

Case Report

**CONCURRENT INFECTION OF COCCIDIA AND *E. COLI* IN A VERY
YOUNG BUFFALOE CALF- A CASE REPORT**

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Abstract: A female buffaloe calf of less than 30 days old presented with severe greenish diarrhoea was investigated. *Eimeria sp* could be demonstrated from the faecal sample of the clinical case and *E. coli* was the enteric pathogen concurrently isolated from the faeces. Successful recovery was noticed by treatment with potentiated sulphonamides and quinolones.

Keywords: Buffaloe calf, diarrhoea, *E. bovis*, *E.coli*, sulphonamides.

INTRODUCTION

Parasitism is one of the major problems responsible for enormous economic losses in terms of calf mortality in dairy herd (Rana *et al.*, 2011). Coccidiosis, caused by protozoa *E. bovis* and *E. zuernii*, results in serious health and economic problems to different species of livestock leading to reduction in feed consumption, body weight, and feed conversion with a mortality up to 24% in some cases. In buffalo calves, coccidiosis causes severe diarrhea, dysentery, dehydration, unthriftiness, anorexia, weakness and recumbency (Ahmed and Soad, 2007), increased susceptibility to other diseases (Rahmeto Abebe *et al.*, 2008) and neurological signs in few cases (Teankum *et al.*, 2003). Though all age groups are commonly affected, clinical coccidiosis is generally common in young animals of less than one year because of their low immune competence (Yatoo *et al.*, 2013) and incidence in calves of less than a month old is uncommon. The annual loss due to bovine coccidiosis is estimated to be more than one hundred million dollars and severe losses generally occur during the periods of extremely cold weather (Niranjan Kumar and Samanta, 2015). Hence, this paper aims at the description of a very young buffaloe calf of less than 30 days old affected with concurrent *Eimeria* and *E.coli* and its successful treatment.

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MATERIALS AND METHODS

A 25 days old female buffalo calf was presented at Veterinary Clinical Complex, Veterinary College and Research Institute, Namakkal of Tamilnadu in India during November month with the manifestations like foul smelling greenish diarrhoea, anorexia, weakness and depression, and the case had a history of deworming with piperazine adipate. On clinical examination, heart rate of 58/minute, respiration rate 27/minute, rectal temperature 39.7°C and congested conjunctival mucous membrane were recorded. No abnormalities were detected in the rumen liquor collected. Animal was mildly dehydrated and recumbent. About 30 g fresh faecal sample was collected per rectum from the calf using sterile plastic gloves and the sample was transported in a clean plastic container to the laboratory and stored at 4°C for examination on the same day of collection. Faecal swabs were collected aseptically for isolation of the enteric pathogens *E.coli* and *Salmonella*.

RESULTS AND DISCUSSION

Oocysts identified were allowed to sporulate and separated by the flotation technique using saturated NaCl solution (Anonymous, 1986). Microscopic examination of the sample revealed typical sporulated oocysts of *Eimeria bovis* with four sporocysts, each containing two sporozoites. No other parasitic eggs could be demonstrated in the faecal sample. The faecal sample was streaked on MacConkey agar and incubated at 37°C for 24 hrs. Pink coloured colonies were sub cultured on eosine methylene blue agar (EMB) and characteristic bluish green colonies with metallic sheen indicative of *Escherichia coli* could be observed (Edwards and Ewing, 1972). No colonial growth characteristic of *Salmonella* could be observed when streaked on brilliant green agar (BGA).

In this study, coccidiosis was found to occur in one month old young calf as Singh *et al.* (2008) also reported an infection of *Eimeria sp.* in neonatal buffalo calves (0-3 months). However, a highest intensity of oocysts output was recorded in calves of 6 months by Faber *et al.* (2002). *E.coli* was the enteric bacteria that could be isolated as a secondary pathogen complicating coccidiosis as Ernst *et al.* (1987) also stated that coccidia had been indicated as an important cause of diarrhoea in calves in associations with other enteropathogens.

The case responded positively to the treatment with sulphamethaxazole and trimethoprim combined with enrofloxacin intravenously for five days, as sulfonamides are generally recommended in the treatment of coccidiosis (Niranjan Kumar and Samanta, 2015). Supportive therapy included analgin as an anti inflammatory and antipyretic, dextrose normal

saline and Ringer's lactate intravenously along with multivitamin preparation (Vitamin A, D3, E and H) to promote cell mediated immunity.

Inadequate feeding of colostrum, exposure to contaminated environment, underfeeding and poor sanitation are some predisposing factors for higher occurrence of coccidiosis in calves. Clinical coccidiosis cause mortality in calves if untreated and thereby economic losses to cattle producers. Coccidial infections can be better managed by a combination of preventive and treatment measures. Further epidemiological investigation on economic significance, prevalence of mixed infections with different species in different agroclimatic seasons in all age groups of cattle would help in better understanding of the patterns of disease.

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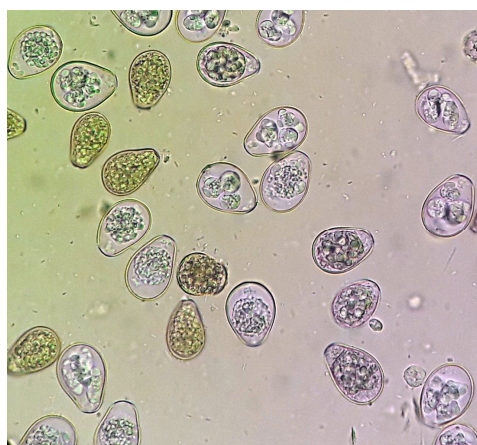


Fig. 1: Unsporulated oocysts of pathogenic coccidia, *Eimeria bovis* (10x) from the faeces of the diarrhoeic calf.