

Successful treatment of Dermatophytosis in a red Kandhari calf

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Abstract

Dermatophytosis is an infection of skin, hair and nail caused by colonization on keratinized tissue by dermatophytes such as, *Trichophyton*, *Microsporum* and *Epidermophyton*. A five month old Red kandhari calf referred to the department of Veterinary Medicine, COVAS, Parbhani with history of skin lesions on face and forehead from 15 days. Clinical examination revealed whitish circular asbestos like dermatophytic lesion on the forehead with moderate pruritus. Animal was having normal food intake and all physiological parameters were also within the normal range. The skin scrapping were collected and subjected to culture on Sabraouds dextrose agar (SDA) for confirmatory diagnosis that revealed *Trichophyton verrucosum*. The calf was treated with Povidine iodine (5%) as a topical application twice daily for a period of about 30 days. Uneventful recovery was observed after a period of one month.

Key words: Dermatophytosis, Red kandhari calf, *Trichophyton verrucosum*, Povidine iodine

Dermatophytosis, also known as ringworm, is one of the commonest transmissible infectious skin diseases mainly affecting keratinized structures like nails, skin or hair (Luciene *et al.*, 2008). Dermatophytosis occurs in all species of mammals including cattle and is caused by spore forming fungi, that remain viable for years in dry environment. In cattle, the main etiological agent of ring worm is *Trichophyton verucosum*, although other species have also been isolated such as *Trichophyton metagrophytes*, *Trichophyton equinum*, *Microsporum gypsum*, *Microsporum nanum*, *Microsporum canis* (Mcgavin and Zarchary, 2007). Among cattle, calves are most commonly affected showing characteristic lesions on the face and around the eyes, while in adults, lesions usually occur on the neck and limbs (Radostitis *et al.*, 2007; Terefe *et al.*, 2017). Affected areas show alopecia, breaking off the hair and exudation which along with epithelial debris and fungal hyphae produces the ring shaped dry white crusts that show centrifugal progression (Radostitis *et al.*, 2007). Diagnosis of Dermatophytosis is based on typical clinical signs, wood lamp hair examination, microscopic examination of hair or skin sample and fungal culture (Songer and Post, 2005). Management of the disease is important as it can lead to transmission of infection to other members within the herd and also to humans because of its zoonotic importance. This requires isolation and treatment of infected animals and disinfection of items in the vicinity of the animals (Radostitis *et al.*, 2007).

Case History and Clinical Observations

A five month old Red Kandhari calf referred to the Department of Veterinary Medicine, COVAS, Parbhani with history of skin lesions on forehead from 15 days. Detailed clinical examination revealed whitish circular asbestos like dermatophytic lesion on the face and forehead (Fig. 1), moderate pruritus, normal food intake while as all physiological parameters were within the normal range.

The skin scrapping from affected skin areas were collected and subjected to cultural examination on Sabraouds dextrose agar (SDA) for confirmatory diagnosis that revealed *Trichophyton verrucosum* as the causative agent.

Treatment and Discussion

Calf showed full response to the Povidine iodine (5%) and recovered fully after a period of one month of treatment (Fig. 2). Dermatophytosis affects mainly calves and rarely affects old animals as they show high resistance due to proper adaptation to the disease (Songer and Post, 2005; Terefe *et al.*, 2017). This is a contagious disease and can be transmitted from infected to healthy animals through close contact (Hirsh *et al.*, 2004) or housing condition that favour close contact for long periods (Radostitis *et al.*, 2007). *T. verucosumis* has been reported as the main etiological agent responsible for Dermatophytosis in cattle, although other species having lesser contribution have been reported (Mcgavin and Zarchary, 2007). *T. verucosumis* has been associated with



Fig. 1 Dermatophytic lesions on face and forehead



Fig. 2 Recovered calf showing complete healing of lesions

persistent infections in cattle and has got potential to infect humans as well leading to public health hazards (Nweze, 2010). Characteristic lesions on the face and around the eyes (whitish circular asbestos like dermatophytic lesion) and moderate pruritus were consistently reported in earlier cited literature (Rippon, 1988; Radostitis *et al.*, 2007). Diagnosis is based on typical clinical signs, wood lamp hair examination and fungal culture (Songer and Post, 2005). Dermatophytosis is recognized as a self-limiting disease ranging from 1-4 months and there after showing spontaneous regression that has been attributed to development of a strong cell mediated response correlated with delayed type hyper sensitivity resulting in elimination of the infection (Moriello and Deboer, 1995; Smith, 2009). The immunity is transient and chances of infection remain persistent (Smith, 2009). Upon confirmatory diagnosis the calf was treated with Povidine iodine (5%) as a topical application. This treatment showed promising result and calf recovered fully after one month of continuous treatment.

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