriaxone (CTR)	30	29	Sensitive
Oxytetracycline (TE)	30	21	Sensitive
Nalidixic acid (NA)	30	24	Sensitive
Streptomycin (S)	10	23	Sensitive
Ampicillin (AMP)	10	11	Resistant

Diagnosis

Based on the characteristic clinical lesions, negative parasitological examination, isolation of *Staphylococcus aureus* in pure culture and antimicrobial susceptibility testing results, the case was diagnosed as Staphylococcal bacterial dermatitis in a sheep.

This version is concise, scientifically sound, avoids repetition follows international journal style and provides a clear progression from diagnostics to confirmation and diagnosis. Replace the AST values with your actual zone diameters before submission.

Treatment and Outcome

Based on the antimicrobial susceptibility profile, the animal was treated with Ceftriaxone administered intramuscularly at a dose rate of 15 mg/kg body weight once daily for five consecutive days. Supportive therapy included meloxicam (0.5 mg/kg body weight, IM) for three days to alleviate inflammation and discomfort, along with antihistaminic medication. The affected skin was gently cleansed with povidone–iodine solution at regular intervals to reduce surface bacterial contamination and facilitate wound healing. In addition, the owner was advised to improve housing hygiene and maintain a clean, dry environment throughout the treatment period.

A noticeable clinical response was observed within one week of therapy, characterized by reduction in erythema, exudation and lesion severity. Progressive drying of the lesions, regression of crust formation and re-epithelialization of the affected areas were evident during subsequent examinations. By the second week, marked improvement in skin integrity accompanied by initiation of hair regrowth was observed. Complete resolution of the dermatitis, with restoration of normal skin architecture and hair coat, was achieved within three weeks. No recurrence of lesions was recorded during the follow-up period, indicating a favourable therapeutic outcome.

Discussion

Dermatitis caused by *Staphylococcus aureus* represents an important but often under reported dermatological condition in sheep. The organism is considered an opportunistic pathogen capable of exploiting breaches in the cutaneous barrier and establishing infection through a variety of virulence mechanisms (Lowy, 1998; Foster, 2012) ^[3, 2]. The production of coagulase, homolysis, proteases, exfoliative toxins, and biofilm-associated factors facilitates tissue invasion, epidermal destruction and persistent inflammation. The clinical findings observed in the present case including alopecia, moist dermatitis, crust formation, hyperpigmentation and epidermal erosions are consistent with previous descriptions of ovine staphylococcal dermatitis (Bath *et al.*,

2011; Foster, 2012) ^[1, 2]. Similar lesion characteristics have been reported in sheep affected by pyogenic dermatitis and staphylococcal skin infections in which *S. aureus* was recovered as the predominant bacterial pathogen (Roccaro *et al.*, 2018) ^[7].

The absence of mites and fungal elements in skin scrapings strengthened the diagnostic significance of the bacteriological findings. Differential diagnoses considered included dermatophytosis, parasitic mange, dermatophilosis, photosensitization, zinc-responsive dermatosis and ectoparasitic dermatitis. Laboratory confirmation was therefore essential for establishing an accurate diagnosis.

Isolation of coagulase-positive *S. aureus* in pure culture from active lesions strongly supports its etiological role in the present case. Similar observations have been reported by Bath *et al.* (2011) ^[1], who demonstrated the importance of *S. aureus* as a significant pathogen associated with ovine dermatitis.

Antimicrobial resistance among livestock-associated staphylococci is increasingly recognized as a global veterinary and public health concern (Wesołowska *et al.*, 2023) ^[9]. Consequently, empirical antimicrobial therapy may result in treatment failure and contribute to the emergence of resistant strains. Culture-guided antimicrobial therapy based on susceptibility testing is therefore recommended to ensure therapeutic success while promoting antimicrobial stewardship.

The favourable clinical response observed in the present case highlights the importance of integrating microbiological diagnosis, antimicrobial susceptibility testing and supportive dermatological management for successful treatment outcomes.

Conclusion

The present report documents a laboratory-confirmed case of staphylococcal dermatitis in a sheep successfully managed through culture-guided antimicrobial therapy. Isolation and identification of *Staphylococcus aureus*, coupled with antimicrobial susceptibility testing, enabled definitive diagnosis and effective therapeutic intervention. Routine bacteriological investigation and susceptibility profiling should be considered in cases of ovine dermatitis to improve treatment outcomes and support prudent antimicrobial use.

Conflict of Interest

Not available

Financial Support

Not available

References

1. Bath GF, Janse van Rensburg A, Pettey KP, Van Vuuren M, Kidanemariam A. A literature review and investigation of staphylococcal necrotic dermatitis in sheep. Journal of the South African Veterinary Association. 2011;82(4):227-231.
2. Foster AP. Staphylococcal skin disease in livestock. Veterinary Dermatology. 2012;23(4).
3. Lowy FD. Staphylococcus aureus infections. New England Journal of Medicine. 1998;339(8):520-532.
4. Miller WH, Griffin CE, Campbell KL. Muller and Kirk's small animal dermatology. 7th ed. St. Louis (MO): Elsevier; 2013.
5. Moriello KA. Dermatophytosis cats and dogs: A practical guide to diagnosis and therapy. Veterinary Clinics of

- North America: Small Animal Practice. 2014;44(6):1109-1121. doi:10.1016/j.cvsm.2014.06.001.
6. Quinn PJ. Veterinary microbiology and microbial disease. Hoboken (NJ): John Wiley & Sons; 2025.
 7. Roccaro M, Piva S, Scagliarini A, Giacometti F, Serraino A, Merialdi G, *et al.* Case report of a pustular dermatitis outbreak in sheep: Clinical and food safety considerations. Italian Journal of Food Safety. 2018;7(1):6980.
 8. Clinical and Laboratory Standards Institute. Performance standards for antimicrobial susceptibility testing. Wayne (PA): Clinical and Laboratory Standards Institute; 2011.
 9. Wesołowska M, Szczuka E. Occurrence and antimicrobial resistance among staphylococci isolated from the skin microbiota of healthy goats and sheep. Antibiotics. 2023;12(11):1594.

How to Cite This Article

Srinija C, Suresh R, Rachana P, Shivani K, Naresh O, Jeevanmai T, *et al.* Diagnosis and therapeutic management of staphylococcal dermatitis in a sheep: A case report. International Journal of Veterinary Sciences and Animal Husbandry. 2026;11(7):264-267.

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.