



International Journal of Veterinary Sciences and Animal Husbandry



ISSN: 2456-2912

NAAS Rating (2025): 4.61

VET 2025; 10(11): 104-105

© 2025 VET

www.veterinarypaper.com

Received: 07-09-2025

Accepted: 12-10-2025

R Santhosheni

Department of Veterinary
Parasitology, Madras Veterinary
College, TANUVAS, Chennai,
Tamil Nadu, India

Selvarayar Arunkumar

Department of Veterinary
Parasitology, Madras Veterinary
College, TANUVAS, Chennai,
Tamil Nadu, India

Arumugam Sangaran

Department of Veterinary
Parasitology, Madras Veterinary
College, TANUVAS, Chennai,
Tamil Nadu, India

Paramasivam Raja

Department of Animal
Biotechnology, Madras
Veterinary College, TANUVAS,
Chennai, Tamil Nadu, India

Corresponding Author:

R Santhosheni

Department of Veterinary
Parasitology, Madras Veterinary
College, TANUVAS, Chennai,
Tamil Nadu, India

Morphological identification of feline haemoparasites in domestic cats in and around Chennai

**R Santhosheni, Selvarayar Arunkumar, Arumugam Sangaran and
Paramasivam Raja**

DOI: <https://www.doi.org/10.22271/veterinary.2025.v10.i11b.2709>

Abstract

Haemoprotzoan parasites pose a significant health challenge in animals, primarily affecting the blood and vascular system and leading to a range of associated diseases. Feline haemoprotzoan infections, although often subclinical, can result in considerable morbidity and mortality in affected cats. The present study aimed to determine the prevalence of haemoprotzoan parasites in domestic cats presented to the Madras Veterinary Teaching Hospital and private shelters in and around Chennai. A total of 182 cats were screened for haemoparasites between February and September 2025. Blood smears were examined microscopically for the presence of haemoprotzoa. The results revealed that *Cytauxzoon* spp. infection was prevalent in three cats (0.016%), while *Babesia* spp. and *Hepatozoon* spp. were not observed. Clinically, infected cats exhibited signs such as lethargy, inappetence, and mild anaemia, consistent with the pathogenic effects of haemoprotzoan infections. This study highlights the prevalence of haemoprotzoan infections among domestic cats in the study area, posing a potential health risk to the feline population.

Keywords: *Cytauxzoon* spp., *Babesia* spp., *Hepatozoon* spp

Introduction

Feline vector-borne diseases are emerging and re-emerging globally, with expanding distribution and rising prevalence influenced by climate, environmental, demographic, and human behavioural factors (Díaz-Regañón, 2017) ^[1]. Feline hemoparasitic infections represent a significant health concern in domestic cats, with clinical outcomes ranging from chronic, subclinical infections to acute and potentially fatal disease. Early and accurate detection of these pathogens is essential for effective disease management and improved prognosis. So, the present study aimed to determine the prevalence of haemoprotzoan parasites in domestic cats in and around Chennai.

Materials and Methods

Study Area and Period

The study was conducted at the Madras Veterinary Teaching Hospital, Chennai, and several private veterinary clinics in Chennai between February 2025 and September 2025. A total of 182 domestic cats of various breeds, ages, and sexes, suspected of illness, were randomly selected for examination. Each cat underwent a detailed physical and clinical examination. Clinical parameters recorded included body temperature, pulse rate, respiratory rate, enlargement of lymph nodes (LN), and paleness or jaundice of mucous membranes (MM).

Sample Collection

Approximately 0.5 ml of saphenous venous blood was aseptically collected into a labelled EDTA tube for haematological evaluation. Additionally, thin peripheral blood smears were aseptically prepared from the ear tip of each cat for microscopic examination.

Microscopic Examination: Blood smears were prepared, fixed, and stained using Giemsa

stain according to the standard procedure described (Zajac and Conboy, 2012) [2] and then examined microscopically. The smears were observed under oil immersion (100×) using a light microscope (Olympus, Japan) to detect the presence of haemoparasites. Parasites were identified based on their morphological characteristics, including those found within erythrocytes (*Cytauxzoon* spp., *Babesia* spp.) and those found outside erythrocytes (*Trypanosoma* spp.).

Results and Discussion

Microscopic examination of peripheral blood smears revealed the presence of *Cytauxzoon* spp., with an infection rate of 0.016%. The *Cytauxzoon* organisms appeared as numerous tiny, round, anaplasmod dot-shaped piroplasms within the erythrocytes of three cats (3/182 cats) (Fig. 1). No circulating gamonts of *Hepatozoon* spp. were observed during the microscopic screening of the blood smears. Similarly, no merozoites suggestive of *Babesia* spp. were detected in any of the examined samples.

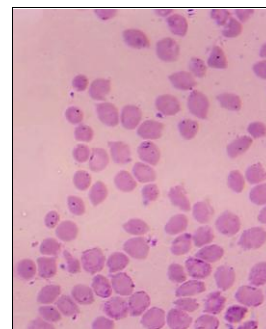


Fig 1: *Cytauxzoon* spp. in blood smear of cats (100 x)

During sample collection, several clinical signs were noted in the examined cats, including pale mucous membranes, weakness, dehydrated, rough hair coats, and nasal discharge. The signalment and clinical findings of the cats positive for *Cytauxzoon* spp. on blood smear examination are presented in Table 1.

Table 1: Signalment and clinical findings of cats positive on blood smear examination

Sl. No.	Case no.	Breed	Gender	Age	Clinical signs exhibited
1	Case no. 1	Siamese	Male	8 months	Pyrexia (106.4°F) and weakness
2	Case no. 2	Domestic shorthair	Female	10 years	Anorexia, dehydration, and pale mucous membrane
3	Case no. 3	Domestic shorthair	Male	1 year	Anorexia, dullness and depression

The clinical manifestations observed in the present study, such as pyrexia, anorexia, weakness, and depression, are consistent with those described by Meinkoth *et al.* (2000) [3], who reported the presence of classic signet ring-shaped *Cytauxzoon felis* organisms in erythrocytes of all examined samples. In that study, affected cats exhibited typical signs of cytauxzoonosis, including marked fever (39.4-41.1°C; 103-106°F), depression, and anorexia, which are comparable to the findings observed in the current investigation.

The observed prevalence of *Cytauxzoon* spp. infection (0.016%) in this study is lower than that reported by Vincy *et al.* (2023) [4], who documented a prevalence of 2.46% in domestic cats in Kerala based on blood smear examination. The lower infection rate observed in the present study could be attributed to factors such as geographical variation, sampling period, or the presence of low parasitemia in infected animals. The findings in the present study concurs with that of Malangmei *et al.* (2019) [5] wherein no circulating gamonts of *Hepatozoon* spp. or merozoites of *Babesia* spp. in erythrocytes were detected during microscopic screening of blood smears. In contrast, Vincy *et al.* (2023) [4] documented the microscopic detection of pear-shaped *Babesia* merozoites in blood smears of 2 out of 122 domestic cats screened for haemoparasites, corresponding to a prevalence of 1.64%, which was further confirmed by molecular detection using polymerase chain reaction (PCR). The absence of detectable parasitic stages in blood smears may be attributed to low levels of parasitemia, as proposed by Baneth (2011) [6], who suggested that extremely low parasitemia in felids could account for the absence of *Hepatozoon* gamonts in peripheral blood smears.

Conclusion

These results highlight the necessity of including *Cytauxzoon* spp. infection in the differential diagnosis of feline hemoparasitic diseases, even when parasitemia levels are minimal and microscopic detection is challenging. They also emphasize the importance of regular screening, vector control, and increased awareness in preventing and managing haemoprotozoan infections in cats which is often an incidental finding when screening for other diseases.

Conflict of Interest: Not available.

Financial Support: Not available.

References

- Díaz-Regañón D, Villaescusa A, Ayllón T, Rodríguez-Franco F, Baneth G, Calleja-Bueno L, *et al.* Molecular detection of *Hepatozoon* spp. and *Cytauxzoon* sp. in domestic and stray cats from Madrid, Spain. *Parasites Vectors*. 2017;10(1):112.
- Zajac AM, Conboy GA. *Veterinary clinical parasitology*. 8th ed. Wiley-Blackwell, UK; 2012. p. 186.
- Meinkoth J, Kocan AA, Whitworth L, Murphy G, Fox JC, Woods JP. Cats surviving natural infection with *Cytauxzoon felis*: 18 cases (1997-1998). *J Vet Intern Med*. 2000;14(5):521-525.
- Vincy P, Tresamol PV. Prevalence of gastrointestinal and haemoparasitic infections among domestic cats of Kerala. *J Parasitic Dis*. 2023;47(3):562-565.
- Malangmei L, Ajith Kumar KG, Nandini A, Bora CAF, Varghese A, Amrutha BM, *et al.* Molecular characterization of hemoparasites and hemoplasmas infecting domestic cats of southern India. *Front Vet Sci*. 2019;7:597598.
- Baneth G. Perspectives on canine and feline hepatozoonosis. *Vet Parasitol*. 2011;181(1):3-11.

How to Cite This Article

Santhosheni R, Arunkumar S, Sangaran A, Raja P. Morphological identification of feline haemoparasites in domestic cats in and around Chennai. *International Journal of Veterinary Sciences and Animal Husbandry*. 2025;10(11):104-105.

Creative Commons (CC) License

This is an open-access journal, and articles are distributed under the terms of the Creative Commons Attribution-Non Commercial-Share Alike 4.0 International (CC BY-NC-SA 4.0) License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.