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Clinical Articles

Dermatophilosis and its therapeutic management by Lincomycin in Goats

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Abstract

Dermatophilosis is prevalent in tropical countries and has higher incidence during rainy or high humidity seasons. A one and half year and 10 months old nondescript bucks were referred to Madras Veterinary College hospital with the history of inappetence, pruritus, dirty yellow coloured scabs and crusts on scrotum, dorsum of the neck and wart like appearance of scab and crusts on the ear pinna. The scabs and crusts were collected for direct microscopy which reveals the presence of filamentous and branching zoospores in the impression smears confirmed to be dermatophilosis. The animals were treated with lincomycin @ 10 mg/kg body weight intramusculary along with intramuscular chlorpheniramine maleate @ 0.2 mg/kg for first five days and it was followed by oral lincomycin @ 10 mg/kg for another 9 days. Both animals showed marked improvement after 14 days of therapy with complete clinical improvement after 20 days with the disappearance of scabs and crusts.

Key words: Dermatophilosis, Goats, Scabs, Lincomycin

Dermatophilosis caused by *Dermatophilus congolensis* occurs worldwide and is an economically important skin disease of small ruminants in tropical and sub-tropical countries (Yeruham et al., 2003; Tresamol and Saseendranath, 2013; Anandachitra et al., 2017). The disease has higher incidence during rainy or high humidity seasons (Asmare et al., 2017). Domestic animals like cattle, buffalo, sheep, goat and horses were most frequently affected than pig, dog and cats (Selvakumar et al., 2017). The organism is introduced into the epidermis following injuries of any sort, including those caused by tick bites and thorny vegetation. The organism forms branching filaments in pus, has been isolated from abscessed superficial lymph nodes of Beetal goats (Singh and Murty, 1978). Penicillin-streptomycin and Tetracycline were commonly recommended in goats affected with dermatophilosis (Larsen, 1987; Yeruham et al., 2003; Smith and Sherman, 2009). However, lincosamides are among the first choice of bacteriostatic antibiotics used in veterinary dermatology (Rezanka et al., 2007). This paper reports the occurrence of dermatophilosis in two goats and its successful management by using lincomycin.

Case History and Observations

A one and half and 10 months old nondescript bucks were referred to Madras Veterinary College large animal out patient with the history of scales and crusts over the ear and ventral abdomen, scrotum and dorsum of neck.

On clinical examination the animal had mild degree of pruritus. Few ticks were noticed with palpable lymphnodes. Skin examination revealed heavy crusting and scabs mainly over the scrotum (Fig 1) and dorsum of neck (Fig 2). The dried scabs and crusts on the ear pinna looks like warts (Fig 3). The crusts were whitish to yellowish coloured. Scabs and crusts were easy to remove. The hairs over the infected site were matted. Skin scrapings were collected to examine the presence of fungus and mite. The rectal temperature and other vital parameters like heart rate and pulse rate were within normal range.

The removed crusts and scabs were soaked in normal saline over night. Then they were smeared in two glass slides and fixed by heating. One slide was stained with Gram's stain and another one by Giemsa's stain (OIE, 2008). Dermatophilosis was confirmed by the presence of branching filaments forming ribbons of sphericalor ovoid cocci (Fig. 4). The skin scrapings were also examined under direct microscopy using 10 per cent potassium hydroxide to detect presence of fungal elements or mites. Collected swabs were cultured for *D. Congolensis* on sheep blood agar (Fig 5). The biochemical tests of the isolates were determined as per the methods described by Barrow and Faltham (1993). Peripheral blood smears was negative for blood protozoa with normal blood count. Skin scrapping didn't revealed any mite or fungal infection.

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Treatment and Discussion

The animal was treated with Lincomycin @ 10 mg/kg body weight I/M (Inj. Lynx*) daily for 5 days along with chlorpheniramine maleate @ 0.2 mg/kg I/M. Then it was continued with oral lincomycin @ 10mg/kg (Cap. Lynx – 250 mg) for another two weeks. After five days of therapy there was a halt in progression of skin lesions. Marked improvement was noticed after 14 days of therapy. After 20 days of therapy, there was a complete recovery with the disappearance of scabs and crusts.

The prevalence of the disease is higher in animals living in warm and humid conditions. It is more commonly reported as generalized form (Tresomal and Saseendranath, 2014). From the infected cattle of semi-arid regions of Zimbabwe the lesions were predominant in regions of inguinal area, scrotum, front limbs, udder and external genitalia (Chatikobo et al., 2004). Though dermatophilosis affects many parts of body, ears are commonly involved in goats particularly if they are infected in young age (Larsen, 1987). Other affected areas of the body include the nose, muzzle, feet, scrotum, and underside of the tail (Yeruham et al., 2003; Loria et al., 2005). Both the cases in our report had lesions on over ear pinnae, dorsum of neck, scrotum and inguinal region. The areas frequently exposed to moisture or mild abrasion from vegetation might be the reasons (Smith and Sherman, 2009).

The endemic nature of this disease in this region is due to prevailing agro-climatic conditions, high humidity, tick prevalence, animal to animal contact and concurrent infections. Tiny wart-like scabs first appear on the inner hairless surface with undefined margins of the ear pinna. Latter a severe exudative dermatitis developed with thickening of the skin. The seropurulent exudate formed scabs and matted the hairs, creating large, hard, thick crusts and folds (Loria et al., 2005). The lesions were similar in our goats except that margins of the scabs and crusts were white in color because of the dryness. Lincomycin hydrochloride

Fig 1. Animal with scabs and crusts over scrotum

Fig 2. Animal with scabs and crusts on the dorsal neck region

Fig 3. Dried scabs and crusts appearing as warts on the ear pinna

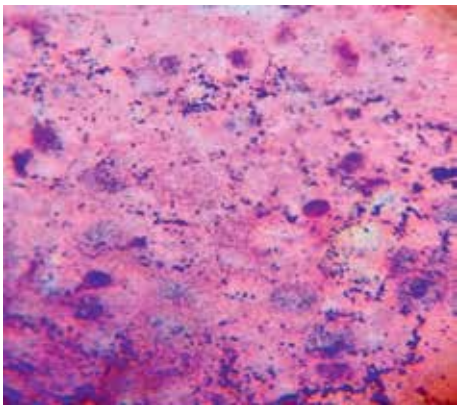

Fig 4. Classical filamentous structure of Dermatophilosis

Fig 5. Culture of Dermatophilosis in sheep blood agar

Lynx* - Wallace Pharmaceuticals, India

belonging to lincosamides has proved to be excellent for the treatment of skin conditions such as frunculosis, abscesses, carbuncles, cellulitis, erysipelas, impetigo, infection burns and wounds (Panigrahi et al., 1997). Lincosamides are well absorbed if given orally and are able to penetrate well into infected skin. Their spectrum of action comprises bacteria commonly associated with skin infections, including staphylococci. Common gram-positive cocci and both gram positive and gram-negative anaerobic bacteria are mostly sensitive to lincomycin and clindamycin (Spížek and Řezanka, 2004). Further, they also exhibit immunomodulatory effects (Rezanka et al., 2007). *Dermatophilus congolensis* is a gram-positive, non–acid-fast, facultative anaerobic, branching actinomyces organisms (Tresamol et al., 2015). Hence susceptibility of this organism to lincosamides is vindicated. Under field conditions a single injection of long acting Oxytetracycline was found effective in treating dermatophilosis in cattle (Ilemobade *et al.,* 1979). However, reports from field veterinarians prove that long acting oxytereacycline was not so effective (author's personal communication) particularly in goats. The co-administration of chlorphenaramine maleate is to reduce the pruritus. Uneventful recovery was noticed after 20 days of therapy.

The present paper reports the incidence of dermatophilosis in goats and its complete clinical recovery to lincomycin @ 10 mg/kg for14 days.

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