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Clinical Article

CLINICAL COCCIDIOSIS IN AN ADULT DROMEDARY CAMEL

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SUMMARY

Coccidiosis is caused by protozoan parasite belongs to the genus *Eimeria* which parasitizes the epithelium lining of the alimentary tract. An 8 years old male camel was reported with an anamnesis of anorexia and severe diarrhoea since few weeks. It was diagnosed as clinical coccidiosis caused by *Eimeria cameli* infection based on clinical signs and parasitological findings. The animal was treated with potentiated sulphonamide for five days. One week later, the camel was recovered clinically and faecal sample was found negative for *Eimeria* species oocyst.

Keywords: Camel, Coccidiosis, *Eimeria cameli*, Treatment

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Domesticated old world camel (*Camelus dromedaries*) is an important for the economy of several countries including India. Coccidiosis is considered to be one of the major constraints to livestock industry. This disease occurs mainly in young animals but can also affect older animals that are in poor condition (Sudhakara Reddy *et al.*, 2015). Coccidiosis caused by *Eimeria* spp. are gut-dwelling intracellular protozoan parasites, transmitted by faecal-oral route. Although, five different *Eimeria* spp. were named from camels, *E. cameli* is considered to be the most pathogenic. *E. cameli* infection is clinically characterised by diarrhoea, weakness, dehydration and weight loss (Dubey *et al.*, 2018; Sazmand *et al.*, 2012). The prevalence of coccidiosis in different species of animals have been documented from different parts of India (Sudhakara Reddy *et al.*, 2015). But, the clinical information regarding the reports of coccidiosis in adult camel seems to be very little. Present communication is the report on the occurrence of coccidiosis in adult camel and its treatment.

Aneight years old dromedary camel was presented to Veterinary Clinical Complex, C.V.Sc. & A.H., Kamdhenu University, Sardarkrushinagar (Gujarat) with a history of inappetence and severe diarrhoea. On clinical examination, the findings were congested mucous membrane, rough body coat, poor body condition, smelly diarrhoeic faeces and presence of ticks in the perineal region (Fig. 1a, b, c, d). Temperature, heart rate and respiratory rate were found to be in normal range. Complete blood count (2 ml whole blood in k3 EDTA vial) revealed higher values of haemoglobin, total erythrocytic count (TEC), Haematocrit concentration (HCT), Mean corpuscular haemoglobin (MCH), Mean corpuscular haemoglobin concentration (MCHC) and neutrophil whereas decreased mean corpuscular volume (MCV), Platelet, Total leukocyte count (TLC), Lymphocyte. The values of monocyte, eosinophil and basophil level were remained unchanged (Table 1), while, microscopic examination was negative for any haemoparasite. Parasitological investigation processed by sugar floatation and sedimentation revealed numerous oocysts of *Eimeria cameli*. Oocyst of *Eimeria cameli* was identified (Fig. 2) on the basis of large pear shape, dark brown oocyst wall consisting thin outer and thick outer wall. Also, the micropyle displayed no polar granules nor oocystic residual bodies and it had no polar cap (Dubey and Schuster, 2018: Dubey *et al.*, 2018). Based on history, clinical observation and laboratory investigation, it was confirmed as a clinical case of coccidiosis. The treatment was initiated by sulphadiazine and trimethorprim (®Biotrim bolus)at the dose rate of 1 bolus/100 kg B.W. for 5 days with supportive (mention Rx) and fluid therapy. After 5 days of post treatment, the animal was able to regain its strength and start taking food. No oocyst was detected in faeces. Followup was taken till one month post treatment. Haematological attributes also improved when compared to pre-treatment level.

The gastrointestinal parasites are important in camels because they not only reduce productivity and performance but also predispose camels to other diseases. *Eimeria cameli*, is considered to beone of the most important gastro-intestinal parasite responsible for morbidity and mortality in camels (Nour, 2022). In camelids with uncomplicated coccidiosis, lethargy, diarrhoea, abdominal distention, anorexia, weight loss, constipation, and colic have all been documented (Costarella and Anderson, 1999; Cebra *et al.*, 2007; Johnson *et al.*, 2009). Recently, Nour (2022) reported the diarrhoea as predominant clinical sign in camel infected with coccidian protozoa which is similar with our clinical

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Fig. 1. Affected camel showing (a) congested mucous membrane (b) Emaciation (c) diarrhoea along with ticks in perineal regions (d) Poor body condition

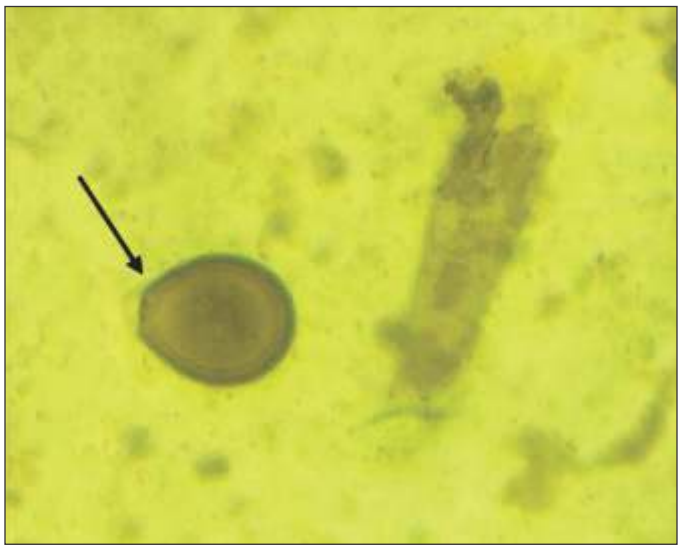

Fig. 2. Oocyst of *Eimeria cameli* with sporont (400x Magnification)

Table 1. Haematological parameter of camels infected with coccidiosis

Parameters	Before treatment	After treatment
TEC ($x10^6/\mu L$)	7.49	6.78
HCT (%)	26.9	20.7
Hb (gm/dL)	15.3	12.04
MCV (fL)	35.9	45
MCH (pg)	20.4	18
MCHC (g/dL)	56.7	37
Platelet ($x10^3/\mu L$)	305	376
TLC ($x10^3/\mu L$)	10.5	9.05
Neutrophils (%)	67	56
Lymphocytes (%)	24	35
Monocytes (%)	1	1
Eosinophils (%)	7	7
Basophil	1	1

findings. In contrary to present finding, Enigk (1934) stated that camels infected with *Eimeria cameli* did not exhibit any clinical symptoms. Desta (2019) reported 69.9% prevalence of camel coccidiosis by using the flotation and sedimentation technique to identify the coccidian oocystin camel faeces. Haematological attributes such as Hb, HCT, RBC, MCH, MCHC and neutrophil were found to be elevated which was contrasting to the results found by Yagoub and abdellah (2015) with experimental coccidiosis. This may be due to the severe dehydration, emaciation occurred by the infection. In this clinical study, we had treated the camel with potentiated sulphonamide which was in accordance with the result of Reddy *et al.* (2015). Hence, it can be concluded that potentiated sulphonamide are useful for the treatment of clinical cases of camel coccidiosis. The control of this disease is entirely dependent on prophylactic chemotherapy, use of coccidiostats and good management practices.

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