



Rolling removal technique for a tick embedded in the eyelid

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Keywords: tick bites, tick removal techniques

A 5-year-old girl presented to the ophthalmology clinic with a foreign-body sensation in her left eye. She lived with her family in a house in a deep forest area. Although her mother found the foreign body in her upper eyelid, the specific date of lodgment was unknown. On examination, a tick was seen on the left upper eyelid margin, and the head of the tick was completely buried under the skin. Examination of an anterior ocular segment was unremarkable. On the day she presented to us, removal of the tick was attempted under general anesthesia. We first grasped the mouthpart of the tick and gently pulled it upward with regular forceps, but there was much resistance, and the tick could not be removed. We then tried a rolling technique in which we gently pulled the tick upward, using scleral plug forceps. We held the tick's body as close as possible to its head using the forceps and rotated the forceps counterclockwise, trying not to pull the parasite forcibly (Figure 1A–C). We confirmed that

no piece of the tick's mouth remained in the eyelid (Figure 1D). The tick was removed successfully without resistance or rupture, and the tick's mouth was observed on the removed tick. The tick was identified as *Ixodes ovatus*. Because it seemed that a few days had passed since the girl was bitten by the parasite, she was started on amoxicillin hydrate and was discharged the next day after admission. One month later, the patient was doing well; she had no fever or rashes, and the upper eyelid had healed well.

Although there is no perfect technique for removing embedded ticks from a human host, several methods have been reported, including the use of chemicals, which may be toxic to ocular tissues.¹ Love et al. reported the use of a blepharoplasty incision, including en bloc excision.² However, this procedure is invasive, with the risk of ocular tissue loss and disruption of the ocular architecture, especially for a child, as in the current case. Pulling the tick straight out,

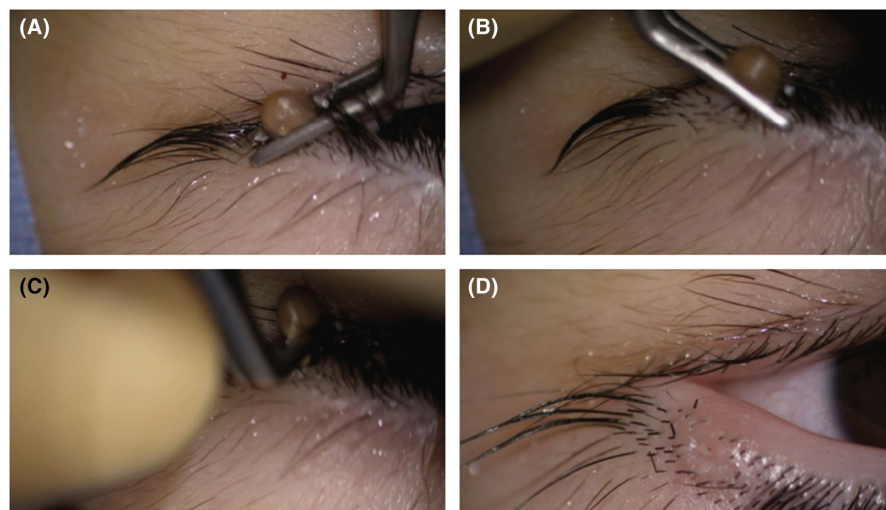


FIGURE 1 Holding the tick body as close as possible to its head using scleral plug forceps. Rotating the forceps counterclockwise, trying to pull slightly (A–C). Confirming that no piece of the tick's mouth is retained in the eyelid (D).

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that is, direct mechanical tick removal is recommended in previous reports; however, forcible action could result in the retaining of parts of the tick's mouth in the eyelid, which would later require en bloc excision for removal. Manual removal, with the forceps held perpendicular to the skin, is occasionally difficult to control because the skin around the eye is extensible. Because tick hypostome has many backward-facing denticles, rotating the tick body would reduce the resistance of the hypostome, facilitating removal.³ Moreover, rotating the tick around its body axis requires minimal force and time and is non-invasive. Early removal of the tick is important, as the risk of disease transmission increases with time. Considering the cosmetic value of the affected part of the body and that it was a pediatric case, it is reasonable to perform a rolling removal technique with scleral forceps when straight pulling is ineffective, before selecting other options, such as en bloc excision.

ACKNOWLEDGMENT

None.

CONFLICT OF INTEREST

The authors have stated explicitly that there are no conflicts of interest in connection with this article.

INFORMED CONSENT

The patient consented in writing to the publication of the case.

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How to cite this article: Kondo Y, Sano I, Makino S, Kawashima H. Rolling removal technique for a tick embedded in the eyelid. *J Gen Fam Med.* 2023;24:54–55. <https://doi.org/10.1002/jgf2.583>