

Tick infestation of the eyelid: a case report in a child

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A three-year-old girl presented with a small brown lesion on the right upper eyelid margin. Close examination revealed an insect body attached to the eyelid margin. Microscopic examination of the specimen identified the species of the organism as *Ixodes ricinus*. The tick was completely removed with blunt forceps. She was treated with lid toilet, irrigation, and application of topical 0.3% ciprofloxacin four times daily to the affected eye. The lesion healed without scarring after one week. No systemic symptoms were observed. Mechanical removal with blunt forceps may be a quick, easy, safe and effective treatment for ticks located on the eyelids.

Key words: child, eyelid, tick, treatment.

Ticks are acarine ectoparasites of the genus *Ixodes*, which are adapted to blood sucking to obtain nutrition from other animals¹. Arthropods intervene in different ways in several human diseases because they act as vectors for bacterial and viral infections, and sometimes intoxicate humans with the toxins they produce². Ticks are arthropod vectors of a number of pathogens that cause potentially serious human diseases, such as Lyme borreliosis, Rocky Mountain spotted fever, tick-borne encephalitis, tularemia, Crimean-Congo hemorrhagic fever and Q fever. Two classes of tick are responsible for disease in humans: hard ticks (family Ixodidae) and soft ticks (family Argasidae). Soft ticks take smaller, take quicker blood meals at shorter intervals, and can transmit pathogens much more quickly (within a minute of biting) than hard ticks (hours or days). However, hard ticks are more common, harder to remove and more likely to transmit disease³. Tick infestation of ocular tissues is rare. A few cases of ticks on the eyelid have been reported⁴. Herein, we report a case of tick infestation of the eyelid margin in a child, which was treated with removal with blunt forceps.

Case Report

A three-year-old girl with a small brown lesion of the right upper eyelid margin was referred to our clinic. Close examination revealed an insect

body attached to the eyelid margin (Fig. 1). The anterior segment was normal. She did not have any systemic symptoms. The child had been in close proximity with dogs, which were thought to be the most likely source of infestation in this case. Blunt forceps were used for removal of the tick. The tick was removed completely without leaving any residual parts (Fig. 2). The patient was treated with lid toilet, irrigation, and application of topical 0.3% ciprofloxacin four times daily to the affected eye. She was examined to exclude the presence of other ticks and any other possible local or systemic complications. The lid healed without scarring after one week. Examination of the organism revealed that it belonged to the genus *Ixodes ricinus*.



Fig. 1. Tick embedded in the right upper eyelid.

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Fig. 2. Tick removed completely intact.

Serological tests were performed to identify the zoonosis transmitted by ticks, with negative results.

Discussion

Ticks are blood-sucking arthropods of the family Ixodidae. The most frequent manifestations in the eye are conjunctivitis, uveitis, keratitis and vasculitis². Ticks can become embedded in the meibomian gland orifice and manifest as a mass at the eyelid margin.

Ticks are best removed as soon as possible, because the risk of disease transmission increases significantly after 24 hours of attachment. Animal and human studies have shown that the risk of disease transmission increases significantly after 24 hours of attachment and is even higher after more than 48 hours⁵. Holak et al.⁶ reported that Lyme borreliosis was found in one out of five patients after tick infestation of the eyelid region. Serologic investigation for Lyme disease was negative in our patient.

Mechanical procedures and chemical substances have been recommended for tick removal. Experimental evidence suggests that chemical irritants are ineffective at forcing the ticks to detach and risk triggering injection of salivary fluids and possible transmission of disease-causing microorganisms. Application of petroleum jelly, fingernail polish, 70% isopropyl alcohol, or a hot match has failed to induce detachment of ticks³. Using forceps or grasping with fingers as close to the skin as possible did remove the ticks.

Euro-surveillance recently reported that travellers who discover ticks attached to their body should remove the tick by grasping the mouthpiece with

tweezers (forceps) and rotating the tick while withdrawing it. On the other hand, readers have pointed out that other guidelines, including those of the World Health Organization and the United States Centers for Disease Control and Prevention do not advise rotating the tick during removal³.

The use of a blunt, medium-tipped, angled forceps offers the best results. Following tick removal, the bite area should be inspected carefully for any retained mouthparts, which should be excised⁵. All methods aim for complete removal of tick parts from host tissue to prevent late complications or sequelae such as granuloma or inflammatory and infectious skin abscess formation¹.

Application of chemical substances may be an irritant for the eye. Therefore, in our case, the tick was mechanically removed with blunt forceps completely without any tick parts remaining on the eyelid.

There is conflicting evidence as to the need for routine antibiotic prophylaxis. Although a discussion of evidence is beyond the scope of this article, most experts, including the Centers for Disease Control and Prevention and the Infectious Diseases Society of America, do not recommend routine antibiotic prophylaxis. We used topical 0.3% ciprofloxacin in our patient. However, antibiotic use may be considered in patients who are deemed high-risk, in pregnant patients, and in patients living in areas endemic for tick-borne diseases⁵.

In conclusion, eyelid localization of ticks is a rare condition. The tick is best completely removed from the eyelid as soon as possible. Mechanical removal may be a quick, easy, safe and effective treatment for ticks located on the eyelids.

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