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Sarcoptic mange in a domestic camel (*Camelus dromedarius*)

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Abstract
An adult male camel was presented to Large Animal Medicine Unit, Veterinary Clinical Complex, Veterinary College and Research Institute, Orathanadu with the history of weakness, restlessness, itching, biting and rubbing against objects. Upon physical examination alopecia, erythema, intense pruritis, anorexia and debility were noticed. The lesions were scattered throughout the entire body surface. Diagnosis was made based upon deep skin scraping with liquid paraffin which revealed *Sarcoptes scabiei var. cameli*. The Animal treated with ivermectin @ 0.3 mg/kg body weight s/c and repeated every week for three consecutive weeks and supplemented with multivitamin like tribivet @ 10 mg/kg body weight i/m, lime sulphur lotion was given for external application on skin and Animal recovered uneventfully after 5 weeks of therapy.

Keywords: Mange, camel, pruritus, ivermectin, erythema

Introduction
Camels play a vital role in the socio-economic stability of pastoral communities, particularly in arid and semi-arid regions, where they serve as a primary source of transport, milk, meat and income. However, their health and productivity are frequently challenged by parasitic diseases, among which sarcoptic mange is of major concern. Sarcoptic mange, caused by *Sarcoptes scabiei* var. *cameli*, is one of the most prevalent and debilitating ectoparasitic diseases of camels (Higgins, 1983) [3]. The disease is characterized by severe pruritus, alopecia, thickened crusty skin lesions and progressive emaciation, which together result in a marked decline in the animal's health and productivity. In comparison, other forms of mange, such as chorioptic mange, occur less frequently in camels (Higgins, 1985; Singh and Momin, 2008) [4, 6].

Beyond its veterinary significance, sarcoptic mange has considerable economic implications, including reduced work efficiency, decreased milk and meat yield and in severe cases, mortality occur. Moreover, due to its zoonotic nature, the disease also poses a threat to public health, particularly among individuals in close contact with affected animals, such as herders and veterinarians (Schillinger, 1987) [5]. Consequently, sarcoptic mange remains one of the most important parasitic conditions limiting camel productivity and welfare in endemic regions.

Materials and Methods
An adult male camel presented to the Large Animal Unit, Veterinary Clinical Complex, was clinically examined for dermatological lesions. Detailed history regarding the onset of pruritus, restlessness and behavioural changes such as rubbing against objects was obtained from the owner. Physical examination findings including alopecia, erythema, excoriations and general health status were documented (Figure 1-5). For parasitological confirmation, deep skin scrapings were collected from multiple affected sites using a sterile scalpel dipped in liquid paraffin. The scrapings were examined microscopically for the presence of ectoparasites and their developmental stages.

The camel was treated with ivermectin at the dose rate of 0.3 mg/kg body weight subcutaneously, repeated once weekly for three consecutive weeks. Supportive therapy included intramuscular administration of multivitamin injection (Tribivet @ 10 mg/kg body weight) to improve general condition and topical application of lime sulphur lotion on affected skin areas. The animal was monitored for clinical improvement weekly until complete recovery.

Results

Microscopic examination of skin scrapings revealed numerous mites morphologically consistent with *Sarcoptes scabiei var. cameli* (Figure 6). Mange is a contagious skin disease, characterised by crusty, pruritic dermatitis and hair/ feather loss (Chhabra and Gahlot, 2010) [1]. It is caused by a variety of parasitic mites burrowing in or living on the skin. The camel showed gradual clinical improvement following initiation of therapy. Pruritus and restlessness reduced markedly after the second ivermectin injection. Progressive resolution of alopecia and skin lesions was observed from the third week onwards. The animal's appetite and activity improved concurrently. By the fifth week of therapy, the camel exhibited complete recovery, with regrowth of hair, restoration of normal skin texture and absence of clinical signs. No relapse was recorded during the follow-up period.

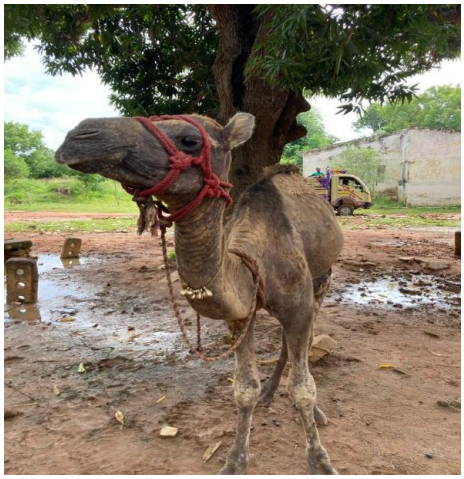

Fig 1: Camel presented with alopecia and blackening of skin

Fig 2: Facial hair loss and crusty lesions noticed

Fig 3: Scaling on the abdominal region

Fig 4: Crusty and scaly lesions in the neck region

Fig 5: Crusty and scaly lesions in elbow and leg region

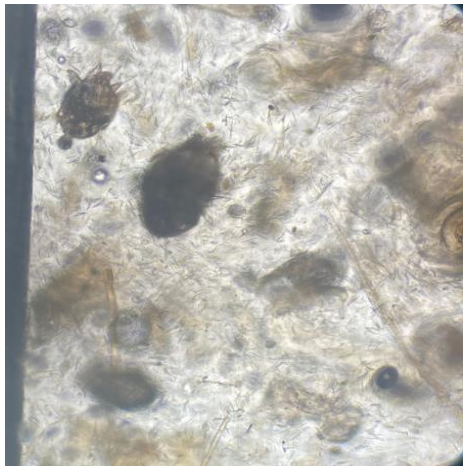

Fig 6: Microscopic examination-*Sarcoptes* sp mite

Discussion

The present case describes sarcoptic mange in a domestic camel, which was successfully diagnosed and treated. The clinical manifestations like intense pruritus, alopecia, erythema, crusting and debility were consistent with earlier reports of sarcoptic mange in camels (Higgins, 1983; Singh and Momin, 2008) [3, 6]. The demonstration of *Sarcoptes scabiei var. cameli* from deep skin scrapings confirmed the diagnosis, supporting the findings of Schillinger (1987) [5], who emphasized microscopy as a reliable diagnostic tool for mange in camels.

Therapeutically, ivermectin has been widely used in mange management due to its efficacy against sarcoptic mites (El-Bahnasawy *et al*., 2012) [2]. In this case, three consecutive weekly injections provided complete resolution of clinical signs without relapse, corroborating previous studies on the effectiveness of systemic ivermectin therapy in camels. Supportive therapy with multivitamins and lime sulphur lotion further enhanced recovery, likely by improving host immunity and providing symptomatic relief. The zoonotic potential of sarcoptic mange highlights the importance of early diagnosis and prompt treatment, not only to prevent production losses in camels but also to safeguard public health. This case underscores the continued relevance of mange as a major parasitic disease in camels, necessitating integrated control measures including treatment, regular monitoring and improved husbandry practices.

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Conflict of interest

The authors do not have any conflict of interest.

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