

Tick Attachment of the Eyelid Margin: A Case Report

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Abstract

Ticks are blood-sucking parasites and important vectors for disease transmission. Due to the eyelid's mobile structure, tick attachments in this area are rare. In this case report, a tick was found attached to the eyelid margin of a patient who presented to the emergency department with a two-day history of foreign body sensation in the right eye caused by a brown foreign object. The tick was completely removed using blunt forceps. The patient's medical history revealed ownership of a pet dog. On the day of presentation, no pathological findings were detected during the physical examination or laboratory tests. The patient was prescribed antibiotic ophthalmic drop and ointment. A follow-up was scheduled for seven days after the tick removal. At the follow-up visit, the patient exhibited no systemic or ophthalmologic symptoms, and blood tests showed no abnormalities. The tick was identified as a nymph-stage *Rhipicephalus sanguineus*, commonly known as the brown dog tick. This case emphasizes that close contact with domestic animals that roamed freely in the garden should raise suspicion for tick-related ocular complaints, even in urban settings.

Keywords: Emergency department, eyelid, *rhipicephalus sanguineus*, tick

Introduction

Ticks are the acarine ectoparasites belonging family Ixodidae (1). After mosquitoes, ticks are the second most important vectors of infectious disease transmission worldwide (2). *Rhipicephalus sanguineus*, commonly known as the brown dog tick, is the most widespread tick species globally and acts as a parasite on both dogs and humans (3). This tick species can serve as a vector for numerous diseases, most notably *Ehrlichia canis*, *Rickettsia conorii*, *Rickettsia rickettsii*, and *Coxiella burnetii* (4). Due to the eyelid's mobility, tick infestations in this area are rare. In this case report, we present a 74-year-old female patient who was admitted with a tick attached to the margin of her right upper eyelid, along with the treatment plan implemented.

Case Report

A 74-year-old female patient with no known chronic disease presented to the Emergency Department of Urla State Hospital, İzmir, Türkiye with a two-day history of a brown foreign body on her right upper eyelid, causing discomfort.

On examination, an insect was observed attached to the central margin of the patient's right upper eyelid, and it was noted to be moving during the assessment (Figure-1). The patient's medical history revealed that she had a pet dog that occasionally roamed in the garden.

The patient exhibited no systemic symptoms and her vital signs were within normal limits. Her visual field was normal, and she reported no additional complaints. An ophthalmology consultation was requested. Ophthalmological examination revealed normal visual acuity and anterior segment findings. No larval formations were observed during the examination. The tick was completely removed using blunt forceps. Following removal, the eye and eyelid were irrigated with normal saline. Blood tests were performed on the day of admission, day 3 and day 7; and the results were within normal limits (Table-1).

The patient was prescribed moxifloxacin 0.5% ophthalmic drops to be used four times daily, along with an ophthalmic ointment containing bacitracin 500 IU/g and neomycin sulphate 5 mg/g, also to be applied four times daily for one week. A follow-up appointment was scheduled for one week after the initial visit. At the follow-up, blood test results remained normal, and no additional systemic or

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Received: 09.01.2026 • **Revision:** 10.02.2026 • **Accepted:** 24.02.2026

DOI: 10.33706/jemcr.1859953

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Cite this article as: Selen R, Keyfli E, Korkmaz S. Tick Attachment of the Eyelid Margin: A Case Report. Journal of Emergency Medicine Case Reports. 2026;17(2): 54-56



Figure 1. Tick attached to the margin of the right upper eyelid

Table 1: Laboratory parameters on day 0, day 3, and day 7

Parameter	Day 0	Day 3	Day 7	Reference Range
White Blood Cell Count (WBC)	8.63	7.39	7.63	3.98-10.04 ($\times 10^3/\mu\text{L}$)
Hemoglobin (Hb)	13.9	13.8	13.4	12-18 (gr/dL)
Platelet Count (PLT)	242	241	256	180-370 ($\times 10^3/\mu\text{L}$)
C-Reactive Protein (CRP)	0.9	0.5	0.7	0-6 (mg/L)
Aspartate Amino-transferase (AST)	22	20	18	8-40 (U/L)
Alanine Amino-transferase (ALT)	15	13	13	5-40 (U/L)
Total Bilirubin	0.73	0.76	0.87	0.2-1 (mg/dL)
Urea	39	37	36	5-50 (mg/dL)
Creatinine	1.00	1.00	1.00	0.54-1.16 (mg/dL)
Prothrombin Time	11.3	10.3	11.4	9.7-14.4 (sec.)
INR	1.09	0.99	0.99	0.8-1.2
aPTT	26.0	29.8	27.5	18-43 (sec.)

ophthalmologic findings were observed. The patient's eyelid healed within one week without any scar tissue or abscess formation. Based on the patient's clinical presentation and the morphological examination of the tick, it was identified as a nymph-stage *Rhipicephalus sanguineus*.

Written informed consent was obtained from the patient following the journal's patient consent policy.

Discussion

Ticks are important vectors for the transmission of zoonotic diseases. *Rhipicephalus sanguineus*, commonly known as the brown dog tick, is the most widespread tick species globally. However, tick attachment to a mobile region such as the eyelid is rare. This attachment can lead to various ophthalmological complications, including uveitis,

conjunctivitis, keratitis, and vasculitis (5). Therefore, early recognition of such cases and prompt removal of the tick are of great importance.

Keklikçi et al. reported the removal of an *Ixodes ricinus* tick from the margin of the right upper eyelid of a 3-year-old patient in Türkiye using blunt forceps. After eye irrigation, the patient was treated with topical 0.3% ciprofloxacin four times daily (6).

Sakalar et al. described the development of cellulitis caused by a nymph-stage *Ixodes* tick in the eye of a 4-year-old patient (7). Singh et al. reported the removal of an *Ixodes* tick from the upper eyelid of an 11-year-old patient in Singapore (8). Liolios et al. documented the removal of an *Ixodes* tick from the right lower eyelid of a 40-year-old patient in the United Kingdom (9). Çelebi et al. reported the removal of a *Dermacentor marginatus* tick from the right lower eyelid of a 71-year-old patient (10). Parajuli et al. described a similar case involving a 58-year-old female patient with a tick attached to the right lower eyelid (11). In all of these cases, the importance of early tick removal was emphasized.

Gopi et al. successfully removed a *Rhipicephalus sanguineus* tick from the right lower eyelid of a 49-year-old female patient by applying 1 cc of 2% lignocaine to the area without any manipulation (12). This is considered one of the least invasive and safest methods in the literature and demonstrates that various approaches can be used for tick removal.

Conclusion

Tick attachment to the eyelid is a rare but clinically significant presentation. Early recognition and careful removal are essential to minimize the risk of systemic and ocular complications. Close follow-up is warranted even when patients present to the emergency department without systemic symptoms. This case also emphasizes that close contact with domestic animals that roamed freely in the garden should raise suspicion for tick-related ocular complaints, even in urban settings.

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