

## Case Report

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# Babesiosis in a German Sheperd dog and its successful treatment

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### Abstract

A five year old male German shepherd presented with the history of persistent fever, depression and anorexia revealed pale mucus membranes, enlarged poplital lymph node, and splenomegaly on clinical examination. This case was diagnosed as babesiosis on peripheral blood smear examination. Haemato-biochemical estimation revealed anemia, leukocytosis, neutrophilia, hyperbilirubinemia and elevated ALT levels. Therapy was initiated with single shot of diaminazene aceturate @ 3.5 mg/kg body weight intramuscularly, injection Oxytetracycline @ 10 mg/kg body intramuscularly, intravenous injection of DNS 100 ml and intramuscular injection of toxol@ 2 ml. Liver supplements, haematonics were also given and Cypermethrin shampoo was advised for bathing. The dog recovered successfully after therapy for 3 days.

## Introduction

Babesiosis is a serious tick-borne protozoal disease which destroys red blood cells and the severity of illness can range from a relatively mild to a fatal disease. It is characterized by few or all of the clinical signs like fever, anaemia, lethargy, presence of ticks, lymphadenopathy, thrombocytopenia, blood in the urine and jaundice (Cicco and Birkenheuer 2012). Hematologic, immune, and lymphatic systems are most commonly affected, but the nervous and urinary systems may also be involved. It spreads mainly by tick-bites to dogs, blood transfusion from infected donor and also transplacentally. Various species of ticks such as *Rhipicephalus sanguineus*, *Dermacentor* spp. and *Haemaphysalis* can transmit *B.canis* of dogs, whereas *B. gibsoni* is transmitted by *Haemaphysalis bispinosa* and *Haemaphysalis longicornis* (Filipe, 2006).

## Case history and Observations

A five year old male German shepherd was presented to veterinary dispensary with a history of persistent fever, weakness, depression, dark yellow urine (fig.1) and anorexia

since 7 days. Clinical examination revealed pale conjunctival mucus membranes (fig. 3), fever (104.5<sup>0</sup> F), enlarged poplital lymph node, splenomegaly and tick infestation. History of vaccination and deworming was regular. Faecal sample examination did not reveal any ova of parasitic importance. Blood sample was collected for haematological and serum biochemical estimation.

The diagnosis of babesiosis was made on the basis of clinical signs and identification of the parasitized erythrocytes in a Giemsa stained peripheral blood smear. Haematology revealed reduced values of haemoglobin (7.2 gm%) and PCV (24%). Leukocytosis (19,900/cumm) and neutrophilia (76%) were also observed. Urinalysis revealed bilirubinuria and proteinuria. Serum biochemistry revealed elevated values of bilirubin (15.86 mg/dL), ALT (92 U/L) and normal values of total protein (5.3 g/dL).

## Treatment and Discussion

Therapy was initiated with a single shot of Diminazene aceturate (Berenil) @ 3.5 mg/kg intramuscularly, injection

oxytetracycline @ 10 mg/kg body weight, intravenous injection of Dextrose Normal Saline 100 ml and intramuscular injection of toxol (B complex) 2 ml intramuscularly. Along with the above treatment, Liv- 52 @ 10 ml BID and Dexorange syrup @ 10ml SID were advised to be given. Cypermethrin shampoo was advised for the control of ticks. By 2<sup>nd</sup> day temperature was reduced and slight improvement in food intake was noticed. However, same treatment was done except for Berenil for 2 more days. There was marked improvement in conjunctival mucus membrane (Fig. 4) and colour of urine became normal (Fig. 2). Temperature became completely normal and peripheral blood smear was negative for babesial organisms by 4<sup>th</sup> day. Diminazene aceturate is an aromatic diamidine derivative and its dose calculation should be meticulous due to its low therapeutic index, especially in puppies and the drug should not be repeated within an interval of shorter than a 3- week period (Miller et al. 2005). The symptoms observed in the present study like lethargy, haemolytic anaemia, lymphadenopathy and splenomegaly were in correlation with the findings of Conrad et al. (1991). The clinical signs are the result of tissue hypoxia following the anaemia and a concomitant systemic inflammatory response syndrome caused by marked cytokine release (Lobetti 2006). Hemolytic anemia causes immune-mediated destruction (intra- and extravascular), direct parasitic injury, and subsequent oxidative stress (Cicco and Birkenheuer 2012). Schoeman (2009) also reported bilirubinuria and proteinuria as observed in the present case. Similar, serum hyperbilirubinemia and elevated liver enzymes were also reported by Cicco and Birkenheuer (2012). Vector control is the primary means of preventing infection. Use of topical acaricides and environmental control minimizes transmission of tickborne infections Cicco and Birkenheuer (2012).



Fig 1. Dark yellow colour urine on the day of presentation



Fig 2. Normal colour of urine after therapy



Fig 3. Pale conjunctival mucus membranes on the day of presentation

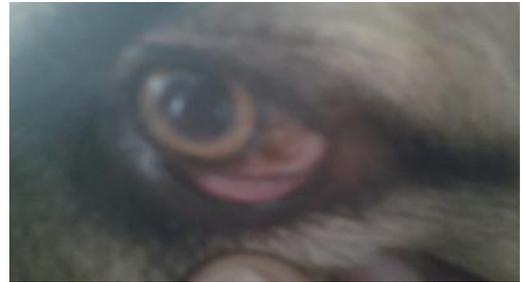


Fig 4. Improvement of conjunctival mucus membranes after 4 days of therapy

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