***Toxocara vitulorum* in a suckling calf: a case study**

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Abstract The present clinical case reports toxocariosis in a suckling calf and its management. One and a half month old crossbred Jersey calf was presented at a Veterinary Clinics, District Pulwama, Kashmir with a history of intermittent diarrhea, poor growth, weakness, moderate dehydration and anorexia. On inspection, the calf showed normal physiological parameters viz; body temperature, pulse rate and respiration rate. On faecal examination, eggs of *Toxocara vitulorum* were found. The animal was treated with 30 ml suspension of 1.5 % fenbendazole + 0.5 % praziquantel orally. After examination of faecal samples on 7th and 14th day post treatment no *T. vitulorum* eggs were observed.

Keywords Calf · Fenbendazole · Kashmir · Praziquantel · *Toxocara vitulorum*

Introduction

Calf ascariasis due to *Toxocara vitulorum* is considered to be a major limiting factor in organized farms, due to high morbidity, mortality, loss of production and ineffective implementation of breeding programmes (Chowdhury 2002). *T. vitulorum* is among the most destructive parasites of calves, the larvae of which undergo migration causing great damage to many organs, especially the liver and the intestine. It is responsible for up to 50 % mortality in cattle and buffalo calves (Srivastava and Sharma 1981) and is mainly transmitted through transplacental and transmammary transmission, causing the disease characterized by severe anemia, diarrhoea, weight loss and anorexia, particularly in buffalo calves between 1 and 3 months of age (Wickramasinghe et al. 2009). Radiostits et al. (2000) recognized this disease in calves as the top most cause of morbidity and mortality. Toxocarosis can be diagnosed on the basis of clinical signs, necropsy findings, faecal examination for eggs and serological tests. The present communication reports *T. vitulorum* in a crossbred Jersey calf and its successful treatment with 30 ml suspension of 1.5 % fenbendazole + 0.5 % praziquantel orally.

Materials and methods

One and a half month old crossbred Jersey calf was presented at a Veterinary Clinics, District Pulwama, Kashmir with a history of intermittent diarrhea, poor growth, weakness, moderate dehydration and anorexia. The calf was examined for physiological parameters viz; body temperature, pulse rate and respiration rate.

A small amount of faecal sample was directly collected from the rectum of the calf and was examined physically

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Fig. 1 *Toxocara vitulorum* egg ($\times 40$) in the calf faeces

for any abnormality. Slides were prepared for the microscopic examination of faeces by following standard protocols of centrifugal sedimentation and flotation methods (Soulsby 1982) for any parasitic infection. The calf was administered 30 ml suspension of 1.5 % fenbendazole + 0.5 % praziquantel orally after the infection was confirmed and faecal samples were collected on 7th and 14th day post treatment for examination of *T. vitulorum* eggs.

Results and discussion

The calf showed normal physiological parameters viz; body temperature, pulse rate and respiration rate. The colour of the faeces was muddy, the consistency was semi-solid with blood streaks and the odour of the sample was characteristically evil. Faecal examination by sedimentation and floatation methods revealed *T. vitulorum* eggs (Fig. 1) in the calf. The incidence of *Toxocara* infection in calves has been reported by many workers (Kanyari et al. 1995; Holland et al. 2000; Rao et al. 2000; Sardar et al. 2006; Chavhan et al. 2008; Kaur and Kaur 2008; Wymann et al. 2008; Samal et al. 2011). After the administration of 30 ml suspension of 1.5 % fenbendazole + 0.5 % praziquantel orally, samples revealed no eggs on examination at 7th and 14th day post treatment. These results showed that the calf was apparently cured of the infestation with *T. vitulorum*. Therefore, oral administration of 30 ml suspension of 1.5 % fenbendazole + 0.5 % praziquantel showed 100 % efficacy against *Toxocara* infection. Fenbendazole acts by disrupting energy metabolism in worms by binding to parasite tubulin, a constituent protein present in microtubules and in plasma and mitochondrial membranes whereas praziquantel modulates cell membrane

permeability causing spastic paralysis of muscle cells in the parasite (Taylor et al. 2007). The efficacy of fenbendazole against *T. vitulorum* infection in calves has already been reported by various workers (Stuedemann et al. 1989; Davila et al. 2010). Hafiz et al. (2010) has reported 85.41 % efficacy of fenbendazole against *T. vitulorum* in calves from Srinagar city of Kashmir Valley.

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