



# Techniques and Procedures

## ANT BITES CONJUNCTIVAL TISSUE: THE ABCS OF REMOVING AN OCULAR ANT FOREIGN BODY

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**Abstract—Background:** A variety of insect-related ocular injuries have been reported in the literature. However, no reports have been published documenting injuries resulting from exposure of the ocular surface to ants. This is surprising, given the relatively ubiquitous presence of ants. This is the first known case report to describe various techniques utilized in the removal of ants from the ocular surface. **Case Report:** This case report details the presentation of a distressed 24-year-old woman who presented to the Emergency Department with an ocular foreign body associated with pain and increased lacrimation. She was identified to have an ant adherent to her conjunctiva. Various techniques of removal were performed, with the ant finally removed without any trauma to underlying tissues. **Conclusion:** This is the first case report to detail various techniques utilized in the removal of ants from the ocular surface, and discusses salient features that treating physicians should be aware of in managing patients presenting with ant bites. © 2019 Elsevier Inc. All rights reserved.

**Keywords—**ant bite; insect bite; ocular trauma; foreign body

### INTRODUCTION

Ocular foreign bodies may take on any form. These often arise secondary to trauma or workplace-related incidents. Although uncommon in clinical practice, a range of

Consent to clinical photography for research and publication was obtained from the treated patient.

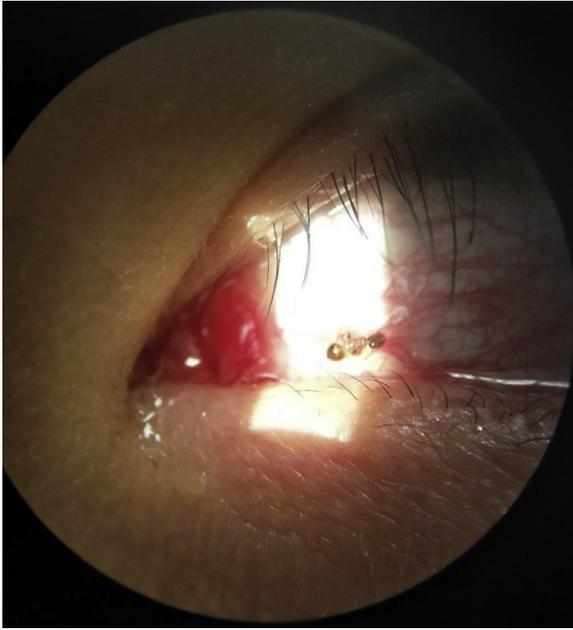
insect-related ocular injuries have also been reported in the literature. These include injuries secondary to exposure to beetles, leeches, tarantula hairs, and caterpillar setae (1–7). However, no reports have been published documenting injuries as a result of exposure of the ocular surface to ants. This is surprising, given the relatively ubiquitous presence of ants. A query on internet search engines also returns multiple concerned questions from netizens afflicted by these circumstances. This is the first known case report to describe various techniques utilized in the removal of ants from the ocular surface.

### CASE REPORT

A 24-year-old woman presented to the Emergency Department (ED) at a tertiary hospital reporting the sudden onset of pain involving her right eye, associated with ocular discomfort and increased lacrimation while she was en route home. Her partner identified the presence of a foreign body adherent to her conjunctiva, and therefore presented to our ED for further evaluation.

She reported a history of moderate myopia, but was otherwise well, with no significant medical or ocular history. She was hemodynamically stable, afebrile, and did not report the presence of symptoms suggestive of a hypersensitivity reaction.

The patient's best corrected visual acuities were 20/20 in her right eye and 20/30 in her left eye. Her intraocular



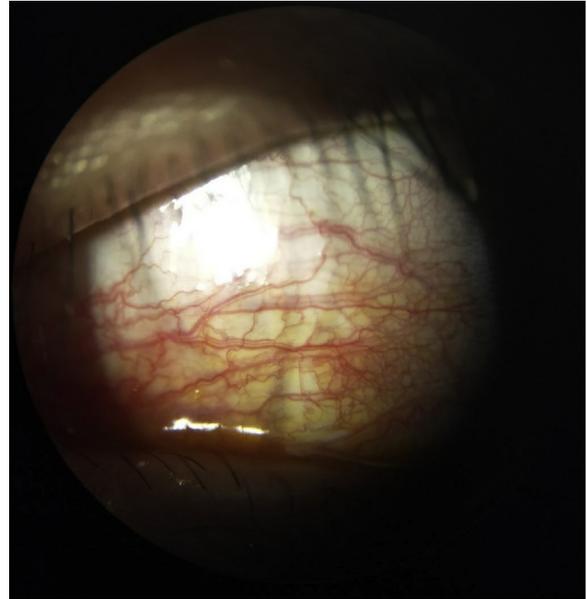
**Figure 1.** Presence of an ant with its mandibles grasping onto the conjunctiva.

pressures were within normal limits. pH measurements were 7 bilaterally. The foreign body was identified as an ant (Figure 1), with its mandibles tightly closed over the underlying conjunctiva. Mild conjunctival hyperemia was noted, but anterior segment examination was otherwise unremarkable during slit lamp examination.

After instillation of topical anesthesia (tetracaine 1%, Bausch & Lomb, Rochester, NY), initial attempts to remove the ant under direct visualization—first with a cotton-tipped applicator and subsequently with a pair of nontoothed forceps—were unsuccessful and poorly tolerated despite copious amounts of topical anesthesia. Under direct visualization using a slit lamp, a bent 30-gauge needle mounted on a syringe was utilized to gently manipulate underlying conjunctiva around both mandibles and the ant was subsequently removed atraumatically (Figure 2). Staining of the anterior segment did not demonstrate the presence of fluorescein uptake (Figure 3). Eversion of the eyelids and sweeping of the conjunctival fornices did not reveal the presence of further retained foreign bodies, and the anterior segment examination was otherwise unremarkable. A dilated fundus examination undertaken by the treating ophthalmologist did not demonstrate any abnormalities, and the patient was subsequently discharged from our service.

## DISCUSSION

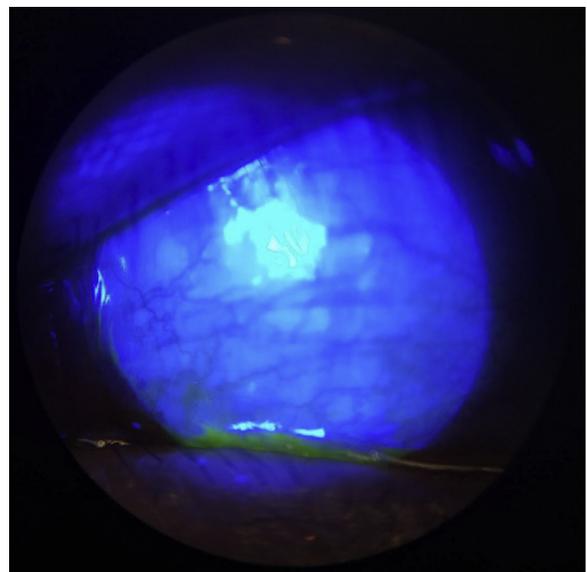
Ant bites are a fairly common occurrence, with most cases representing innocuous episodes with spontaneous



**Figure 2.** Post removal of the ant foreign body. The underlying conjunctiva was not traumatized.

resolution without the need for further intervention. However, severe allergic reactions to ant bites and stings have been increasingly reported (8). Involvement of ophthalmic structures may also be alarming for both patients and physicians alike.

It is crucial to prioritize and rule out any life- and sight-threatening sequelae that may arise from the original inciting event. This includes anaphylactic reactions, which, although uncommon, make up a significant proportion of patients presenting to the emergency



**Figure 3.** Clinical photography post removal of the ant. No evidence of conjunctival fluorescein uptake post removal of the ant was identified.

department. Practitioners should also investigate for the presence of potential chemical injuries, as ant bites may be associated with the release of either acid- or toxic alkaloid-containing venom, depending on the species (9,10). Should this be present, immediate and copious irrigation should be performed, with periodic assessment of the pH of the ocular surface prior to proceeding with further examination.

A dearth of resources exists for health care practitioners to consult when faced with such a situation. Reported methods through online non-peer-reviewed resources include the use of cotton-tipped applicators and forceps. These methods were trialed in this instance, but poorly tolerated by our patient. Access to microscopes or loupes permits application of the technique described in this report, with easy and atraumatic manipulation of the mobile conjunctiva.

### CONCLUSIONS

To the best of our knowledge, this is the first published case report detailing ocular involvement of an ant related injury. This was, thankfully, an uneventful encounter for our patient, who was discharged without any further need

for follow-up. Physicians attending to patients need to be cognizant about the life- and sight-threatening issues associated with ant-related injuries and manage such patients accordingly.

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