DERMATOPHILOSIS IN A GOAT

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Abstract

The present paper describes the first report of dermatophilosis in a goat in Kerala. The clinical signs included alopecia and thick exudative and crusty lesions on the lower limbs, tail, hindquarters and udder. Dermatophilosis was confirmed based on the microscopical examination of scabs and cultural isolation and identification. The case was treated successfully with parenteral enrofloxacin and topical application of povidone iodine.

Key Words: *Dermatophilosis, goat*

Dermatophilosis is an economically important disease of livestock caused by *D. congolensis*, an Actinomycete, Gram-positive bacterium that produces motile zoospores which invade the skin and cause an acute, sub-acute or chronic skin disease resulting in an exudative epidermitis with scab formation (Zaria, 1993). Singh and Murthy (1978) reported an outbreak of *D. congolensis* infection in goats, with involvement of lymph nodes. Pal (1995) reported dermatophilosis in India in a wide range of species of animals including cattle, buffalo, goat, horse and antelope and also in human beings from states, Gujarat, Delhi, Rajasthan, Uttarpradesh, Haryana and Karnataka. The disease occurs in all areas of the world but can be epizootic in tropical and subtropical areas, where it results in considerable economic loss (Samui and Hugh-Jones, 1990).The present paper reports a case of dermatophilosis in a goat for the first time in Kerala.

Materials and Methods

A seven year old female Jamunapari goat was presented to University Veterinary hospital Kokkalai, with a history of recurrent skin lesions with loss of hair and pruritus on the limbs and tail. It was reported that the skin lesions flared up two months back following kidding. Detailed clinical examination of the animal was performed and findings were noted. Skin scrapings and skin swabs collected from the lesions were subjected to direct microscopical examination and bacterial and fungal culture. The isolate obtained were identified based on morphology, cultural characters and biochemical tests. Antibiogram of the isolate was also studied. The animal was treated with enrofloxacin @5mg/kg BW intramuscularly for five days, povidone iodine solution twice daily as topical application for two weeks and immunol suspension five millilitre twice daily for 10 days.

Results and Discussion

Detailed clinical examination of the animal revealed erythematous areas with loss of hair and crusty thick scabs at the base of the tail, in the pastern region, hind quarters, udder, axillary region and on the face (Fig.1 & 2). Similar clinical findings were also reported previously in goats (Msami *et al*., 2001; Yeruham *et al*., 2003). Direct microscopical examination of Gram's and Giemsa's stained

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smears from the under surface of the scabs revealed parallel rows of coccoid organisms with typical tram track appearance suggestive of *Dermatophilus congolensis* (Fig. 3). Skin scabs were inoculated in seven per cent sheep blood agar and incubated under 10 per cent carbon dioxide tension at 37^{0}C yielded typical greyish white haemolytic colonies of *D. congolensis*. Gram stained smears from the colonies showed Gram positive branching filaments with varying degrees of septations and free zoospores (Fig. 4). The isolate was positive for catalase, oxidase and urease test and showed negative results for nitrate and indole tests. It was able to digest gelatin and Loeffler's coagulated serum indicating proteolytic activity. The isolate showed hydrolysis of starch and casein and gave positive reaction in DNAse test. It produced acid from glucose, fructose, sucrose and mannitol within 24 hours of incubation and was unable to produce acid from lactose, sorbitol and xylose. No gas production was observed from any of these sugars. Similar findings were also reported by several workers (Mannan *et al*., 2009; Nath *et al*., 2010). No fungal spores/elements could be detected on direct microscopical examination of the skin scrapings with 10 per cent potassium hydroxide. Fungal culture in Sabouraud's dextrose agar did not yield any fungal growth even after four weeks. Haemato-biochemical parameters were normal within the reference limits.

Antibiotic susceptibility test revealed sensitivity of the isolate to enrofloxacin, ciprofloxacin, gentamicin, amoxicillin and chloramphenicol and resistance to tetracycline, penicillin and streptomycin. Similar antibiotic sensitivity pattern was also reported for the

Fig.1. Thick scabby lesions on pastern region

Fig. 2. Alopecia and matting of hairs

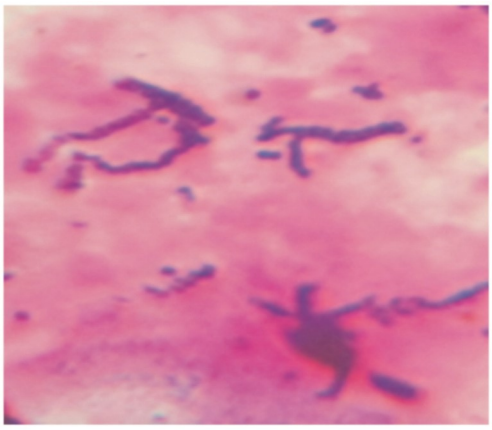

Fig.3. Tram track appearance of *D.congolensis* in scabs(Gram's stain1000x)

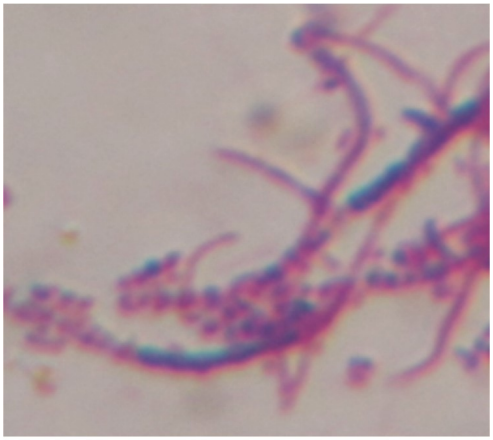

Fig.4. Branching filaments of *D.congolensis* in culture(Gram's stain1000x)

D. congolensis isolates from cattle in Kerala (Tresamol and Saseendranath, 2013).

There was great improvement in the condition after seven days of treatment and the lesions were healed completely and new hairs started to grow after two weeks. No recurrence of the lesions was reported in the next six months of observation. Combination of parenteral antibiotics and topical iodine preparations were found to be effective for the treatment of dermatophilosis in cattle (Tresamol, 2012).

Diagnosis of dermatophilosis among goats in Kerala warrants the need for including dermatophilosis in the differential diagnosis of dermatological disorders of goats. Several factors are associated with the pathogenesis of dermatophilosis such as mechanical injury to the skin, rain fall, tick infestations, concurrent diseases or stress that compromise the host immune system (Ambrose, 1996). Hence, along with specific treatment, identification of the predisposing factors and their elimination is important in the control of dermatophilos.

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