CHORIOPTIC MANGE IN A GOAT HERD AT VIZIANAGARAM DISTRICT, ANDHRA PRADESH, INDIA

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ABSTRACT

A livestock farmer presented few goats to the Veterinary Clinical Complex, College of Veterinary Science, Garividi with history of alopecia, pruritis, crusts and scabs all over the body. Also reported 18 out of 20 goat kids are showing similar signs in the herd. Skin scrapings revealed mites, that are identified as *Chorioptes* spp. Mild anemia and hypoproteinemia were evident in the affected kids. Ivermectin and topical amitraz along with supportive therapy for five weeks were found to be effective. Regrowth of hair started after 32 days of treatment with good prognosis.

Keywords: Goats, *Chorioptes*, mange, treatment, management

Introduction

Goat rearing is one of the most important economical livestock component suitable for landless and marginal farmers as goats are having adaptability to harsh climates and are of multi-purpose use. Mange is actually a skin infestation caused by mites (ectoparasites) that infests the animal skin to reproduce and is characterised by scab formation, severe itching and loss of hair (Jarmuda *et al*., 2012). It results in economic down turn due to skin damage, blood loss, hypoproteinemia, poor physical condition, decrease milk and meat, decrease in growth rates and general weakness that makes the affected animals more susceptible to other diseases (Al-Ezzy *et al*., 2015).Several species of mites infest goats but the most common ones are the *Demodex caprae* (goat follicle), *Sarcoptes scabiei* (scabies mite), *Psoroptes cuniculi* (psoroptic ear mite) and the *Chorioptes bovis or C. texanus* (Chorioptic mange) (Seid *et al*., 2016). The clinical signs of animals with chorioptic mange include alopecia, pruritus, thickening and wrinkling of the skin with scabs, crust and fissures (Reddy *et al*., 2013).The diagnosis of mange in small ruminants is based on clinical manifestations and the demonstration of mites or their developmental stages in skin scrapings (Agumas *et al*., 2015). Treatment of mange is mostly done using ivermectin at 200 µg/kg at weekly intervals (Marimuthu *et al*., 2015). Many literatures have reported that chemical dipping (0.05% diaznon, 0.1% phoxin, lime sulphur and triclorfon) is the most effective way of treating mange in goats (Bates *et al*., 2005). This case report presents both systemic and topical use of two therapeutic agents to manage chorioptic mange infestation in goats.

Case presentation

Four non descriptive goats of age group 2-3 months of different sex were presented to the Veterinary clinical complex, College of Veterinary Science, Garividi with the history of pruritis, rubbing against the trees and walls, alopecia, crusts and scabs distributed all over the body i.e., head, hindlimbs, ears, thoraco-abdominal region and limbs (Fig.1 & 2). The goats were regularly dewormed and the vitals were in normal range. There is reduction in feed intake and reported poor weight gain. The owner also reported 18 out of 20 goat kids were showing the skin lesions in the herd. Upon clinical examination of the presented kids, revealed generalized alopecia, blackish discoloration of skin at the ears, crusts and scabs all over the body and face. Appearance of lesions first started at the forehead and then spread throughout the body. Lice were also noticed at the neck and hind region. Skin scraping samples were collected at affected sites randomly by visiting the herd from the all 20 kids. The samples were processed and examined under a light microscope at 10x, 40x and 100x magnification. Active mites were identified (Fig. 3) in all the 20 kids. However, out of 20, two kids did not show any prominant clinical signs but were positive for *Chorioptes* spp. Examination of the mite pedicles revealed short pedicles and the presence of cup-shaped suckers on the legs. Based on these findings, a definitive diagnosis of Chorioptic mange was made. Out of 20 goats, hemato-biochemistry of 12 kids revealed mild anemia (Mean of 7.9 ± 0.11 g/dl) and 16 kids had hypoproteinemia (Mean of 5.33 ± 0.23 g/dl).

Treatment

Initial treatment was initiated with four weekly doses of

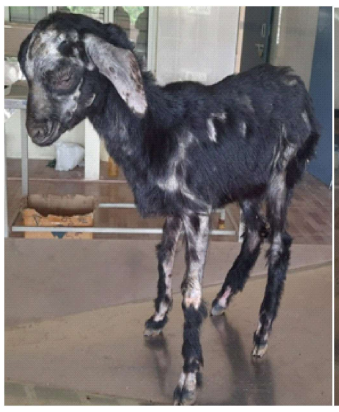

Fig.1: Alopecia, crusts and scabs on head, ears and limbs

Fig. 2: Alopecia all over the body

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Fig. 3: *Chorioptes* mite on direct examination under 10x

ivermectin (200 µg/kg) subcutaneously and topical application as dip with amitraz (0.05%) once weekly for four weeks. Supplementation with Syp. 3D Red® @ 5 ml PO per day per kid and Growel Amino power® @ 5 ml PO per day per kid were administered. However, the skin lesions persisted till second week of treatment in all the kids but the pruritus reduced and further spread wasn't noted. Three weeks post treatment the lesions reduced and on 32nd day, hair regrowth was observed. The skin scrapings were negative in samples after three weeks. The treatment was though continued for two more weeks. Complete resolution of the lesions was noticed on 45th day with a good prognosis.

Discussion

Chorioptes spp. of mites infest cattle, horses, sheep and goats. Two valid species of *Chorioptes* were reported previously viz., *C. bovis* and *C. texanus*. These mites are particularly common in goats with infestations usually subclinical and often asymptomatic (Rambozzi *et al*., 2022). In the present case, many animals had a severe clinical presentation possibly due to the late presentation by the livestock farmer. The lesions in the present study were similar to Jesse *et al*.(2016) who reported generalized skin lesions and lesions on lips, muzzle, ears, around eyes, legs, perineum and scrotum. However, few authors reported localised lesions of Chorioptic mange on tail, foot and ear (Sreedevi and Lakshmi Rani, 2012).Mullen and Durden (2009) cited that the host reactions are induced only when number of mites increase to thousands per host and occasionally cause extensive damages and pruritus.

As the skin lesions of different mange causing parasites are similar, the scrapings can be collected deep around scabs until blood oozes out (Chanie *et al*., 2010). Generally, the presence of mite and skin lesions completes the diagnosis.In the present study, mild anemia and hypoproteinemia were evident which is similarly observed by Chaithanya *et al*. (2021) in goats with Chorioptic mange.However, lice infestation in the present case may also contribute to anemia. Reduction in feed intake might have resulted in hypoproteinemia.

In the present case report, Inj. ivermectin and topical bath with amitraz was given at weekly intervals for four weeks. The weekly intervals were simply to halt the parasite's life cycle by inactivating the viable stages of the parasite on the animal (Lughano and Dominic, 2006); hence, avoiding the growth of the parasite to maturity. Also, *Chorioptes* mite resides in the superficial layer and they do not burrow deep into skin or suck blood, hence mites remain to be less vulnerable to injectable acaricides including their developmental stages (Dharanesha *et al*., 2015). As it is superficial mite, scabs provide a safe haven where they get protection and escape drug therapy. Subsequently they mature into adult and result in more infestation. So, topical treatment is strictly recommended and repeated treatment is required to clear all stages of the mite. Chaithanya *et al*. (2021) also stated that the systemic injection with ivermectin alone is not at all effective in the treatment of Chorioptic mange and the use of topical acaricidal agents along with Inj. Ivermectin was effective. However, Chorioptic mange can be particularly difficult to treat. Some goats are apparently allergic to *Chorioptes* mites, in that signs do not abate until corticosteroids are given. Secondary staphylococcal skin infections may require systemic antibiotics. Hematinic and amino acids supplementation were recommended in the present study to manage anemia and hypoproteinemia. Spraying of the pens with acaricides is one of the management practice to prevent the reoccurrence of the parasitic infestation, which was recommended in the present goat herd.

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