Therapeutic Management of Sarcoptic Mange in a Camel (Camelus Dromedarius)

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Abstract
An adult male camel was reported with anamnesis of weakness, restlessness itching, biting and rubbing against objects. Upon physical examination the findings were alopecia, erythema, numerous small vesicles, intense pruritis, anorexia and debility. The lesions were scattered throughout the entire body surface. The cause for skin lesion was diagnosed as Sarcoptes scabiei var. cameli. The camel was treated with ivermectin in combination with multivitamin and mineral supplements for a period of time and the treatment resolved the case successfully.

Keywords: Camel, Ivermectin, Mange, Sarcoptes, Scabies.

1. Introduction
Camels play many significant roles in social and economic development for people in numerous countries. The camel has been considered an aid to man for thousands of years in many different respects by providing meat, milk, leather, fibre, fuel, transportation (packing, riding) and racing (Solanki et al., 2013). Camels are also used for draft purposes, pulling ploughs and wagons (Fowler et al., 2006). Pathogenic diseases, poor nutrition and traditional management systems have restricted their full utilization. Despite being usually reared under harsh environment, unsuitable for propagation and transmission, camels are capable of harbouring a fairly large variety of parasites. Mange is a serious skin disease of camelids and may suffer from sarcoptic, psoroptic, and chorioptic mange. Sarcoptic mange is more common in camels and is of zoonotic importance. The present paper deals with successful treatment of mange in a camel.

2. Case History and Observations
An adult male camel (Fig 1) weighing 400 kg reared in a private farm with a history of weakness, restlessness itching, biting and rubbing against objects was brought for treatment. Physical examination findings revealed that the camel had alopecia, erythema, numerous small vesicles, intense pruritis, anorexia, debility. The lesions were scattered throughout the body. Deep skin scrapings until bleeding of skin lesions at periphery were taken and processed with 10% KOH solution and were examined as per routine parasitological procedures (Soulsby, 1982). Blood samples were collected from jugular vein in vacutainers containing EDTA for haemogram.

3. Diagnosis
Sarcoptes scabiei var cameli mites shown in (Fig 2) were identified on the basis of their characteristic morphological features such as circular outline having four pairs of short and stumpy legs. The third and fourth pair of legs do not project beyond the body margins (Georgi, 1985; Nayel and Abu-Samra, 1986; Arora, 2003) The PCV, hemoglobin and RBC were lower than the normal range indicative of anemia (Table 1).

4. Treatment
Based on clinical examination and lab results, the camel was administered with injection ivermectin at the dose rate of 200 µg per kg body weight by subcutaneous route at fortnightly intervals for two months period, along with oral administration Agrimin forte VIRBAC 50 gram P/O, SID, for a month
and vitamin supplementation).

Table 1: Haematological Parameters

<table>
<thead>
<tr>
<th>Haematological Parameters</th>
<th>Units</th>
<th>Result</th>
<th>Normal Range (Weiss and Wardrop, 2010)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCV</td>
<td>%</td>
<td>12.3</td>
<td>15-27</td>
</tr>
<tr>
<td>Hb</td>
<td>g/dL</td>
<td>7.2</td>
<td>7.0-11.0</td>
</tr>
<tr>
<td>RBC</td>
<td>10^3/µL</td>
<td>2.98</td>
<td>3.5-6.1</td>
</tr>
<tr>
<td>WBC</td>
<td>10^3/µL</td>
<td>7.8</td>
<td>16.5-12.85</td>
</tr>
<tr>
<td>MCV</td>
<td>fL</td>
<td>41.1</td>
<td>17.4-62.6</td>
</tr>
<tr>
<td>MCH</td>
<td>pg</td>
<td>24.1</td>
<td>13.4-28.0</td>
</tr>
<tr>
<td>MCHC</td>
<td>g/dL</td>
<td>59.0</td>
<td>29.6-64.7</td>
</tr>
</tbody>
</table>

5. Discussion

Clinical findings such as alopecia, erythema, vesicle formation, pruritis and thickening of skin are in accordance with findings of Fowler (1986) who stated that the burrowing mite caused hyperemia, thickening of skin, loss of vitality of skin, papule and pustule formation, which later became encrusted. The lesions in this case were found scattered throughout the body. This was in accordance with Fowler (2010) who quoted that, the lesions were commonly found on the limbs but in severe cases, the entire body gets affected. Similarly, Wallach and Boever (1983) reported that clinical signs of sarcoptes were pruritis, with associated alopecia and seborrhea especially of the head and neck.

Usage of Ivermectin for treatment of Sarcoptic mange at a dose rate of 200 µg per kg body weight against Scabies in the camel was done based on the reports given by Singh et al. (2001) and Fowler (2010). Oral administration of vitamin and mineral supplements was done based on the report given by Fassi-Fehri (1987) who stated that malnutrition and nutritional deficiency (particularly vitamin A deficiency) favoured development of sarcoptic mange.

Therapeutic effect was observed, which revealed a marked clinical improvement with regard to healing of the skin lesions, improvement of skin texture and appearance. Also, there was improvement in appetite and the animal was relieved from scratching.

6. Conclusion

Sarcoptic mange is most common skin disease associated with alopecia, erythema and intense pruritis signs in camels. Thus deep skin scrapping was taken and processed. It was identified as *Sarcoptes scabiei var. cameli* mite infestation. Ivermectin was used for the treatment of Sarcoptic mange at a dose rate of 200 µg per kg body weight against Scabies and it gave best result against mange infestation in the camel.

References


