

Successful management of Babesiosis in a Dog – A Case Report

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Abstract

A three-year-old intact male Labrador Retriever was presented to the Small Animal Clinic, Veterinary College Hospital, Bengaluru, with a history of pyrexia, anorexia, lethargy, and ascites. Clinical examination revealed pale mucous membranes, fever, generalized lymphadenopathy, and mild halitosis. Haematobiochemical analysis revealed anaemia, thrombocytopenia, neutrophilic leucocytosis, lymphocytopenia, hypoproteinaemia and elevated creatinine and ALT values. Peripheral blood smear examination revealed piroplasm-like structures, later confirmed as *Babesia gibsoni* by polymerase chain reaction (PCR). Abdominal ultrasonography demonstrated moderate hepatomegaly, ascites, and splenomegaly. The dog was successfully treated with a triple therapy regimen consisting of doxycycline, clindamycin, and metronidazole. Supportive care included protein supplements, antacids, haematinics, hepatoprotectants, antioxidants, and B-complex vitamins.

Keywords: Babesiosis, Haemolytic Anaemia, labrador

Introduction

Canine babesiosis is a significant tick-borne haemoprotozoan disease commonly seen in tropical and subtropical regions due to high tick density. It is caused by intraerythrocytic protozoa of the genus *Babesia*, most notably *Babesia gibsoni* and *Babesia canis*. Severe infections may result in disseminated intravascular coagulation (DIC), renal dysfunction, and shock (Schoeman *et al.*, 2007; Zygnier *et al.*, 2015). A case of babesiosis in a dog and its successful management is placed on record.

Case History and Observations

A three-year-old intact male Labrador Retriever was presented to the Small Animal Clinic, Veterinary College Hospital, Bengaluru, with a history of anorexia, fever, lethargy, abdominal distension, and

decreased urination. Clinical evaluation revealed pale mucous membranes (Fig 1.1), pyrexia, generalized lymphadenopathy, halitosis, fine crackles on thoracic auscultation, and tachycardia. Haematobiochemical findings indicated moderate anaemia, thrombocytopenia, neutrophilic leukocytosis, lymphocytopenia, and hypoproteinaemia (Table 1.1). Peripheral blood smear revealed piroplasm-like organisms (Fig1.2) and spherocytes (Fig 1.3) confirmed as *Babesia gibsoni* by PCR. A positive saline agglutination test corroborated by a Coombs test, indicated immune-mediated haemolysis. Coagulation testing revealed prolonged PT (23.6s) and aPTT (36s). The electrocardiogram revealed a tall and narrow QRS complex with ST slurring and absence of consistent P waves (Fig 1.4). Abdominal ultrasonography showed moderate hepatomegaly and splenomegaly (Fig 1.5).



Fig. 1.1: Pale conjunctival mucous membrane



Fig 1.2: Piroplasm of *Babesia gibsoni*

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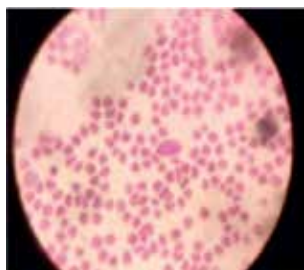


Fig 1.3: Spherocytes indicating oxidative stress



Fig 1.4: Atrial Fibrillation

Table 1.1: Haemato-biochemical parameters of the patient before and after therapy

Parameter	Day 0	Day 7	Day 21	Reference range
RBC count (millions per mm ³)	2.84	3.67	4.84	5-7.9
Haemoglobin (g/dl)	7.2	8.4	10.84	12-19
WBC count (cells/mm ³)	23600	14500	13200	5000-14100
Platelet count (lakhs/mm ³)	1,21,000	2,45,000	4,46,000	2,10,000-6,20,000
Neutrophils (%)	85	60	71	58-85
Lymphocytes (%)	18	22	25	32-36.3
Monocytes (%)	2	3	4	0-5
Total protein (g/dl)	4.1	4.9	6.1	5.4-7.5
Albumin (g/dl)	2.2	2.2	2.8	2.3-3.1
Globulin (g/dl)	2.0	2.7	3.3	2.4-4.4
BUN (mg/dl)	56	48	18	8-28
Creatinine (mg/dl)	3.87	2.65	1.47	0.5-1.7
ALT (IU/L)	187	102	89	10-109
ALP (IU/L)	212	158	89	15-156
TBIL (mg/dL)	1.1	0.89	0.6	0 – 0.3

#Reference range: Kahn, C.M. (2010). The Merck Veterinary Manual, (10th edn.). Merck & Co., USA

Treatment and Discussion

Doxycycline (5mg/kg BID IV), Clindamycin (20 mg/kg BID IV) & Metronidazole (15 mg/kg bid IV) were used. Haematinics, oral prednisolone (2mg/kg/day P.O.) oral antacid (Gelusil 5mL P.O. bid), Pantoprazole (1mg/kg IV OD), acetyl cysteine (50mg/kg IV) and crystalline intravenous amino acids were used (Hermin @ 1mL/kg IV) were administered. Fluid therapy with crystalloid LRS, DNS, with furosemide (1 mg/kg IV) was also administered. The aforementioned intravenous triple-drug therapy was administered continuously for three days. On the fourth day, the dog exhibited

notable improvement in appetite, and oral hydration was initiated. The triple-drug therapy was continued orally for 21 days, along with haematinics and other supportive supplements. Hematobiochemical evaluations were performed on days 0, 7, 14, and 21 to monitor clinical improvement. According to Glaharn *et al.* (2018), complications associated with babesiosis—including DIC, acute kidney injury, hepatic dysfunction, cardiac anomalies, cerebral involvement, and acute respiratory distress syndrome—arise from both parasitic and host immune responses. Zygnier *et al.* (2023) reported that

anaemia in canine babesiosis is largely driven by host immune responses rather than direct parasitic damage.

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