Clinical management of demodicosis in Ongole cattle

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Abstract Demodicosis was diagnosed in a cattle based on dermatological lesions and examination of skin scrapings. The cattle had anaemia, leucocytosis, eosinophilia and neutrophilia. Cattle was treated with strepto penicillin, ivermectin, amitraz along with supportive therapy. After 2 months of therapy clinical cure and regrowth of hair was noticed.

Keywords Demodicosis · Dermatitis · Cattle · Ivermectin · Proddatur

Introduction

Demodicosis in cattle is caused by a microscopic mite, *Demodex bovis*. The parasites live in the hair follicles and associated skin glands. The disease is well described and quite common in tropical zones, but rare in temperate regions (Matthes 1994). *Demodex* mites are considered to be host specific and designated after the name of the host they infested (Radostits et al. 2000). Secondary bacterial infection of hair follicles often occurs and rupture of hair follicle wall may lead to presence of free mites in dermis and severe pyogenic infection. Transmission usually occurs by direct contact from the dam to her offspring during

nursing in the neonatal period and never between host animals of different species (Sivajothi et al. 2013). Reports on demodicosis in cattle are scarce in India.

History and diagnosis

A four year old Ongole cattle was presented to the Teaching Veterinary Clinical Complex, College of Veterinary Science, Proddatur with a history of skin lesions associated with anorexia. Initially lesions was developed at the dorsal aspect of the body and extended to the other body parts slowly from the last one month. Small nodules, pustules, hair loss, thickened skin was noticed at neck region. Lesions were noticed at the brisket region, lower neck, fore arm and shoulder region. Pustules were detected by gentle palpation of the skin folds and oozing of the pus was noticed from the pustules (Fig. 1). Rectal temperature, respiration rate and heart rate were normal. Skin scrapings, hair, pus, whole blood, serum and impression smears were collected for laboratory analysis. Processing of samples and examination was done according to the previous studies (Sivajothi and Reddy 2014; Sivajothi et al. 2014).

Treatment and discussion

Microscopic examination of the multiple skin scrapings from the active skin lesions revealed different stages of live *Demodex* mites (Fig. 2). Other mange mites, fungal spores and hyphae were not observed. Cytology of impression smears revealed cocci, cocci engulfed by neutrophils which indicate involvement of secondary bacterial infection. Haematological examination findings were anaemia (RBC $4.95 \times 10^6/\mu\text{L}$, Haemoglobin 7.8 g/dL), packed cell

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Fig. 1 Cattle showing the skin lesions

Fig. 2 *Demodex* mite in the skin scrapings (400×)

volume of 39 %, with leucocyte count of 14,943/ μ L (Neutrophils 38 %, Lymphocytes 54 %, Eosinophils 6 %). Sero biochemical parameters total protein of 7.8 mg/dL, serum albumin of 1.9 mg/dL, globulin of 5.9 mg/dL, AST of 44 IU/L, creatinine of 0.75 mg/dL and BUN of 32 mg/dL were observed. Recorded haemato–biochemical findings in the present study were in accordance with the previous reports of demodicosis affected animals (Reddy et al. 2015). Morphology of the mites was confirmed according to the Soulsby (2006).

Cattle was treated with inj. Ivermectin @ 200 μ g/kg body weight at weekly twice, inj. Strepto penicillin @ 15,000 IU/kg body weight BID I/M for 5 days, inj. Intavita-H @ 5 ml/day at weekly twice. After one week of above therapy, Amitraz rinsing (2 ml in 1 liter of water) was given at 1 week interval. Treatment was continued up to the 2 months period. Skin scrapings were collected every week from the lesions for examination and counting of mite population. After 1 week of therapy lesions became dry and mite population (++++) was reduced. Improvement was seen after 2nd week with complete reduction of

Fig. 3 Cattle free from skin lesions after treatment

live mites. During the 2nd month of therapy new hair began to appear with decrease number in dead mites (Fig. 3). Amitraz rinse was conducted for next week's ever after two consequent skin scrapings failed to reveal live mites in order to avoid possible relapse of the disease (Reddy and Kumari 2010). Localized demodicosis is self limiting and animals own immune system can overcome the infection. Onset of generalized demodicosis can be triggered by drugs or diseases altering the immune response. In the present case previously the cattle was on long term use of corticosteroid therapy for lameness and if might be one of the causes for immune suppression.

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