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Presumptive feline hemotropic mycoplasmosis in a domestic cat with anemia, thrombocytopenia, and epistaxis

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ABSTRACT: Feline hemotropic mycoplasmosis is a significant vector-borne disease in cats, causing anaemia and systemic illness. A 3-year-old male domestic cat (3.9 kg) showed decreased appetite, respiratory signs, and epistaxis. Despite complete vaccination, ectoparasite and anthelmintic control were inconsistent. Examination revealed a body condition score of 3/5, 7% dehydration, pale mucous membranes, prolonged capillary refill, hyperthermia (40 °C), and flea infestation. Haematology revealed leukopenia, lymphopenia, granulocytopenia, thrombocytopenia, and normocytic normochromic anaemia. The FPV test was negative. Blood smears showed organisms consistent with hemotropic Mycoplasma spp. The cat was diagnosed with presumptive feline hemotropic mycoplasmosis. Treatment included doxycycline (10 mg/kg PO q24h), tranexamic acid (0.1 mL/kg IM), aminophylline (20 mg/kg PO), Ornipural (5 mL for 5 days), and supportive therapy with vitamin B complex and iron. After 17 days of hospitalisation, the cat's appetite, activity, and haematological parameters improved significantly.

Keywords:
feline hemotropic mycoplasmosis, hemoplasma, anemia, thrombocytopenia, domestic cat, peripheral blood smear

■ INTRODUCTION

Vector-borne diseases (VBDs) are arthropod-transmitted infections that remain a major cause of global morbidity and mortality, particularly in tropical and subtropical regions, where vector exposure is highly prevalent (Díaz-Regañón *et al*. 2018). Among feline VBDs, feline hemotropic mycoplasmosis is of particular clinical importance. This disease is caused by hemotropic *Mycoplasma* spp., which parasitise the surface of erythrocytes and are recognised as among the most pathogenic hemotropic bacterial infections in cats. In affected animals, untreated infection may progress to severe haemolytic anaemia and can ultimately be fatal (Tasker *et al*. 2018). The clinical presentation is often variable and is largely influenced by the host immune response, with commonly reported signs including pale mucous membranes, pyrexia, lethargy, anorexia, tachycardia, cardiac murmurs, weight loss, hepatomegaly, splenomegaly, lymphadenomegaly, and different degrees of haemolytic anaemia (Strandberg *et al*. 2023). Despite the recognised susceptibility of cats to this infection, clinically documented cases of feline hemotropic mycoplasmosis—particularly those accompanied by haemolytic anaemia —remain relatively limited in the literature. Consequently, additional well-documented clinical reports are needed to broaden the current understanding of disease presentation and to support improvements in diagnostic and therapeutic approaches.

■ CASE

Signalment and anamnesis: A 3-year-old male cat (3.9 kg) was presented with decreased appetite, flu-like signs, and epistaxis. Previous tests revealed thrombocytopenia. Vaccination was complete; however, ectoparasite control and deworming were inconsistent. **Physical examination**: Pyrexia (40°C), respiratory rate of 32 breaths/min, heart rate of 120 beats/min, prolonged capillary refill time (>2 s), decreased skin turgor (>2 s), body condition score of 3/5, and pale mucous membranes. **Laboratory examinations**: Haematological evaluation revealed leukopenia, lymphopenia, granulocytopenia, thrombocytopenia, and normocytic normochromic anaemia. FPV test was negative. Diff-Quik staining revealed hemotropic mycoplasma-like organisms on erythrocytes. **Differential diagnoses**: feline panleukopenia, ehrlichiosis/anaplasmosis, FeLV- or FIV-associated haematologic disorders, immune-mediated haemolytic anaemia, coagulopathy, and other infectious or inflammatory anaemia causes. **Diagnosis**: Presumptive feline haemotropic mycoplasmosis. **Prognosis**: Favorable (fausta). **Treatment**: Doxycycline (10 mg/kg PO q24 h), tranexamic acid (0.1 mL/kg IM), aminophylline (20 mg/kg PO), ornipural (5 mL once daily for 5 days), and supportive care.

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Table 1. Hematological findings in a 3-year-old male domestic cat.

Parameters	Results	Normal range (Schalm *et al*. 2010)
White Blood Cells (×10³/µL)	**2.5**	5.5–19.5
Lymphocyte (%)	17.0	12–45
Granulocyte (%)	78.5	35–85
Monocyte (%)	4.5	2–9
Lymphocyte (×10³/µL)	**0.4**	0.8–7.0
Granulocyte (×10³/µL)	**2.0**	2.1–15.0
Monocyte (×10³/µL)	0.1	0.0–1.9
Red Blood Cell (×10⁶/µL)	4.9	4.6–10.0
Hemoglobin (g/dL)	**7.1**	9.3–15.3
Hematocrit (%)	**23.4**	28–49
MCV (fL)	48.0	39–52
MCH (pg)	14.5	13–21
MCHC (g/dL)	30.3	30–38
RDW-CV (%)	**26.1**	14–18
RDW-SD (fL)	41.1	20–80
Platelet (×10³/µL)	**49.0**	100–514

Note: MCV= Mean Corpuscular Volume; MCH= Mean Corpuscular Hemoglobin; MCHC= Mean Corpuscular Hemoglobin Concentration; RDW-CV= Red Cell Distribution Width – Coefficient of Variation; RDW-SD= ed Cell Distribution Width - Standard Deviation; Bold red number= high value; Bold blue number= low value.

■ RESULTS AND DISCUSSION

This report describes a 3-year-old cat with presumptive feline hemotropic mycoplasmosis, likely due to Mycoplasma haemofelis, associated with severe anaemia. Haematological abnormalities included leukopenia, lymphopenia, and granulocytopenia, suggesting a parasitic or bacterial infection (Table 1). Decreased erythrocyte count, haemoglobin, and haematocrit levels indicated anaemia (Amelia et al. 2019). Although microcytic hypochromic anaemia is often linked to iron and copper deficiencies (Weiss & Wardrop 2011), cytological and clinical findings supported this profile. The feline panleukopenia virus (FPV) rapid test was negative (Figure 1), making FPV-associated cytopenia unlikely. Blood smear evaluation showed bacterial organisms resembling Mycoplasma haemofelis attached to erythrocytes.

Definitive confirmation was not achieved as the diagnosis relied on blood smears and rapid testing, both with limited sensitivity. Thus, polymerase chain reaction (PCR), especially quantitative PCR (qPCR), is the gold standard for confirming feline hemotropic mycoplasma infection (Martínez-Díaz *et al*. 2013). Treatment focused on doxycycline as antimicrobial therapy, effective at oral doses of 5–10 mg/kg once daily (Purba *et al*. 2020; Satriawan & Octaviani 2021). Symptomatic therapy included tranexamic acid to minimise haemorrhage and aminophylline for bronchoconstriction. Ornipural was used as a hepatoprotective agent. Additional care included vitamin B complex, vitamin C, Sangobion, Neurobion, Hepaq, and Fu Fang (1 mL/day). Preventive management addressed vector-related infection through sanitation and ectoparasite control using Advocate with imidacloprid and moxidectin (Maslakah & Kusumarini 2023). Clinical and haematological improvements were noted, with values normalising by day 15, and the cat was discharged healthy on day 17.

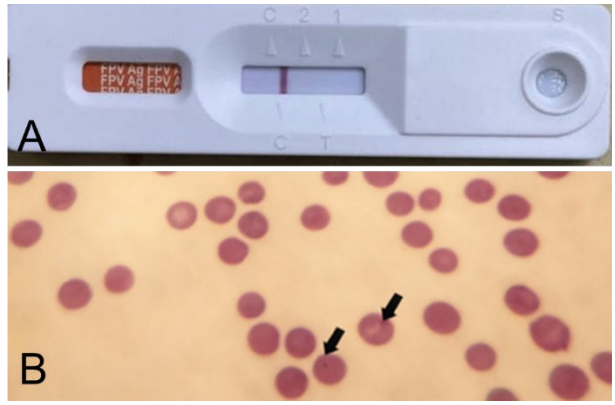

Figure 1. Laboratory findings in a 3-year-old male cat with presumptive feline hemotropic mycoplasmosis. (A) FPV rapid test result. (B) Diff-Quik-stained blood smear showing Mycoplasma-like organisms on erythrocytes (1000×).

■ CONCLUSION

Early recognition and appropriate management of presumptive feline hemotropic mycoplasmosis may result in favourable clinical and haematological outcomes.

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