Lone-Star Tick Bite of the Conjunctiva

We report 2 separate occurrences of lone-star tick bite to the conjunctiva. Both occurred within a 100-mile radius during the summer of 2000. A search of the literature yielded 2 reports of conjunctival tick bite.\(^1\)\(^2\) In one of these, the tick was removed with difficulty using a cotton-tipped applicator. We propose a simple, yet effective, method of removal.

**Case Reports. Case 1.** On July 9, 2000, a 5-year-old girl was evaluated by her physician for an unidentified “spot” on her right eye. A tick and the surrounding area of erythema were identified in the conjunctiva temporally in the right eye (**Figure**). The remainder of the ocular examination findings were normal. Following referral to Arkansas Children’s Hospital (Little Rock), conscious sedation with ketamine and midazolam allowed the complete removal of the tick and a small amount of the surrounding conjunctiva with forceps and Westcott scissors. Two weeks later, a follow-up telephone call revealed the patient to be doing well, having been seen twice by her personal ophthalmologist.

**Case 2.** On August 8, 2000, a 2-year-old girl was seen in the emergency department for evaluation of tick bites. An ocular foreign body prompted an ophthalmologic consultation and identification of a tick attached to the conjunctiva of her left eye. Conscious sedation with ketamine and midazolam allowed removal of the tick and surrounding conjunctiva with forceps and Westcott scissors. One week later, there was no sign of infection or other abnormality.

**Comment.** The lone-star tick, identified in these 2 cases, is the common name for *Amblyomma americanum*. The life cycle is composed of the egg, larva, nymph, and adult stages of development. The egg hatches into a 6-legged larva (“seed” tick), which attaches to a host and feeds. The larva then drops off the host and metamorphoses into an 8-legged nymph. The nymph attaches to feed and later metamorphoses into an adult. The adult is differentiated into male and female.

The distinctive morphological features of the species of *Amblyomma* were described by G. Neumann in 1896.\(^3\) The female tick is larger than the male counterpart. On the scutum, or dorsal hard plate, of both the male and female are intermittent white spots, hence the name “lone-star tick.” These spots are typically more prominent on the female than on the male. The female can have red and green markings in addition.

*A. americanum* is known to be a transmitter of diseases to domestic animals and to humans. Published reports by Maria Maver (1911) of Rocky Mountain spotted fever rickettsia transmission by *A. americanum* in guinea pigs led to the hypothesis that spotted fever could be transmitted to humans by this tick vector. In 1943, extraction of spotted fever rickettsia from an *A. americanum* nymph was reported.\(^4\) *Amblyomma* has also been demonstrated to be a carrier of tularemia and an erythema migrans—like rash illness similar to Lyme disease.\(^5\) As a known carrier of a number of diseases, *A. americanum* poses a threat to humans. It probably accounts for most tick infestations in the United States, especially in the south central states.\(^6\) Complete removal is thought to lessen the potential for transmission.

As activities move to the outdoors during the summer months, tick bites, especially on exposed areas of the body, may occur even after a short time in wooded areas. At least 4 hours of tick attachment are thought to be necessary for spotted fever rickettsia transmission in humans.\(^7\) Preventive measures include complete removal of the tick; care must be taken not to leave mouth parts in the skin or to divide the tick’s body. Residual crushed tissue and feces can also transmit disease. In the past, to avoid rupture or incomplete removal of the tick, lindane shampoo, deodorized kero-
sene, ether, or iodine were used. Since the tick bites we report involved the conjunctiva, mechanical extraction was the procedure of choice. We add our cases of conjunctival tick bite to the literature with a suggested method for removal.

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A Case of Atypical WAGR Syndrome With Anterior Segment Anomaly and Microphthalmos

Wilms tumor, aniridia, genitourinary anomalies, and mental retardation (WAGR syndrome) are caused by the deletion of chromosome 11p13, which includes the Wilms tumor gene (WTI) and the aniridia gene (PAX6) loci (MEM, No. 194070). We report a case of atypical WAGR syndrome with anterior segment anomaly and microphthalmos.

Report of a Case. A 1-month-old boy had microphthalmos bilaterally. A microcornea with a corneal cyst in the right eye (axial length, 14.4 mm) (Figure 1A) and corneal opacity and absent anterior chamber in the left eye (axial length, 21.0 mm) (Figure 1B) seemed to be part of an anterior segment anomaly that includes the Peter anomaly. The vitreous cavities and posterior segments were normal. We examined the right eye with a small contact lens and light stimuli and obtained a normal response on the electroretinogram and in the left eye a subnormal response, suggesting retinal dysfunction. Wilms tumors developed bilaterally when the patient was 3 years old (Figure 1C). Because of a large tumor, we resected the right kidney; the left kidney underwent chemotherapy. The resected tumor had predominantly blastemal cells (Figure 1D). The child also had undescended testes and mental retardation. Analysis of G-banded prometaphase chromosomes identified deletion of chromosome 11p13-15.1 in 1 allele (Figure 2). Chromosomal analysis and physical findings were compatible with WAGR syndrome, but the ocular findings differed substantially.

Comment. Since the PAX6 gene was identified as a candidate gene for aniridia, numerous mutations of 11p13 have been reported in patients with aniridia. Studies have identified PAX6 mutations in numerous ocular anomalies, including the Peter anomaly, congenital cataract, and foveal hypoplasia. In situ hybridization and immunohistologic examination identified multiple functions of the gene; the gene moves from the anterior to the posterior segments of the eye throughout development. Therefore, it is not surprising that ocular anomalies other than aniridia result from deletion of 11p13. Two other patients were described.