

# OCCURRENCE OF GASTROENTERITIS WITH CONCURRENT INFECTION OF HEPATOZOONOSIS IN DOG

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## Introduction

Gastroenteritis is a syndrome, characterised by inappetance, vomition, dehydration, bloody diarrhoea and death in unattended cases (Shastri, 1983). The disease may occur in animals of all ages but is much more common in young age (Anonymous, 2008). Hepatozoonosis is a protozoan disease

caused by *Hepatozoon canis* in dogs and is usually occur as an asymptomatic to mild disease infecting 1 to 5 per cent of the circulating leucocytes (Baneth and Weigler, 1997; Baneth *et al.*, 2003). Present paper put on record the occurrence of gastroenteritis along with concurrent infection of *H. canis* infection in Pomeranian dog.

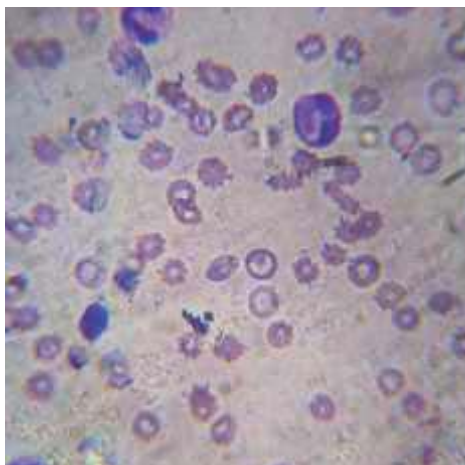


Fig. 01: Leishman stained blood smear showing gamonts in leucocyte

## Materials and Methods

A five year old Pomeranian female dog was presented to Teaching Veterinary Clinical Complex (TVCC), Bombay Veterinary College (BVC), Goregaon, Mumbai for treatment. Laboratory investigation *viz.* serum biochemical analysis for kidney function test (urea, BUN-blood urea nitrogen and creatinine) and liver function test (SGOT and SGPT) was done at TVCC, BVC, Mumbai using Automatic analyser. The blood in ethylene di-amine tetra acetic acid (EDTA) was collected to know the status of dehydration. The blood parameters *viz.* haemoglobin (Hb), packed cell volume (PCV), total erythrocyte count (TEC), erythrocyte sedimentation rate (ESR), total leucocyte count (TLC), and differential leucocyte count (DLC) was carried out using Haemo-autoanalyser at Department of Pathology, BVC, Mumbai. Detailed history

taken from owner revealed that dog was having ticks before three month back. Moreover, examination of skin at the time of admission did not revealed any tick on the body.

## Result and Discussion:

Clinically, dog showed inappetance, dehydration, vomition, and bloody diarrhoea. On the basis of physical and clinical examination dog, the case was diagnosed as gastroenteritis. The clinical signs *viz.* vomition, dehydration and bloody diarrhoea have been reported in gastroenteritis (Anonymous, 2008; Shastri, 1983). The liver enzymes such as SGOT (25.67 IU/L) and SGPT (50.59 IU/L) and kidney function test parameters such as Urea (18.26 mg/dl), BUN (8.53 mg/dl) and creatinine (0.80 mg/dl) were within normal physiological range.

CBC finding revealed marginal decrease in haemoglobin (22.0 gm %), where as packed cell volume (54%) and total erythrocyte count ( $7.85 \times 10^6$  / cu. mm) were marginally elevated. Erythrocytic indices revealed hemoconcentration (Anonymous, 2008; Shastry, 1983). The erythrocyte sedimentation rate (ESR) was decreased (2 mm/hr). Decreased ESR has been suggested in haemoconcentration (Benjamin, 2001). TLC analysis revealed normal leucocyte count ( $6.20 \times 10^3$  / cu. mm). Differential leucocytes count revealed relative neutrophilia (79%) and lymphopenia (L-12%) The other leucocytes were within normal range (M-07%; E-02%, B-00). The Leishman's stained blood smear revealed cigar shaped, pale-staining cytoplasmic bodies (gamonts) in the neutrophils (Fig. 1). These bodies were identified as gametocytes of *H. canis* based on their morphological characteristics (Soulsby, 1982). The parasitemia of leucocytes was 2 per cent. In the present investigation, the parasitemia due to *H. canis* is low (2%). Baneth and Weigler, (1997) and Baneth *et al.*, (2003) are of the opinion that hepatozoonosis in dogs usually occur as an asymptomatic to mild disease, and is associated with a low level of *H. canis* infects 1 to 5 per cent of the circulating leucocytes. Moreover, Ingole *et al.* (2011) reported 7.25 and 2 per cent parasitemia in two cases of *H. canis* infection, respectively. Rajamanickan *et al.* (1985) recorded 1-5 per cent parasitemia in canine hepatozoonosis. The ticks were present on the body of dog three month back and hence could not be identified in the present case. Platelets count was 1.22 lakh/ cu. mm and were reduced on smear. Thrombocytopenia in canine hepatozoonosis has been reported (Ingole *et al.*, 2011). The dog was treated with Metranidazol orally (7-10 ml@ kg b. wt), DNS (150 ml, I/V) and ampicillin-cloxacillin combination drug (@ 10 mg/ kg b. wt.) for three days. Clindamycin @10 mg/ kg b. wt. (I/M, twice daily for 14 days was suggested for treatment of *H. canis*

infection (Ingole *et al.*, 2011) after complete recovery from diarrhoea.

### Conclusion

A case of gastroenteritis with concurrent infection of *H. canis* infection was diagnosed in Pomeranian dog on the basis of clinical signs and finding cigar shaped, pale-staining cytoplasmic bodies (gamonts) in the neutrophils of Leishman stained blood smear. Its detail clinical pathology with its therapeutic management is discussed.

### References

- Anonymous. (2008). Merck Veterinary Manual. Uremia.
- Benjamin, M. M. (2001). Outline of Veterinary Clinical Pathology. Pp. 64-68.
- Baneth, G., Mathew, J. S., Shkap, V., Macintire, D. K., Barta, J. R., Ewing, S. A., (2003).
- Canine hepatozoonosis: Two disease syndrome -s caused by separate Hepatozoon species. *Trends Parasitol.*, **19**(1):27-31.
- Baneth, G., Weigler, B. (1997). Retrospective case control study of hepatozoonosis in dogs in Israel. *J. Vet. Intern Med.*, **11**:365-370.
- Ingole, K. H., Sawale, G. K., Rohi, R. R., Suryavanshi, P. R., Sabale, S.S., Bharkad G.P. and Vishwasrao S.V.(2011). Clinico-pathology and Therapeutic Management of Hepatozoonosis in Dogs: Case Study. *J. Vet. Parasitol.*, **25**(2): 159-161.
- Rajamanickam, C. Wiesenutter, E.,Zin,F.M.D. and Hamid, J. (1985). The incidence of canine haematozoa in Peninsular Malaysia. *Vet. Parasitol.*, **17** : 151-157.
- Sastry, G.A. (1983): Veterinary Pathology, 6<sup>th</sup> Edn. CBS Publisher and Distributor Delhi. Pp. 380-382.
- Soulsby, E. J. L. (1982). *Hepatozoon canis*. In: Helminths, Arthropodapods and Protozoa of domestic animals. 7<sup>th</sup> Ed. ELBS and Bailliere Tindall. London. Pp.689-690.

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