

CLINICAL STUDIES ON SARCOPTIC MANGE IN CAMEL (*Camelus dromedarius*) IN BANASKANTHA DISTRICT (NORTH GUJARAT)

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ABSTRACT

Clinical studies were conducted in camels naturally infected with sarcoptic mange-mite. Affected camels clinically showed restlessness, emaciation, weakness and marked reduction in milk production and working capacity. Affected camels exhibited alopecia with thick, wrinkled skin over the neck, medial aspect of thigh and brisket region and oozing of serous fluid or blood. Pruritus was marked in the affected camels.

Key words: Camel, lesions, sarcoptic mange

Sarcoptic mange caused by *Sarcoptes scabiei* var *cameli* is recognised as a serious contagious and debilitating disease affecting both genus of camelidae family viz. dromedaries and llamas (Higgins, 1983). Sarcoptic mange mite is stubborn and not easily amenable to chemicals. Besides the contagious nature of the sarcoptic mange, it is also important from zoonotic point of view. Burrowing nature of sarcoptic mites lead to tissue damage, uneasiness, itching and pruritis.

Materials and Methods

A total of 138 camels were examined for sarcoptic mange infection in Banaskantha district of Gujarat state. Each camel was examined for various types of skin lesions like alopecia, patches, scales, excoriation, crusts, hard, thick, dry and wrinkled skin. The nature of lesions was recorded in each case. Similarly, distribution of lesions on the body of camel viz., head, neck and face, shoulder, legs including knee and hock, brisket, perianal, perineal region and root of tail, abdomen, flank and chest were also taken.

Clinical manifestations like itching, biting, nibbling, restlessness, rubbing against the trees and walls were recorded in each case. Based on the nature of lesions and intensity of clinical signs, severity of the disease was classified as:

+ **Initial phase** : Mild signs, development of small red patches on skin, moderate itching and pruritis.

++ **Acute phase** : Alopecia in affected areas, severe itching, excoriation and scab development, raw skin patches in multifocal area.

+++ **Chronic phase** : Thick, dry, wrinkled skin with blood or serous fluid oozing from the lesions, folds were spread over with fine 'chalk-like' covering of scurf and generalised signs viz., restlessness, disinclination to move and anorexia.

Results and Discussion

Out of 138, total 80 camels were found to have sarcoptic mange infection.

(i) **Nature of lesions** : Skin lesions observed were alopecia, small erythematous patches on the skin during initial stage of the disease. Progressive alopecia, excoriation, scales, constant rubbing, exposure of red skin surface were observed during the acute stage of the disease. Lesions consisting of hard, thick and wrinkled skin with fissuring and formation of crust were marked in later stage. At this stage, the skin had a sandy appearance with a chalk like covering of scurf. Similar types of lesions have been observed in camels due to sarcoptic mange (Higgins, 1984; Patel, 1987; Mourad *et al*, 1987; Raisinghani and Kumar, 1990; Singh *et al*, 2001; Wernery and Kaaden, 2002).

Nature of various types of lesions studied in sarcoptic mange affected camels showed alopecia in 71.25% cases followed by scab and crust formation in 65.00% cases, hard, thick and corrugated skin in

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58.75% cases oozing of blood and/or serous exudate in 16.25% cases and red patches on skin in 12.5 years. These findings are in conformity with those described earlier by Raisinghani and Kumar (1990).

Anatomical distribution of lesions : Lesions of sarcoptic mange were distributed over different parts of the body. Anatomically lesions were distributed over medial aspect of thigh, brisket, head, face and neck, preputial sheath in male and udder in female, limbs including knee and hock; flank abdomen and chest and shoulder. Detailed anatomical distribution of lesions in camel affected by sarcoptic mange is presented in table 1.

Relative frequency of occurrence of anatomical distribution of lesions revealed maximum number of cases in perianal and perineal region followed by thigh, brisket, head, face and neck, preputial sheath in male and udder in female and limb. Lesions involving entire body were observed in a very few cases (13.75%). In the present study, majority of the affected camels exhibited lesions in the perianal and perineal region, which could be regarded as the site of predilection. Similar, lesions over perianal, perineal region were also reported (Patel, 1987; Sen *et al*, 1999). Lesions over the thigh, tail, head and face were reported by Higgins (1984); Manohar and Kumar (2002); Wernery and Kaaden (2002). Generalised lesions of sarcoptic mange involving the entire body have also been reported by Sen *et al* (1999) and Dixit *et al* (2002).

Clinical symptoms : Clinical symptoms of sarcoptic mange in camel were intense itching, severe pruritis, biting, constant rubbing (the affected part resulted

Table 1. Anatomical distribution of lesions in camels affected by Sarcoptic mange (n = 80).

| Site of lesion | Total Number of camel affected | Per cent frequency of involvement |
|--------------------------------|--------------------------------|-----------------------------------|
| Perianal, perineal and root of | 58 | 72.50 |
| Thigh | 55 | 68.75 |
| Brisket | 54 | 67.50 |
| Head, face and neck | 42 | 52.50 |
| Prepuceal sheath in male and | 33 | 41.25 |
| Limbs including knee and hock | 30 | 37.50 |
| Flank, abdomen and chest | 22 | 27.50 |
| Shoulder | 15 | 18.75 |
| Whole body | 11 | 13.75 |

into red, raw skin surface), restlessness, weakness, emaciation, disinclination to move and marked reduction in milk production and working capacity. Tissue damage inflicted by the mites appeared to influence the manifestation of the symptoms. Categorisation of the severity of sarcoptic mange was based on the nature of lesions and intensity of clinical signs into three grades viz., initial stage (+), acute stage (++) and chronic stage (+++) which revealed 15 (18.75%), 36 (45.00%) and 29 (36.25%) cases, respectively. Intense pruritis was observed as a common symptom in majority of the camels. Clinical symptoms recorded in the present study were similar to those reported by Lodha (1966), Ibrahim *et al* (1981) and Patel (1987).

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