

Severe ectoparasitism and parasitic gastroenteritis in a two month old Sokoto Red kid: a case report

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Abstract

A two month old red Sokoto kid that weighed 3kg from Usmanu Danfodiyo University Farm, Dabagi, was presented to the Veterinary Teaching Hospital, Usmanu Danfodiyo University, Sokoto, with the complaints of debility and recumbency. Physical examination revealed severe infestation with ticks of both sexes identified as *Hyalomma dromedarii*, *Hyalomma rufipes*, *Amblyomma variegatum* and the louse *Linognathus stenopsis*. Examination of the blood suggested anaemia and revealed mild infection with *Anaplasma ovis*. After management for a day, the animal died. At post-mortem, *Haemonchus* spp. and *Oesophagostomum* spp. were found infesting the abomasum and caecum respectively. This paper discusses the implication of the condition to the animal production and how best to control it in established farms like the University farm.

Key words: Ticks, Lice, Infestation, Parasitic Gastroenteritis, Red Sokoto Kid

Introduction

Parasitism is a limiting factor of optimum livestock production in the developing world (Leeftang and Ilemobade, 1977). Ticks and lice in particular, rank among the most important ectoparasites of livestock in Sokoto, the study area (Lawal *et al.*, 2007). These ectoparasites limit goat production as reservoirs of infectious diseases and by virtue of their blood sucking habit cause anaemia and irritation (James-Rugu and Jidayi, 2004). Affected goats scratch and rub their hair coat on rough surfaces leading to matting and damage (Radostits *et al.*, 1995). The gastrointestinal parasites also affect animal health by their blood sucking activity and damage to the gastrointestinal tract which may lead to hypoproteinemia and secondary infections (Sewell and Brocklesby 1992; Radostits *et al.*, 1995). This paper reports a case of severe ectoparasitism and parasitic gastroenteritis in a kid.

Case Report

A two month old red Sokoto kid which weighed 3 kg was presented to the Veterinary Teaching Hospital, Usmanu Danfodiyo University, Sokoto (UDUS) from Dabagi farm UD US, with the complaints of heavy tick and lice infestation and recumbency for two (2) days. The kid was kept with twenty four (24) other animals and managed semi-intensively. The animal had no previous medical history. Physical examination revealed recumbency, heavy infestation with ticks identified as *Hyalomma dromedarii*, *Hyalomma rufipes* and *Amblyomma variegatum*. *Hyalomma rufipes* was found concentrated in all the interdigital spaces of the kid. An average of ten ticks, including at least one engorged parasite was found per interdigital space of the kid. An abscess was observed in the sternal region where an engorged *Amblyomma variegatum* was feeding. Heavy infestation of the kid with the louse *Linognathus stenopsis*, a sucking louse was observed in almost all parts of the body but with higher concentration at the dorsum. The capillary refill time was three (3) seconds. There

was pallor of the ocular mucous membranes, bilateral prescapular lymphadenopathy, tachycardia, rough hair coat and about 8% dehydration. However, the rectal temperature and respiratory rate were within the normal range. Examination of the blood by microscopy revealed mild infection with *Anaplasma ovis*, dehydration, eosinophilia, while the abscess yielded *Staphylococcus* spp. The animal was resuscitated by rehydrating with 350 ml of 5% dextrose administered subcutaneously in two divided doses. The abscess was drained, cleaned and disinfected with Savlon® then Charmil® (Indian herbal preparation by Dabur India Limited) was applied topically. Long acting Oxytetracycline injection was administered at 20 mg/kg against the microbial pathogens in the abscess. Cyper Ceva® (Cypermethrine) pour-on was applied at 1ml/10kg against the ectoparasites. 2 ml of multivitamin injection was also administered intramuscularly. Following the treatment, the animal was able to stand when assisted and fed on small quantities of bran and water. On the second day of presentation, the animal was given 150 ml of 5% dextrose subcutaneously. The kid again fed on small quantities of bran, however it died later in the day. Post-mortem findings revealed presence of ticks and lice on the body, pallor of the visible mucous membranes, hypostatic congestion of the left lung and kidney as well as distension of the urinary and gall bladders with urine and bile respectively. There was hyperemia of the abomasal mucosa and severe infestation of the abomasum with *Haemonchus* spp. The intestines were empty with some few nodules in the caecum containing *Oesophagostomum* spp.

Table 1
Hematological parameters in a
Sokoto Red kid with severe ectoparasitism
and parasitic gastroenteritis

Parameter	Value
Packed Cell Volume (%)	25
Erythrocyte Count ($\times 10^6/\mu\text{L}$)	6
Leucocyte Count ($\times 10^3/\mu\text{L}$)	10
Neutrophils (%)	42
Lymphocytes (%)	44
Monocytes (%)	4
Eosinophils (%)	10
Basophils (%)	0

Discussion

The clinical condition of the kid was obviously caused by parasitic infection. The recumbency observed in the animal may be attributed to the feeding activity of *Hyalomma rufipes* in the interdigital space. Large mouth parts of *Hyalomma*

spp. may cause large feeding lesions and *H. rufipes* is known to cause such lameness in sheep and goats (Beesley, 1973; Sewell and Brocklesby, 1992). The tick induced lameness was however relieved by the removal of the ticks from the interdigital spaces. The *H. rufipes* induced recumbency made it difficult for the animal to feed (Beesley, 1973). On the other hand, the kid lost blood through intestinal hemorrhage due to infection caused by *Haemonchus* spp which is known to suck up to one-fifth of the circulating erythrocytes in lambs per day (Clarke *et al.*, 1962; Georgi and Georgi, 1990). A combination of ectoparasitic infestation and endoparasitic infection was therefore responsible for the anaemia in the animal as indicated by the haematological parameters. The anaemia may have been aggravated by the recumbency induced malnutrition evidenced by empty intestines which did not allow for the replenishment of the lost erythrocytes in the required quantity (Georgi and Georgi, 1990). The mild infection with *Anaplasma ovis* may be a subclinical infection whose source was not certain, but may be from the ticks or by vertical transmission since iatrogenic may be ruled out in this case and these three routes are the ones known for the transmission of *Anaplasma* spp. (Sewell and Brocklesby, 1992). The oesophagostomosis was chronic due to the presence of nodules containing the worms in the caecum (Goldberg, 1952; Georgi and Georgi, 1990). Considering the age of the animal (2 months), it may be suggested that it was infected in the first month of life. The condition was however mild due to the few nodules observed and the absence of clinical signs of the disease. The enlarged gall bladder may be attributed to the lack of secretion of the bile into the intestines when the latter are empty since the former is known to cause emulsification of fats. The hypostatic congestion of the left lung may be attributed to the recumbency which may have interfered with the normal kidney function resulting in urinary stasis. The combined effect of ectoparasitic infestation and endoparasitic infection as well as anaemia and malnutrition must have led to animal's death. Haemonchosis may have been the major cause of the death because the disease is rapidly fatal in combination with malnutrition and anaemia (Georgi and Georgi, 1990).

Conclusion

It is possible that other animals maintained in the farm are exposed to intestinal parasites and ectoparasitic infestation. There is need therefore, to carry out tick survey on the farm and also to have routine worm and tick control programme with particular emphasis on care of the newborn animals. This is in order to reduce both mortality and morbidity of the kids which causes economic losses to the farmer (Majiyagbe and Lamorde, 1977).

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