

Case Report

Lahore Canine Fever in a Racing Greyhound

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Abstract | Lahore canine fever (LCF) is tick-born parasitic disease caused by a mixed infection of *Ehrlichia* and *Babesia*. A female racing greyhound was brought with anorexia, fever, red urine, bilateral blood tinged nasal discharge, haemorrhagic streaks on gum and echymosis on soft palate. Microscopic examination of peripheral and buffy coat stained smears revealed *Babesia canis* and *Ehrlichia canis* morulae in mononuclear cells, respectively. Treatment with imidocarb dipropionate and doxycycline resulted in both clinical and parasitological cure. This seems to be the first case reported of LCF in a racing greyhound.

Keywords | Lahore canine fever, Grey hound, Imidocarb dipropionate, *Babesia canis*, *Ehrlichia canis*

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INTRODUCTION

The natural mixed infection of ehrlichia (*E. canis*) and babesia (*B. gibsoni*) has been well described under name of Lahore Canine Fever (LCF) dating back to 1938 (Shirlaw, 1938). In Pakistan, both ehrlichial and babesial infections are common in imported greyhounds; however, simultaneous infection (LCF) has not been noted in this breed. The disease is transmitted by brown dog ticks, *Rhipicephalus sanguineus* (Adam and Pedro, 2011). Lahore canine fever causes variety of clinico-pathological abnormalities in affected dogs, nonetheless, there are no pathognomonic clinical signs/or laboratory findings that can be used to differentiate single *E. Canis* and concurrent infection of *B. gibsoni* and/or *B. canis* (Mathewman et al., 1993). The present report describes clinical and haemato-biochemical alterations seen in a dog affected with LCF.

CASE DESCRIPTION

A 3-year-old female racing greyhound was presented to Veterinary Medical Teaching Hospital, University of Agriculture, with complaint of anorexia, fever and red urine for the past 3 days. The dog was imported from Australia 2 months before illness and had proper vaccination status. The owner had noted 1 episode of bilateral epistaxis 2 days before checkup. On clinical examination, depression, fever (104.8 F), bilateral blood tinged nasal discharge, haemorrhagic streaks on gums at their dental margins, vibices

(diffuse type echymosis) on soft palate, and right popleteal lymphadenopathy were seen. Ticks (both adult and nymph) were noted in the neck area and identified as *Rhipicephalus sanguineus* (Domenico et al., 2014). Microscopic examination of peripheral and buffy coat stained smears revealed *babesia canis* (measuring approximately 3µm × 5 µm) and *ehrlichia canis* morulae in the cytoplasm of mononuclear cells, respectively. Haematobiochemical values on comparing with the reference values for greyhounds (Sullivan et al., 1994) revealed mild anemia (RBCs, 4.12×10⁶/µL; PCV, 35 percent, haemoglobin 12.9g/dL) with severe leucopenia (2.4×10³/µL), elevated bilirubin (13mg/dL), alanine transaminase (212 U/L) and hypoproteinaemia (3.9g/dL). Coagulation determinants showed marked thrombocytopenia (43×10³/µL) with increased prothrombin (17 seconds) and partial thromboplastin (43 seconds) time. Urinalysis demonstrated haemoglobinuria, proteinuria, pyuria and a specific gravity of 1.025. Fecal examination was negative for both ova and oocysts of parasites.

The combined clinical and hematobiochemicals findings confirmed a diagnosis of LCF (mixed *E. canis* and *B. canis* infection). The patient was treated with imidocarb dipropionate @ 5mg/kg b.wt. S.C (Inj. Imizole, ICI, Pakistan) and doxycycline @ 5mg/kg b.wt. twice a day (Tab. Korcin, San-Deo, Korea) for 3 weeks. A remarkable recovery was seen with 48 hours of treatment as suggested by normal rectal temperature, urine and reappearance of appetite. On 15-day of treatment, peripheral and buffy coat stained smear

become negative both for ehrlichia and babesia. The dog was found clinically healthy on reexamination 5-month after completion of the treatment.

DISCUSSION

Both natural and experimental concomitant *Ehrlichia canis* and *Babesia gibsoni* infections have been reported with fatal outcome (Harikrishnan et al., 2005; Assarasakorn and Niwetpathomwat, 2007) because *Babesia gibsoni* is more pathogenic than *Babesia canis* (Irrizarry-Rovira et al., 2001). The moderate severity of clinical signs of the present case might be due to the involvement of less pathogenic Babesia (*B. canis vogeli*), and short duration of illness. Increased prothrombin and partial thromboplastin time could have been the result of hepatocellular damage that was indicated by increased liver enzymes. Imidocarb dipropionate alone or in combination with doxycycline has been used to treat concurrent infection of canine ehrlichiosis and babesiosis (Adeyanju and Aliu, 1992).

The clinical manifestation and haemato-biochemical alterations noted in the subject of present report are seen frequently in canine ehrlichiosis with co-infection of Babesia (Mathewman et al., 1993; Harikrishnan et al., 2005).

Keeping in view the existence of this concurrent infection in Pakistan, reports of novel cases of these parasites should be incessantly encouraged to achieve further information regarding prevalence, endemic areas, epidemic and zoonosis nationwide. This first communication is projected to seek attention of health surveillance authorities regarding the establishment of supplementary effectual control measures for parasitic diseases of companion animals not reported hitherto in this region.

CONFLICT OF INTEREST

There is no conflict of interest.

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