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Clinical Article

A CASE REPORT OF *CYTAUXZOON* SPP. INFECTION IN A PERSIAN CAT

SONAM BHATT, ANIL KUMAR*, AJIT KUMAR[1], BHAVNA[2] and R.S.K. MANDAL[1]
Department of Veterinary Medicine, [1]Department of Veterinary Parasitology,
[2]Department of Veterinary Obstetrics and Gynaecology, Bihar Veterinary College (BVC), BASU, Patna-800014, Bihar

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SUMMARY

A 2-year-old persian cat was presented to the Veterinary Clinical Complex, Bihar Veterinary College, Bihar Animal Sciences University, Patna with a complaint of fever, anorexia, dullness, and vocalization at night. Clinical examination revealed fever, depression and mild dehydration. Based on the history and clinical signs, cat was tentatively diagnosed with haemoprotozoal infection. Blood sample was sent to the laboratory for hemato-biochemical analysis and blood smear examination. Microscopic examination was found positive for *Cytauxzoon* spp. Cat was treated with Imidocarb dipropionate. Two weeks post-treatment, cat appeared to be in excellent health and its appetite was normal.

Keywords: Cat, *Cytauxzoon*, Imidocarb

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Feline cytauxzoonosis is a tick-borne disease of cats and wild felids. It can be seen either in acute or subclinical form. It is caused by apicomplexan parasites belonging to the genus *Cytauxzoon* (Theileriidae). It is mainly caused by *Cytauxzoon felis*. Transmission of the disease occurs by *Amblyomma Americanum* and *Dermacentor variabilis* (Nagamori *et al.*, 2016). The chief complaints of disease are anorexia, lethargy and vocalization. Clinical signs of cytauxzoonosis include high fever, dehydration, pale mucous membrane, dyspnea and abdominal pain. Diagnosis of the disease is mainly done by microscopic detection of parasites by Giemsa or H&E staining (Holman and Snowden, 2009). The presence of signet ring-shaped intraerythrocytic piroplasm (merozoites) of *C. felis* on blood smears indicates the infection (Hoover *et al.*, 1994). Treatment is mainly done by antiprotozoal therapy and supportive care. At present, a combination of Atovaquone (15 mg/kg PO q8h for 10 days) and azithromycin (10 mg/kg PO q24h for 10 days) are considered the most effective treatment for cytauxzoonosis. However, atovaquone drug is expensive and not easily accessible, alternative therapies are desirable for cytauxzoonosis. An antiprotozoal drug, Imidocarb can also be used for the successful treatment with supportive care (Halder and Gupta, 2021). The disease can only be prevented by prophylactic ectoparasite control (Reichard *et al.*, 2019).

A 2-year-old persian cat was presented to the Veterinary Clinical Complex of Bihar Veterinary College, BASU, Patna with complaints of fever, anorexia, dullness, vocalization at night and a history of tick infestation. Clinical examination revealed fever (103°F), depression and mild dehydration (Fig. 1).

*Corresponding author: dranilvet95@gmail.com

Based on the history and clinical signs, cat was tentatively diagnosed with haemoprotozoan infection. Microscopic examination of blood smears revealed the presence of signet-ring piroplasm of *Cytauxzoon* spp. in the erythrocyte which confirmed the case of *Cytauxzoon* sp. infection in cat (Fig. 2). Hematological and biochemical examination showed values within the normal range (Table 1). On the day of presentation, tab doxycycline @10 mg/kg orally for 7 days and injection meloxicam @ 0.2 mg/Kg BW intramuscular were prescribed. After the confirmatory diagnosis, cat was treated with injection of imidocarb dipropionate @ 3.5 mg/kg, IM, two weeks apart. Two weeks' post-treatment, cat appeared in excellent health and appetite was normal. Post-therapeutic blood smear examination was found negative for *Cytauxzoon* sp. infection after 2 weeks.

Previously in India, cytauxzoonosis in domestic cats has been reported in West Bengal, India (Halder and Gupta, 2021). The important clinical signs of cytauxzoonosis are high fever, vomiting, anorexia, abdominal pain, lethargy, circling, vocalizations, icterus and anemia (Alho *et al.*, 2016). In the present case, similar clinical findings like fever, anorexia, and vocalization were present. Hematological analysis revealed no pathognomic findings in the present study which was in agreement with Sherrill and Cohn. (2015). Due to the non-specificity of clinical signs and hematological parameters, it is very difficult to diagnose cytauxzoonosis based on clinical assessment. Diagnosis of cytauxzoonosis is mainly done by microscopic examination or by PCR. On microscopic examination, intra-erythrocytic signet ring piroplasms (intraerythrocytic merozoites) are seen on blood smears using Giemsa or Wrights stains (Wikander and Reif, 2023). In the present study, microscopic tests were used for the diagnosis which revealed the

Fig. 1. A Persian cat showing dullness

Table 1. Hemato-Biochemical parameters of affected cat

Parameters	Result	Reference value*
Hb (gm%)	12.0	9.8-15.4
TEC (milliom/cmm)	6.3	5.0-10.0
TLC (103/cmm)	10.85	5.5-19.5
PCV (%)	38	30-45
SGPT (IU/L)	32	25-97
SGOT (IU/L)	10	7-38

*The Merck Veterinary Manual, 11th edition

presence of merozoite in RBCs. Treatment was started with injection imidocarb dipropionate IM two times two weeks apart which was in agreement with Sherill and Cohn. (2015) and Wang *et al.* (2017). An antiprotozoal drug Imidocarb which is used for treating canine babesiosis can also be used for the treatment of cytauxzoonosis (Halder and Gupta, 2021).

CONCLUSION

This case report suggests that cytauxzoonosis should also be consider for differential diagnosis in cats having high fever and vocalisation. The case of *Cytauxozoon* infection in a cat was successfully treated with imidocarb dipropionate injection. While further advanced molecular investigations are needed for the characterization and phylogenetic analysis of *Cytauxzoon* in cat. However, for further confirmation and validation, molecular tools are required.

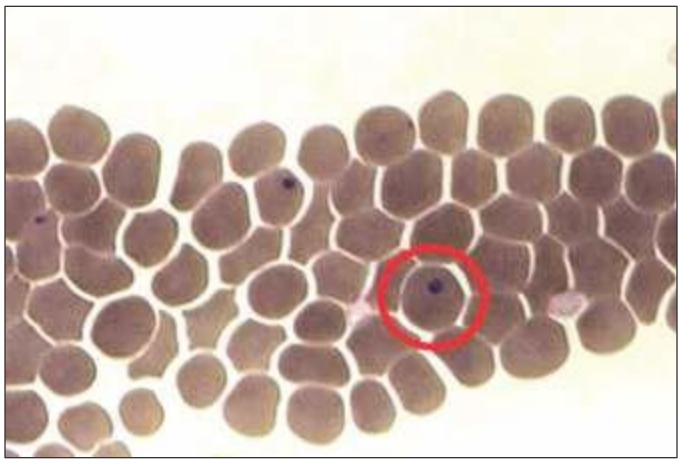

Fig. 2. Blood smear showing *Cytauxzoon* sp. piroplasm in cat erythrocytes (100x, Red circle)

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