

TICK BONE DISEASE IN DOG WITH DELAYED RECOVERY AND PROLONGED CONVALESCENCE PERIOD; AN EMERGING THREAT OF DRUG RESISTANCE

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ABSTRACT

This article presents a case of Tick-Borne Relapsing Fever (TBRF) in an 8-year-old spayed Labrador caused by *Borrelia turicatae* transmitted by *Ornithodoros turicata* ticks. The diagnosis, previously reliant on blood smear spirochete detection with limited sensitivity, now benefits from PCR for enhanced accuracy. The case study details an 8-year-old Yorkshire terrier from south central Texas exhibiting clinical symptoms, with laboratory findings indicating thrombocytopenia and spirochetes on blood smear examination. Treatment involved antibody and supportive care, extending beyond the anticipated recovery time. The article concludes by emphasizing the underdiagnosis of TBRF in veterinary practice and the importance of considering it in relevant cases with thrombocytopenia.

Keywords: *Borrelia*; Spirochete; Spirochetemia; Thrombocytopenia

Introduction:

Amidst the joy and loyalty shared with our canine friends, there exists a silent menace that often goes unnoticed – tick-borne relapsing fever (TBRF). This insidious disease, transmitted by the ubiquitous tick vectors, poses a significant health risk to dogs, demanding our attention and understanding. In this article, we embark on a journey to unravel the complexities of tick-borne relapsing fever in dogs, exploring its manifestations, transmission dynamics, and crucial preventive measures to safeguard the well-being of our cherished four-legged companions. This emerging threat in veterinary medicine necessitates a closer examination of the causative agents, primarily *Borrelia* species, and their intricate interactions within the canine host. Dogs afflicted by TBRF often present with a spectrum of symptoms, ranging from fever and lethargy to more severe manifestations affecting various organ systems. Unraveling the diagnostic challenges associated with TBRF, including serological tests and molecular techniques, is crucial for timely and accurate identification. The complexities of treatment strategies, incorporating antibiotics and supportive care, underscore the importance of early intervention in mitigating the impact of TBRF on canine health. Moreover, preventive measures such as effective tick control and vaccination are pivotal components in the overarching strategy to curb the prevalence of this disease among dogs. By shedding light on the nuances of tick-borne relapsing fever in dogs, this article aims to empower dog owners with knowledge to proactively protect their pets, fostering a resilient defense against the threats posed by these stealthy arachnids.

Case Presentation

An 8-year-old, female, spayed Yorkshire terrier from south central Texas presented to their veterinarian with lethargy, in-appetence, and an acute onset of a “hunched over” posture. The dog had no clinical history of external parasites, including ticks.

Physical Examination

Temperature 104.5 F, Pulse 90/min, Respiration 35/min, off feed and Dehydration 7%

Lab Report

The major clinic-pathological changes detected by the laboratory included marked thrombocytopenia (48,000 platelets/ μ L) and occasional extracellular spirochete bacteria on blood smear examination.

Treatment

Doxycycline	10 mg/kg PO q24h with food
Amoxicillin	10 mg/kg PO BID
Azithromycin	5-10 mg/kg PO IV SID
Supportive Care	Inf. Normal Saline
	Inf. Dextrose 10%

Discussion

Tick which causes this fever to complete his life cycle on host feeding and molting on shelter. *Ornithodoros turicata* spent his life on host just for feeding and spend rest of his life in shelter. its life cycle consist of six stages. it starts with adult giving eggs in shelter which hatches into the larvae which travels and attached to host and suck blood and molt into nymph and get back to shelter, it passes through this phase six time until it reaches to adult stage, it

mates and give eggs. In most diseases caused by ticks, load of ticks is very high as they spent their whole life on host and it is not easy to eliminate the problem. But in this case ticks do not live on the host all the time rather they are only present at the time of feeding so their treatment must not be so prolonged. But in this case treatment goes beyond expected recovery time. Drugs used in this case were amoxicillin, doxycycline and azithromycin and recovery period was 45 days.

CONCLUSION; TBRF is likely to be underdiagnosed in veterinary medicine. In areas endemic to *Ornithodoros* spp. ticks, TBRF should be considered in dogs with thrombocytopenia. Examination of standard blood smears can provide a rapid and specific diagnosis of TBRF when spirochetes are observed.

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