



ISSN (E): 2277-7695  
ISSN (P): 2349-8242  
NAAS Rating: 5.23  
TPI 2023; SP-12(8): 178-179  
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[www.thepharmajournal.com](http://www.thepharmajournal.com)

Received: 02-06-2023

Accepted: 06-07-2023

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## Concurrent infection of *Babesia gibsoni* and *Eimeria exigua* in a persian cat

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### Abstract

A persian male cat, aged 6 months, get admitted in a private veterinary clinic in Jaipur city, with the clinical signs of anorexia, temperature, pneumonia, hepatopathy, yellowish urine, haemorrhagic enteritis and dehydration. Investigation of the blood smear revealed the RBCs infected with *Babesia gibsoni* and the stool was infested with *Eimeria exigua*. The Persian cat was treated successfully for *Babesia gibsoni* with primaquine phosphate, 1 mg percat with 36 hours interval by 4 treatments, then 1mg percat at every 7 days for 4 treatments with supportive therapy. The cat was treated orally with Sulfadimethoxine against *Eimeria exigua* (50 mg/kg body weight) for a period of 7 days. This study confirm the concurrent infection of *Babesia gibsoni* and the *Eimeria exigua* in a Persian cat and its successful clinical recovery.

**Keywords:** Persian cat, *E. exigua*, *B. gibsoni*, pneumonia

### Introduction

Babesiosis is a tick borne hemo-parasitic disease caused by an apicomplexan parasite *Babesia* with its world wide occurrence. (Ayoob A C., *et al.*)<sup>[1]</sup>. Mudaliar S V, *et al.* (1950)<sup>[7]</sup> reported *Babesia* in an Indian wild cat (*Felis catus*). Varuna P. Panicker *et al.* (2020)<sup>[8]</sup> reported a cat naturally infected with a novel *Babesia* sp. in India. The diagnosis of Babesiosis is made by demonstrating *Babesia* organisms usually present in pairs which are indicative of *B. canis* infection, whereas smaller, singular, round to oval organisms are *B. gibsoni*. (WSAVA: 2004)<sup>[2]</sup>. Most of the reports on feline Babesiosis from India were based on morphological identification of the piroplasmiasis in blood smears. Lucy *et al.* (2013)<sup>[6]</sup>.

Vectors transmitting Babesiosis in domestic cats are still unidentified. Although canine and feline Babesiosis can occur in all age group of animals, the majority of cases are in young animals. (Remo Lobetti: 2000; WSAVA: 2004)<sup>[5, 2]</sup>. Kelly P J *et al.* (2017)<sup>[4]</sup> reported *B. gibsoni* in cats at the level of four percent from St. Kitts in the Caribbean (Gene bank accession number JX962780). All *Babesia* species may cause pyrexia, anorexia, splenomegaly, anemia and severe thrombocytopenia (Irwin, 2009)<sup>[3]</sup>. The drug of choice is the antimalarial drug, primaquine phosphate, 1 mg percat 36 hours for 4 treatments, then 1mg percat every 7 days for 4 treatments. The other drug recommended is doxycycline at the rate of 5 mg/kg bid for 21 days. Diminazene aceturate and imidocarb are some more drugs recommended for treatment of feline babesiosis. (Canine and feline Babesiosis – World Small Animal Veterinary Association, World Congress Proceedings, 2004)<sup>[2]</sup>.

### *Eimeria exigua* in a persian cat

Jacobson C *et al.* (2000)<sup>[5]</sup> reported lethargy, weakness, and anorexia in cats reported the clinical signs in complicated cases which were fever, anemia, weight loss, renal failure, pulmonary edema, hepatopathy, pale mucus membrane and CNS signs.

Clinical findings of coccidiosis in dogs and feline as are anorexia, weight loss, anemia dehydration followed by mucoid diarrhoea. Faecal sample can be examined for oocysts using faecal flotation technique. The cat was treated orally with Sulfadimethoxine against *Eimeria exigua* (50 mg/kg body weight) for a period of 7 days. (Anthony Andrews: MSD Veterinary manual 2022).

### A case report

A persian cat aged 6 months, male, get admitted in a private veterinary clinic in Jaipur city, with the clinical signs of anorexia, temperature, yellowish urine, haemorrhagic enteritis and dehydration. Investigation was done by blood smear examination using Giemsa staining and

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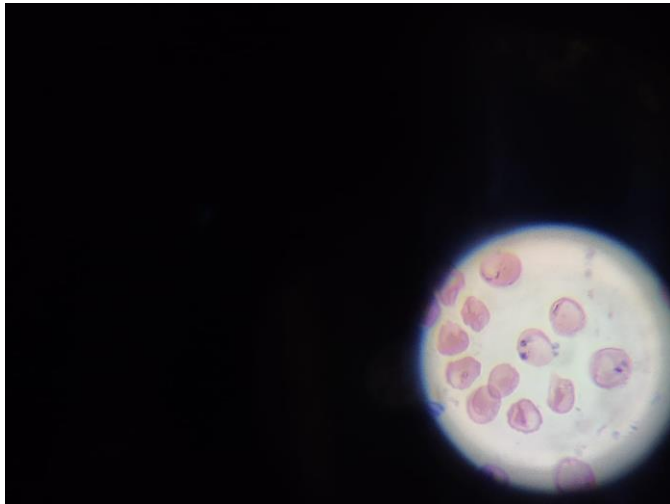
the stool was examined for parasitic infestations.

### Material and Methods

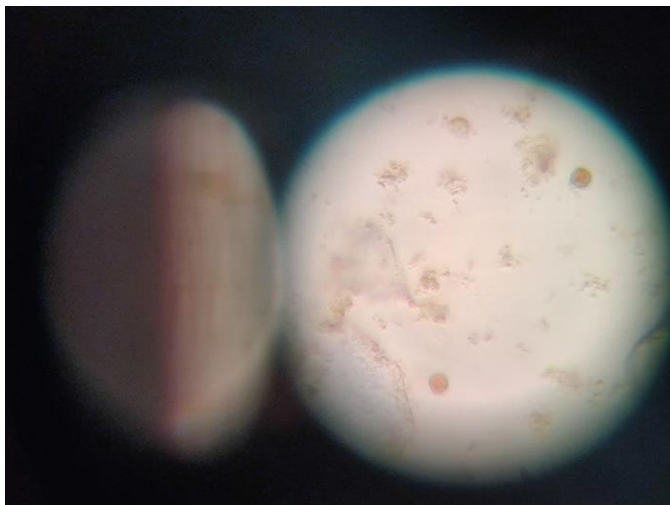
Blood smear examination and the stools were examined for blood parasites and endo parasites respectively after the clinical examination of the Persian cat.

### Results and Discussion

Blood smear examination revealed the presence of *Babesia gibsoni* (Fig.1) and the stools showed the *Eimeria exigua* oocysts. (Fig.2).



**Fig 1:** Persian cat infected RBC with *B. gibsoni*.



**Fig 2:** Persian cat infested with *E. exigua* in faeces

### Treatment

The Persian cat was treated with primaquine phosphate, 1 mg percat 36 hours for 4 treatments, then 1mg percat every 7 days for 4 treatments with supportive therapy. The cat was treated orally with Sulfadimethoxine against *Eimeria exigua* (50 mg/kg body weight) for a period of 7 days.

### Discussion

The Persian cat showed the clinical signs for Babesiosis i.e fever, anemia, weight loss, pulmonary edema, hepatopathy, and pale mucus membrane which are in concurrence with the observations of The blood smear examination was done using Giemsa staining method and the parasite was identified as *Babesia gibsoni* by its morphological view as per the recommendation of Lucy *et al.* (2013) [6]. As per the

recommendations of Canine and feline *Babesiosis* – World Small Animal Veterinary Association, World Congress Proceedings, (2004) [2], the persian cat was treated with primaquine phosphate, 1 mg percat 36 hours for 4 treatments, then 1mg percat every 7 days for 4 treatments with necessary supportive therapy successfully. The blood smear examination was carried out after a period of 30 days which found scanty number of Babesial organisms.

The cat was treated successfully with Sulfadimethoxine orally against *Eimeria exigua* (50 mg/kg body weight) for a period of 7 days as suggested by Anthony Andrews (2022). (MSD Veterinary manual).

### Conclusion

In this case study, a concurrent infection of a Persian cat with *B. gibsoni* and *E. exigua* were diagnosed and treated successfully with primaquine phosphate and Sulfadimethoxine respectively.

### Conflict of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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