

TRYPANOSOMIASIS IN NON - DESCRIPT DOG: A CASE REPORT

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Introduction

Trypanosomes are extra-erythrocytic, protozoan parasites of domestic and wild animals. This disease is generally acute and fatal in canines (Soulsby, 1982). It is characterized by fever, anemia, myocarditis, hemorrhages on the mucosal and serosal surfaces and less commonly corneal opacity (Urquhart *et al.* 2002). It is generally spread by biting tabanid flies (Barr *et al.* 1991; Urquhart *et al.* 2002). Trypomastigote constantly changes its surface glycoprotein hence, there is persistent parasitemia and hence the parasites continue to multiply sub clinically and spread to other parts of the body primarily through macrophages (Urquhart *et al.* 2002; Barr *et al.* 2002). Anemia is an important feature of this disease, in which red blood cells are lysed and removed by the phagocytic cells (Urquhart *et al.* 2002). This paper reports the occurrence of trypanosomiasis in a dog and its effect on some blood parameters.

Case History

A non-descript male dog of 12 years age was brought to Teaching Veterinary Clinical Complex (TVCC), Mumbai with the history of inappetance and respiratory distress. On clinical examination, there was tachycardia, anaemia, edematous swelling on hind legs, pale mucous membranes and normal temperature (102°F). Physical examination by abdominal palpation revealed splenomegaly and hepatomegaly. Electrocardiograph (ECG) was carried out. Blood was collected for CBC (Complete blood count) and serum for biochemical analysis for liver function and kidney function test (Coles, 1986).

Result and Discussion

Confirmation of trypanosomiasis was done on the basis of finding numerous trypanosomes in blood smear by staining with Leishman stain (Fig.1). Clinical sign such as inappetance, fever anaemia and pale mucous membranes, etc.

observed in the present investigation has also been reported by various authors in canine trypanosomiasis (Rashid *et al.*, 2008; Rani and Suresh, 2007; Singh, 2012). Some authors have reported corneal opacity in chronic trypanosomiasis (Thirunavukkarasu *et al.* 2004), however, we did not observe corneal opacity. The total trypanosomes were 160 per hundred red blood cells in direct blood smear. Furthermore, their effect on certain hematological parameters was studied. The haematological (CBC) finding revealed 3.8, 12, and 2.1 of Hb, PCV, and TEC, respectively. Anaemia was characterized microcytic hypochromic type. The erythrocyte sedimentation rate was increased (51mm/hr). Total leucocyte count revealed leucocytosis (30.5 thousand/ cumm), and differential leucocyte count neutrophilia (74%) with shift to left. The lymphocytes (17%), monocytes (05%), eosinophils (04) were within normal physiological range. Platelet count was decreased (0.2 lakhs/cu mm) and as well as on DLC smears. The mechanism involved in the pathogenesis involves excretion of toxic substances and metabolites, utilization of host nutrients and immunologically mediated lysis of red blood cells resulting in to anaemia (Singh, 2012), and sometimes death in unattended and per acute cases. Decrease in Hb, PCV and TEC values observed in the present investigation are in accordance with the previous observation recorded by various authors (Rashid *et al.*, 2008; Rani and Suresh, 2007). Increased ESR observed in the present investigation may be due to anaemia (Coles, 1986).

Biochemical analysis of liver function test revealed increased serum levels of SGPT (194 IU/ L), SGOT (179.6 IU/ L) indicating lever damage. The endotoxins are set free by lysis of RBCs due to parasite and these toxin causes dysfunction of liver (Singh, 2012). The present observation is in accordance with the observation of Singh, (2012). Serum Urea, BUN

and creatinine was 125.6 (mg/dl), 58.69 (mg/dl) and 1.67 (mg/dl), respectively. KFT analysis indicate elevated level of Urea and BUN however, creatinine level were within normal

level. This could be because of toxemia causing hepatic dysfunction. The urea utilization may be hampered and lead to elevated level of urea and BUN in blood. The transmission

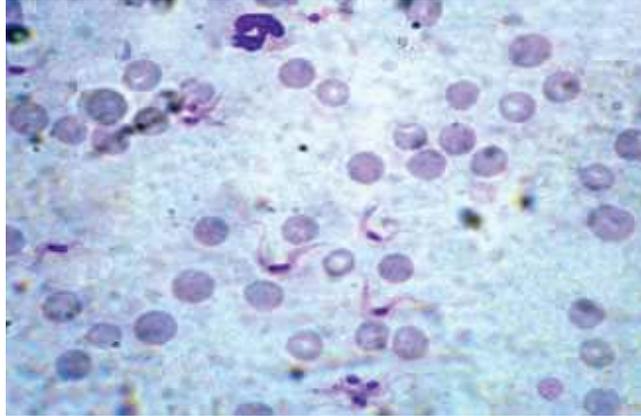


Fig. 1: Blood smear showing trypanosomes (Leishman stain, 400X)

of trypanosomiasis to dog in the present case is unknown, however, mechanical transmission through hematophagous flies (*Tabanus spp.*, *Stomoxys spp.*, *Haematopota spp.*, *Hippobosca spp.*, etc.) has been suggested (Singh, 2012). ECG finding did not reveal any significant abnormality.

The dog was treated with single dose of triquin at the rate of 5 mg/kg body weight subcutaneously along with iron dextran injection, antihistaminic, for one week.

Summary

Trypanosomiasis infection was diagnosed in a 12 years old non-descript dog. Haematological and biochemical parameters and therapeutic management of trypanosomiasis in dog was discussed.

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