

Acute Fulminating Form of *Balantidium coli* Infection in Buffaloes

Sivajothi S* and Sudhakara B Reddy

College of Veterinary Science, Sri Venkateswara Veterinary University, Proddatur, Andhra Pradesh, India

Case Report

Received date: 22/02/2018

Accepted date: 10/03/2018

Published date: 17/03/2018

*For Correspondence

Sivajothi S, College of Veterinary Science, Sri Venkateswara Veterinary University, Proddatur, Andhra Pradesh, India, Tel: 086860 78663.

E-mail: sivajothi579@gmail.com

Keywords: Dysentery, *Balantidium coli*, Buffaloes, Oxytetracycline, Metronidazole

ABSTRACT

Balantidium coli are a ciliate protozoan and it is frequently found in the intestinal tract of the different animals including humans. Acute fulminating form of *Balantidium coli* infection was noticed in a dairy farm. Clinical examination of the infected buffaloes showed elevated rectal temperature, increased heart rate, congested mucus membranes, arched back appearance with severe straining while defecation, sunken eye balls and dysentery. Foul smell dung, mixed with blood streaks and mucosal shedding was noticed. Microscopic examination of the dung revealed numerous motile ciliated trophozoites of *Balantidium coli*. Buffaloes were treated with intravenous rehydration, metronidazole and oxytetracycline.

INTRODUCTION

Buffaloes had an important role in the improvement of the farmer's economy in rural areas. Protozoan diseases have great economic importance in ruminants and other animals. Among the protozoan diseases balantidiasis caused by *Balantidium coli*, is a common disease and it was present throughout the world with a wide variety of hosts, including man, various domestic and wild mammals. *Balantidium coli* naturally inhabitants of the caecum, colon and rectum of apparently healthy animals, but under certain circumstances it produces clinical disease ^[1]. It causes diarrhea or dysentery and produces ulcerative lesions in the large intestine ^[2]. The literature on acute fulminating form of balantidiosis in buffaloes was rarely reported. The present communication puts record on acute fulminating form of *Balantidium coli* infection in buffaloes in a dairy farm ^[3].

CASE PRESENTATION

Seven buffaloes in a dairy farm were presented to the ambulatory clinic of College of Veterinary Science, Proddatur with history of sudden onset of dysentery. Upon Clinical examination they were dull, depressed, tachycardia (>92 beats/min) with high intensity heart sounds, tachypnoea (>32/min), elevated rectal temperature (>103 °F) and mucous membranes were hyperemic with sunken eye balls. Physical examination of rumen revealed moderate rumen motility. Dung was foul smell, mixed with blood streaks and mucosal shedding was noticed (**Figure 1**). Dung sample was collected from the rectum and examined for the parasitic ova. Direct smear examination of the dung sample revealed a large number of *Balantidium coli* cysts and trophozoites (**Figures 2 and 3**).



Figure 1. Dung containing blood and sloughed intestinal mucosa.

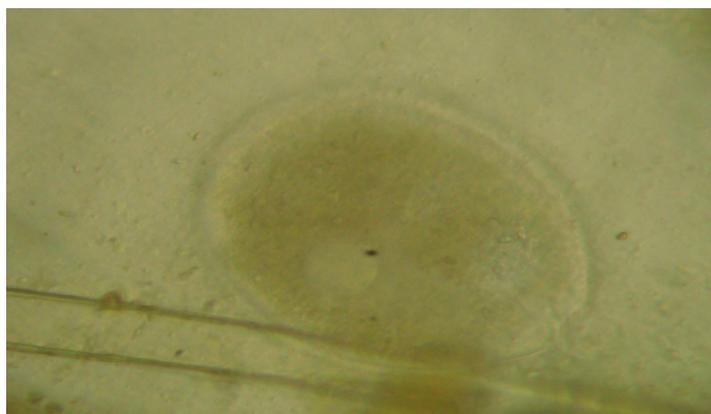


Figure 2. *Balantidium coli* cysts (400X).

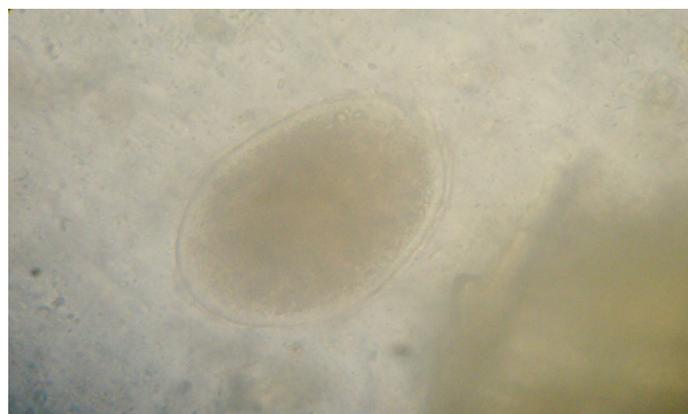


Figure 3. *Balantidium coli* trophozoites (400X).

DISCUSSION

Based on the results of laboratory findings, buffaloes were diagnosed as suffering with acute fulminating form of *Balantidium coli* infection. Buffaloes treated with injections oxytetracycline @ 20 mg/kg body weight, intravenously, twice in a day for three days; injection ketoprofen @ 1.1 mg/kg body weight intramuscularly once in a day for two days; injection metronidazole @ 20 mg/kg body weight intravenously twice in a day for seven days. Fluids were administered (5% dextrose normal saline and ringers lactate) @ 20 ml mg/kg body weight intravenously for the first three days. Supportive therapy was given with oral boli containing *Saccharomyces* and *Lactobacillus* twice in a day^[4,5].

By the third day of therapy, improvement was observed in the passing of the dung and its consistency. On the 5th day of the treatment, dung was free from the parasitic cysts and dysentery was subsided. After completion of seven days of therapy animals were recovered by improving the feed intake, free from dysentery with normal dung consistency. Out of seven buffaloes five were recovered from the disease.

Balantidiosis occurs through ingestion of contaminated food or water with cysts. During the course of infection, it can be chronic or acute form. Chronic form is most common and characterized by diarrhea alternating with constipation. Acute form causes perforation of colon, liver abscess and severe mucosal shedding of large intestine. In the present study, demonstration of the parasitic cysts and response to the therapy confirmed the *Balantidium coli* infection as acute form [6].

Balantidium coli organisms produce the hyaluronidase enzyme, which enhances the ability of the pathogens to invade into the intestinal mucosa, further leads to the severe enteritis. Because of the sudden development of the enteritis, passing of persistent fetid diarrhea, dehydration, severe loss in the body condition noticed. Transmission of the *B. coli* reported by the faecal - oral route from the normal host, where it is asymptomatic to the other animals including humans [7]. In the present study, the acute form of disease showed severe necrosis and sloughing of intestine in two cases and these two buffaloes were died on the third day in spite of treatment. Similar type of clinical signs was noticed in the clinical coccidiosis in adult cattle which can be differential diagnosis in adult ruminants with bloody diarrhea [8]. It was reported that a combination of tetracycline hydrochloride and metronidazole plus furazolidone showed 100% elimination of *B. coli* cysts or trophozoites by the 3rd day of therapy in buffalo calves. Combination of secnidazole and oxytetracycline also reported to be higher efficacy than the metronidazole in some studies [4,5].

In buffaloes, protozoan diseases cause loss of productivity in terms of mortality, reduced milk, and immune suppression. For effective treatment, identification of the type of protozoa causing infection is essential. Several reports are there on *B. coli* infection in buffaloes and cattle [6,9]. But, information on acute form of *Balantidium coli* infection was rare and reported here.

CONCLUSION

Acute form of *Balantidium coli* infection can usually be diagnosed based on specific features of dung and confirmation by the microscopic examination of the parasitic cysts and trophozoites in the dung. Chronic form or sub clinical form of infection is common in ruminants but, acute form is rare. Balantidiasis was successfully treated with metronidazole along with oxytetracycline and improvement in the condition depends on the severity of infection.

ACKNOWLEDGEMENT

The authors are thankful to the authorities of Sri Venkateswara Veterinary University, Tirupati for providing the facilities to carry out the work.

REFERENCES

1. Sivajothi S, et al. Cryptosporidiosis in neonatal dairy calves. *Adv Appl Sci Res.* 2014;5:74-76.
2. Thompson RCA and Smith A. Zoonotic enteric protozoa. *Vet Parasitology.* 2011;182:70-78.
3. Bilal CQ, et al. Prevalence and chemotherapy of *Balantidium coli* in cattle in the River Ravi region, Lahore (Pakistan). *Vet Parasitology.* 2009;163:15-17.
4. Sengar YS and Singh V. Comparative therapeutic efficacy of Tetracycline HCl and Metronidazole plus Furazolidone against *B. coli* infection in buffalo calves. *J Vet Parasitology.* 2006;20:89-91.
5. Tarrar MA, et al. Detection and chemotherapy of *Balantidium coli* in buffaloes around Lahore, Pakistan. *Pakistan J Agr Sci.* 2008;45:163-166.
6. Garcia LS. *Balantidium coli*. In: Khan NA (Ed): *Emerging Protozoan Pathogens.* Taylor and Francis, New York. 2008;353-366.
7. Schuster FL and Ramirez AL. Current world status of *Balantidium coli*. *Clin Microbiol Rev.* 2008;21:626-638.
8. Reddy BS et al. Clinical coccidiosis in adult cattle. *J Parasit Dis.* 2015;39:557-559.
9. Randhawa S, et al. Chronic cattle diarrhea due to *Balantidium coli* infection-a clinical report. *J Vet Parasitology.* 2010;24:197-198.