A CASE REPORT OF *Babesia gibsoni* IN A PUP AND ITS MANAGEMENT

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ABSTRACT

Babesiosis is a tick-borne disease affecting humans and many domestic and wild animals. Canine babesiosis is a disease caused by protozoal parasites including large *Babesia* species and small *Babesia* species, the latter includes *Babesia gibsoni.* A four month old male Rottweiler pup presented with clinical signs of pyrexia, weakness, papery white mucous membrane, was diagnosed with *Babesia gibsoni* upon microscopic examination of Giemsa-stained peripheral blood smears with supportive clinical and haematological examination. The pup was successfully treated with combination therapy which includes metronidazole, doxycycline and clindamycin.

Keywords: *Babesia gibsoni,* metronidazole, doxycycline and clindamycin.

INTRODUCTION

Canine babesiosis is a tick-borne disease caused by protozoal parasites including large Babesia species such as *Babesia canis, B. vogeli, B. rossi,* and small Babesia species, namely *Babesia gibsoni, B. conradae,* and *B. microti* -like species. Infection with B. gibsoni is known to cause more severe clinical signs than infection with large *Babesia spp*. and may result in multiple organ dysfunction syndrome. Members of the genus Babesia readily parasitize the red blood cells of dogs, causing progressive anaemia. The smaller parasite, *B. gibsoni* occurs principally in the Middle East, southern Asia, Japan, North Africa, South America. *B. gibsoni* is transmi tted by ticks Haemaphysalis bispinosa and Haemaphysalis longicornis.

CASE HISTORY AND OBSERVATION

A four month old male Rottweiler pup was brought to the University Veterinary hospital, Kokkalai with history of off-feed, occasional vomiting, lethargy and passing light brown coloured urine since four days. On clinical examination the animal was dehydrated with sunken eyeballs, rectal temperature of 103.6 ^{0}F, papery white conjunctival mucus membrane of the eye and slight lymphnode enlargement. On abdominal palpation splenomegaly could be noted. Based on the clinical symptoms and observations the animal was suspected for haemoprotozoan infestation. Thin peripheral blood smear was prepared. The blood sample was collected in a sterilized glass vials with and without EDTA for estimation of haematological and biochemical parameters like RBC, Hb, PCV, total WBC and BUN, creatinine, respectively. The observed values of RBC, Hb, PCV, total WBC, neutrophils, lymphocytes, eosinophils, platelets , BUN and creatinine, were 1.20 x 10^{6}/ µL, 3.0 g/dL, 8.9%, 9700 /µL, 59%, 40%, 1%, 56000 /µL, 9mg/dl and 0.60mg/dl respectively. Based on the clinical symptoms, and observation the animal was suspected for haemoprotozoan infestation. Upon

microscopic examination of Giemsa-stained blood smears signet ring shaped merozoites of the parasite were confirmed as *Babesia gibsoni*.

TREATMENT & DISCUSSIONS

The animal was treated with Inj.Metronidazole@ 20 mg/kg body wt, Inj. Clindamycin @ 11mg/kg intravenously and tablets Doxycycline @ 10 mg/kg per os for 7 days. Other supportive therapy included Inj.Imferon 0.25ml i/m, Inj. Aneudox 0.5ml i/m, oral haematinic preparation and glucose. The owner was advised to continue the medicines Metronidazole @20 mg/kg, Clindamycin @ 11mg/kg, Doxycycline @ 10 mg/kg orally for fourteen days. Rapid improvement was shown by the animal within two days of treatment. After one week, peripheral blood smear was examined and, the number of RBCs infected with protozoan parasite was very less.

The case was diagnosed as babesiosis based on the clinical signs and demonstration of parasites within the RBCs. Diagnosis of canine babesiosis is generally made from blood smear examination, which is still considered the best test (Kraje 2001). Clinical and pathological findings including anemia, lethargy, anorexia, lymphadenopathy, marked splenomegaly, and thrombocytopenia were observed in this case which is in accordance with previous studies (Taboada *et al.,* 1992 and Trotta *et al.,* 2009). The thrombocytopenia found in animals infected with *B. gibsoni* may be due to immune-mediated destruction of platelets, scattered intravascular coagulation, or aggregation and sequestration of platelets in the spleen (Wozinak *et al.,* 1997). Neutropenia observed in this case were correlated with the observations by Meinkoth *et al.,* (2002). The anemia caused by *B.gibsoni* is due to destruction of erythrocytes, resulting from a combination of the direct mechanical disruption caused by the parasite as it leaves the red blood cell, along with intravascular hemolysis, which may be immune-mediated or non-immune-mediated (Farwell *et al.,* 1982; Onishi *et al.,* 1990). The treatment used in this case was very effective against *B. gibsoni*. Similar observation was also made by (Farwell *et al.,* 1982) who found metronidazole, clindamycin, and doxycycline effective in the treatment of babesiosis.

SUMMARY

The present case was *B. gibsoni* infestation in a pup and the confirmation of diagnosis was based on peripheral blood smear examination. The haematological values observed also supported the diagnosis. The infected animal could be successfully treated with metronidazole, clindamycin, doxycycline and supportive treatment.

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