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A Rare Case Study on Feline Mycoplasmosis

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Abstract This paper discusses the case report on Mycoplasma infection in cat and its timely diagnosis by blood smear examination and haematology. It also discusses the treatment and response of the cat for the disease. Haemobartonellosis in cats is caused by *Mycoplasma haemofelis*, formerly known as *Haemobartonella felis*. An eight months old Persian cat was received in the Small Animal Clinics, Out Patient Ward, Medicine department, Madras Veterinary College with the history to suspect for feline Mycoplasmosis. Peripheral blood smear and whole blood sample was collected and subjected to blood smear examination and whole blood for routine haematological study. It revealed codocytosis, anisocytosis and hypochromasia. Few ghost cells also were seen. Nearly 80–85% of the RBCs revealed darkly stained small organism at the rim or periphery of the cells.

Keywords *Haemobartonella; Feline Mycoplasma; Feline Anemia; Cat Anemia*

1. Introduction

Haemobartonellosis is a disease of cats caused by *Mycoplasma haemofelis,* formerly called as *Haemobartonella felis*. *M. haemominutum*, also causes infection in cats but less likely to cause disease. These mycoplasma infections are not caused by typical bacteria, but by a group of microorganisms called mycoplasma. Since, *M. haemofelis and M. haemominutum* are blood (hemo)-associated (tropic), they termed as "hemotropic mycoplasmas" or "hemoplasmas" (Small and Ristic, 1967).

The disease transmits through infected fleas and ticks by feeding on infected animal to the non-infected animals. Thereby, mycoplasmas are passed on in the environment. Moreover, they live in the blood cells; they could be spread via a blood transfusion from an infected animal to a non-infected one. Vertical transmission from the queen (mother cat) to her kittens also the possible route of

transmission. They may also even spread through cat bites - male cats, cats that roam. Cats less than 4-6 years of age appear to be at high risk of becoming infected (Small and Ristic, 1971).

2. Materials and Methods

An eight months old Persian cat was received in the Small Animal Clinics, Out Patient Ward, Medicine department, Madras Veterinary College with the history of depression, loss of appetite, dehydration, pale conjunctival mucous membrane, weight loss, fast heart and respiratory rates and treated locally for a week. Peripheral blood smear subjected to blood smear examination as per the methodology of Houwen (2000). 2 ml of whole blood sample was collected in a vacutainer with EDTA as anticoagulant and is subjected for routine haematological study using Mindray BC Vet 2800, automated haematology analyser. Differential counts were calculated manually.

3. Results and Discussion

On blood smear examination, it revealed codocytosis, anisocytosis and hypochromasia. Few ghost cells also were seen. Nearly 80-85% of the RBCs revealed darkly stained small organism at the rim or periphery of the cells suggestive of feline mycoplasma caused by *Mycoplasma haemofelis* (Figure 1). Some of the RBCs revealed multiple organisms. On whole blood analysis haematological value of 4.2g/dL haemoglobin, 13% PCV, 2.1 m/Cmm total RBC, 7200/Cmm total WBC and 280000 total thrombocyte counts were noticed. The differential counts of 72% neutrophils, 22% lymphocytes, 3% each of monocytes and eosinophils were seen. Red blood cells are destroyed by the cat's own immune reactions to the parasites (Bobade et al., 1988).

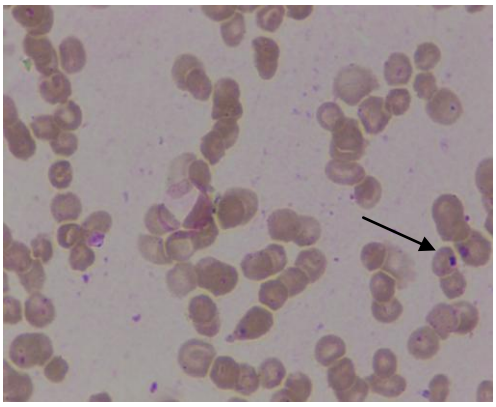

Figure 1: *Stained Blood Smear Showing Mycoplasma Organism in the Periphery of the Red Blood Cells (1000 X)*

Hence, the cat was treated for the disease with Doxycycline @ 5-10 mg/kg bwt and Vitamin B12 @ 50mg SID for a week and kept under observation (Novotny, 2012). After day 3 of the treatment the cat has improved and animal was found to be active and start taking feed. A number of diseases and toxic agents interfere with the production of red blood cells in the bone marrow. Infection with *Mycoplasma haemofelis* (formerly called *Hemobartonella felis*) is more common in cats. This blood parasite is primarily transmitted to cats through tick and flea bites, and also by vertical transmission. Hence the owner was advised to isolate the animal to prevent its mingling with other cats.

Mycoplasma haemofelis may also work in concert with feline leukemia virus to stimulate bone marrow cancers (Grindem et al., 1990). Cats with this type of infectious anemia are often weak and may have fever. Some cats practice pica by eating dirt or their litter in an attempt to add minerals to their diet. If left untreated, up to 30 percent of affected cats may die.

4. Conclusion

The present paper discussed the case study on mycoplasma infection in cat and its timely diagnosis by blood smear examination and haematology. It also discussed the treatment and response of the cat for the disease. In future molecular diagnosis using PCR with specific primers to *Mycoplasma haemofelis* can be more accurate and early for diagnosis of this disease.

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