

was administered intravenously for 5 days. The condition of the colt slightly improved by sixth week of treatment.

Low serum calcium directly stimulated hypersecretion of PTH to maintain calcium homeostasis (Walthall and McKenzie, 1976; David *et al.*, 1997). In the present case, the horse was fed with wheat bran daily. Bran is very high in phosphorus and low in calcium (David *et al.*, 1997). Phytates in bran inhibited the intestinal absorption of calcium during the process of digestion. Feeding a diet mainly consisting of wheat bran led to the development of nutritional secondary hyperparathyroidism in this horse (David *et al.*, *loc. cit.*).

Intermittent shifting lameness was noticed in the present case and was in accordance with Little *et al.* (2000). Generally facial bones such as maxilla and mandibular trabecular bone were affected, become soft and swollen similar findings were noticed.

The animal was successfully treated with calcium supplements and its symptoms showed improvement in clinical signs during the course of the treatment.

Summary

A case of Osteodystrophia fibrosa in a colt is placed as record.

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Concurrent Clinical Coccidiosis and Subclinical Babesiosis in an Adult Cattle

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Abstract

A three years old Jersey cross bred cow was presented with the signs of lymphadenopathy and catarrhal diarrhoea. Examination of faecal and peripheral blood smears revealed *Eimeria* spp. and *Babesia bigemina*. Haemato-biochemical analysis revealed alterations in the serum biochemical values. The case was successfully treated with sulphadimidine and diminazene aceturate with supportive therapy.

Key words: *Eimeria* spp., *Babesia bigemina*, Sulphadimidine, Diminazeneaceturate, Haemato-biochemical analysis

Clinical coccidiosis occurs rarely in adult cattle, which primarily act as asymptomatic

carriers and is caused by *Eimeria bovis* and *E. zuernii* resulting in haemorrhagic diarrhoea and anaemia (Alemayehu *et al.*, 2013). Babesiosis is highly pathogenic resulting in icterus, haemolytic anaemia and haemoglobinuria (Constable *et al.*, 2017). This paper reports clinical coccidiosis in an adult jersey crossbred cow with concurrent subclinical babesiosis.

Materials and Methods

A three year old Jersey cross bred cow in 5 months of gestation was brought to the Veterinary Clinical Complex, Veterinary College and Research Institute, Tirunelveli with the history of anorexia, diarrhoea for two days. Clinical examination revealed pink conjunctival and vaginal mucous membrane, enlargement of

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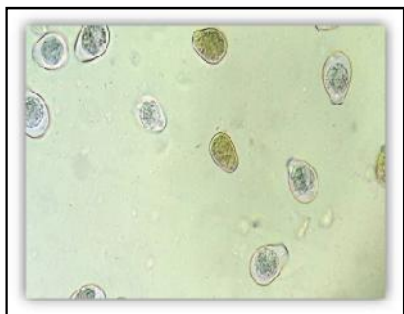


Fig 1. Unsporulated oocysts of *Eimeria* spp. from the faecal sample (40X)

prescapular lymphnode, moderately sunken eyeballs, tachycardia and catarrhal diarrhoea with long and thick mucus shreds and offensive odour. Faecal and peripheral blood smear examinations were performed to identify helminthic and haemoprotozoan infections, respectively. Isolation of pathogenic bacteria from diarrhoeic faeces on selective media was carried out for identification (Carter and Wise, 2004). Whole blood and serum samples were collected for haemato-biochemical analysis.

Results and Discussion

Microscopic examination of the faecal sample revealed unsporulated oocysts of *Eimeria* spp. (+++) (Fig 1) and Giemsa stained peripheral blood smears revealed merozoites of *B. bigemina* (++) in pairs (Fig 2). In this case, severe coccidiosis was observed possibly because of lowered resistance caused by intercurrent disease or inclement weather (Constable *et al.*, *loc cit*). Intercurrent subclinical infection by *Babesia* in this case could be associated with predisposition by coccidiosis possibly leading to impaired neutrophil function or pregnancy as a stress factor (Constable *et al.*, *loc cit*). However, diarrhoea in this case could also be complicated by *Babesia* *sp.*, since diarrhoea is reported to occur as one of the signs in babesiosis (Gashaw Enbiyal *et al.*, 2018). No growth of colonies of pathogenic bacteria on MacConkey and brilliant green agar ruled out the possibility of bacterial enteritis. Haematological examination revealed anisocytosis and poikilocytosis with haematological values in normal range. Serum biochemical analysis showed elevated levels of blood urea nitrogen (53.4 mg/dl) which could be due to nephrosis in babesiosis (Gungi *et al.*, 2016) and hyperglycemia (111.0mg/dl). Hypoalbuminemia (2.9 gm/dl), hypocalcaemia (8.4 mg/dl),

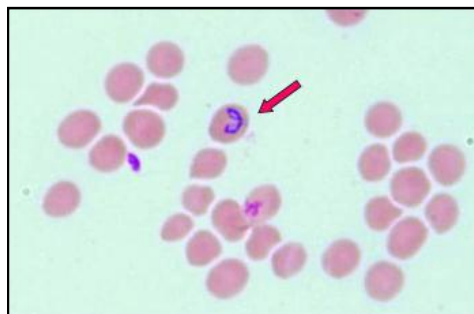


Fig 2. Merozoites of *B. bigemina* (arrow marked) within red blood cells in Giemsa stained blood smear (100X)

hypophosphatemia (5.1 mg/dl), hyponatremia (111.8 mmol/lit) and hypokalemia (2.28 mmol/lit) might be associated with severe diarrhoea interfering in absorption of nutrients from the intestine. Hepatic enzymes were within normal range (AST-66 iu/ dl, ALT-10 iu/ dl and ALP- 81 iu/ dl). The case was treated for coccidiosis with sulphadimidine @ 140mg/kg BW, I/V (Constable *et al.*, *loc cit*) and metronidazole @10mg/kg BWI/M, along with intravenous fluids and oral probiotics for 5 days; for babesiosis with diminazine aceturate @ 3.5 mg/kg BW, deep I/M, as single dose (Taylor *et al.*, 2007). Faecal examination five days post treatment and peripheral blood smear examination seven days post treatment revealed no coccidia and haemoprotozoa, respectively.

Summary

Concurrent clinical coccidiosis and subclinical babesiosis in an adult cattle and its diagnosis and medical management is put on record.

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