CASE REPORT
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CHRONIC DERMATOPHILOSIS IN A MALABARI GOAT – A CASE REPORT

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ABSTRACT

Dermatophilosis is a skin infection impacting various animals caused by *Dermatophilus congolensis*, a gram-positive bacterium, leading to exudative epidermitis with scabs. A female Malabari goat was presented at Teaching Veterinary Clinical Complex Mannuthy, Kerala Veterinary and Animal Sciences University, with recurrent dermatitis. Thick scabby lesions appeared on the udder, face and ear tips. The skin scrapings examination was negative for any fungal or mite elements. Gram stained impression smear from lesions revealed distinct gram-positive coccoid bacteria, suggestive of *Dermatophilus congolensis*. Cultural isolation and identification, confirmed the diagnosis of *Dermatophilus congolensis* infection. Treatment involved Inj. enrofloxacin @ 5 mg/kg for 5 days and continued topical application of povidone iodine mixed in glycerine solution for two weeks.

Key words: Goat, Dermatophilosis, *Dermatophilus congolensis,* Enrofloxacin

INTRODUCTION

Dermatophilosis is a zoonotic disease of economic significance affecting domestic and wild animals especially ruminants. This contagious disease of the skin, caused by *Dermatophilus congolensis*, a gram-positive bacterium, poses substantial challenges to the productivity and wellbeing of cattle, buffalo, sheep and goats across the country (Tresamol and Saseendranath., 2015). The disease when occurring in the severe form causes economic loss because it may result in death or culling of affected animals or a decrease in the productive aspects of animals. In India, where agriculture and animal husbandry serve as an important means of livelihood for many, dermatophilosis creates significant hurdles. The humid and hot climate, damp conditions, bite of ticks

and other biting flies, immunosuppression due to pregnancy and lactation stress could be predisposing factors for the incidence of dermatophilosis (Tresamol *et al*., 2015a). In goats, dermatophilosis affects different parts of the body including the ears, nose, muzzle, feet, scrotum and the area underneath the tail (Loria *et al*., 2005). The present report describes a case of chronic dermatophilosis in a goat and its effective therapeutic management.

CASE HISTORY AND OBSERVATIONS

A female Malabari goat, aged five years was presented to TVCC Mannuthy, with recurrent skin lesions on its face, ears and udder since over a year. It was treated previously using ivermectin injection. On detailed physical examination, the animal had exudative scab like lesions on the face, thick crusts and scabs on the udder skin and the interdigital spaces of the hooves. Skin scrapings turned out to be negative and impression smear examination showed distinct coccoid forms of gram-positive bacteria. The bacteria were cultured on Brain heart infusion agar which produced yellowish white adherent colonies. A smear prepared from this culture was stained (Gram stain) to reveal a tram track appearance of bacterial colonies. The bacteria were then cultured in Sheep blood agar which produced beta haemolysis. Further biochemical tests were performed to differentiate the organism from other gram-positive cocci bacteria. All catalase, oxidase and urease tests were positive. An antibiotic sensitivity test was also conducted which showed that the organism was sensitive to enrofloxacin, penicillin G and ceftriaxone and resistant to ciprofloxacin, chloramphenicol, gentamicin and co-trimoxazole. Based on the clinical signs, culture characters, biochemical tests and typical tram track appearance of the organism in the stained smear, the condition was diagnosed as dermatophilosis. Treatment was initiated using both topical and parenteral medications.

Fig.1 - exudative scab like lesions on face

Fig. 2 - Thick crusts and scabs on udder skin

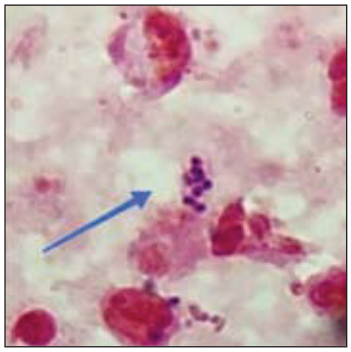

Fig. 3 - Gram positive coccoid forms of colonies

Fig. 4 - Yellowish white adherent D. *congolensis* in impression smears from produced in BHI agar lesions (Gram stain 1000x)

Fig. 5 - Beta haemolysis in blood agar by D. *congolensis*

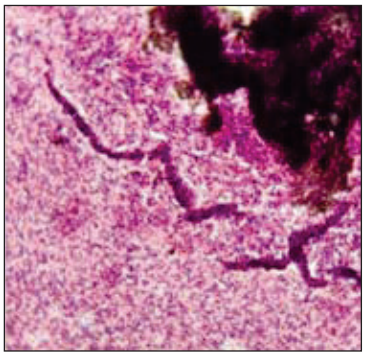

Fig. 6 - Tram-track appearance in stained smear from culture

Fig. 7 - Resolution of lesions on face

Fig. 8 - Reduction in scabs of udder skin

TREATMENT AND DISCUSSION

The case was treated with Inj. enrofloxacin @ 5 mg/kg bodyweight Intramuscular for 5 days and advised topical application of povidone iodine mixed in glycerine solution (1:1) on affected areas of skin for two weeks. The animal showed improvement in 5 days and was advised to continue topical therapy for two more weeks. Dermatophilosis is a proliferative, chronic, exudative dermatitis of both domestic and wild animals. The disease is caused by a gram positive, filamentous actinomycete which has transversely and longitudinally septate appearance of branching filaments forming a parallel row of coccoid zoospores. Infection maybe transmitted mechanically by contact, ectoparasites or intradermal inoculation. The disease is normally restricted to epidermis and does not extend beyond stratum corneum. Dermatophilosis lesions are found normally in areas of skin folds, ventral aspect of body, limbs etc which can be attributed to moisture and prolonged wetting (Dalis *et al*., 2009). The lesions in the beginning appear erythematous and exudative with formation of yellowish-brown crusts. The lesions may progress to matting of hair tufts with greasy exudates giving a characteristic paint brush appearance. In chronic cases of dermatophilosis, the lesions spread widely with formation of scabs and excessive matting of hair. Microscopical examination using Grams or Giemsa staining of smears prepared from fresh lesions may show sphere shaped or oval cocci bacteria occurring in multiple rows arranged longitudinally and transversely giving them a tram track appearance indicative of the infection (Shaibu *et al.,*2011). The organism can be isolated by the technique described by Haalstra (1965) which involved culturing of scabs and other sample materials in blood agar in the presence of 10% carbon dioxide. This method yields colonies of the organism producing beta haemolysis. Treatment is better rewarded when topical therapy is combined with parenteral antibiotic therapy. Topical therapy alone may prove to be ineffective or will have high recurrence rates as the medications may be unable to penetrate thick scabby lesions (Tresamol *et al*., 2015b) Antibiotics that maybe used parenterally include tetracyclines, quinolones, penicillin etc (Tresamol *et. al*., 2013). Topical therapy includes application of Tr. iodine and glycerine in 1:1 dilution. Complete cure can be observed after following a treatment schedule of 4 to 6 weeks.

Dermatophilosis, a zoonotic disease of skin caused by the gram-positive bacterium *Dermatophilus congolensis* that affects the skin barrier in most animals, particularly ruminants (Burd *et al*., 2007).

The infection is bound to cause exudative lesions which causes matting of hair giving it a typical paint brush appearance. The condition is frequently observed in regions of animal body where moisture accumulates, such as the ventral body and limbs. Treatment efficacy improves significantly when parenteral antibiotic therapy is combined with topical application of Tr. iodine and glycerin. To effectively control dermatophilosis, implementing measures such as isolating infected animals, preventing moisture accumulation in animal living areas, eliminating ectoparasites, and employing good husbandry practices are crucial steps.

SUMMARY

A female Malabari goat was brought to Teaching Veterinary Clinical Complex, Mannuthy, with recurrent dermatitis characterized by thick scabby lesions on the udder, face, and ear tips. Examination of skin scrapings using microscope yielded negative results for fungal or mite elements. However, a Gram-stained impression smear from the lesions revealed distinct gram-positive coccoid bacteria, indicative of *Dermatophilus congolensis* infection. Cultural isolation and identification further confirmed this diagnosis. The treatment protocol included an intramuscular injection of enrofloxacin at a dosage of 5 mg/kg for five days, supplemented by a two-week course of topical application of a povidone iodine solution mixed with glycerine.

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