

# Acute Ocular Pain following Contact with Electrical Ant's (*Wasmannia Auropunctata*) Excretions

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## Abstract

**Background:** Ocular injury caused by insect bites or by contact with insects' excreta is rare. The electrical ant- *Wasmannia auropunctata* has recently spread to many corners of the globe.

**Design:** A descriptive case report.

**Results:** A 66-year old woman experienced severe, acute ocular pain and conjunctival irritation within minutes following contact with electrical ant. Irrigation of the eye and systemic analgesics alleviated her symptoms after one hour.

**Conclusions:** With the abundance of electrical ants we are bound to see more cases of ocular injury. These injuries, though painful are short-lived, so reassurance, irrigation and analgesics are adequate.

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## Introduction

Fire ants (genus *Solenopsis*) are invasive ants, well-known for their painful bites. The FDA estimates that more than 5 billion USD is spent annually on medical treatment, damage, and control of fire-ant infested areas. The "electric ant", also known as "the little fire ant", *Wasmannia auropunctata*, is a small (~1.5 mm long), light-golden brown social ant native to Central and South America, that has now spread to parts of Africa, North America, Puerto Rico, Cuba, Pacific islands and Israel [1-3]. This ant is also known for its painful stings.

*Wasmannia auropunctata* was first described more than 150 years ago [4], but its painful venom only about 50 years ago [5]. *Wasmannia auropunctata* appears in the list of the 100 most-problematic invasive alien species worldwide [6]. This small ant is blamed for reducing species diversity, and reducing overall abundance of flying and tree-dwelling insects. For example, on the Galapagos Islands, it eats the hatchlings of tortoises and attacks the eyes and cloacae of the adult tortoises. There is a strong suspicion that a disease which affects dogs, cats, horses and birds called Florida keratopathy is induced by repeated stings of *Wasmannia auropunctata* [7].

The purpose of this communication is to alert clinicians to include an encounter with electric ant in the differential diagnosis of acute, severe ocular pain.

## Case Report

A 66-year-old lady from Haifa was gardening when she experienced an abrupt burning sensation in the back of her right arm. She had scratched the area with the left hand and noted a tiny ant (<2mm in length) that was caught between the thumb and index fingers. Ten minutes later she experienced severe excruciating pain in her left eye, which she described as similar in magnitude to those of labor pain. The pain had started seconds after she inadvertently touched the left eye.

An immediate examination (by one of us- I.P.) was unremarkable, but within 15 minutes conjunctival irritation developed in the medial portion of the left eye (Figure 1). Since the whole picture was suspected to be caused by a fire ant, the eye was flushed with tap water and an oral analgesic was given (dipyrone drops). Subsequently, the pain continued intensely for one hour and gradually subsided thereafter, while the conjunctival irritation disappeared after 12 hours. There were no long-term sequelae.

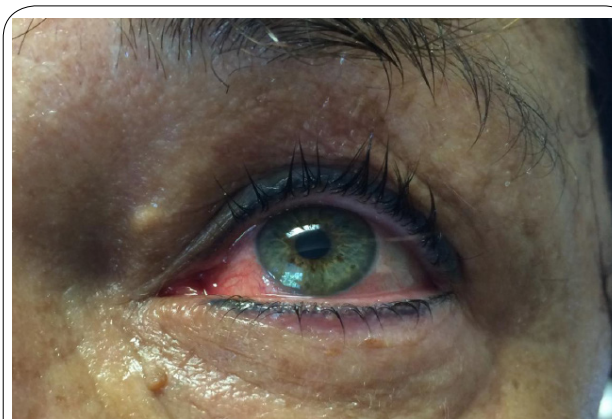


Figure 1: Conjunctival irritation 15 minutes after exposure to *Wasmannia auropunctata*.

## Discussion

Ocular injury caused by insect bites or contact with insect content is a rare, yet occasionally dramatic clinical entity [8-10]. Pain in these cases is comprehensible when, for example, a bee or wasp is the culprit. But how can one explain the severe pain incurred by mere contact with squashed spider contents [8], or fire ant?

Ants (Formicidae) comprise over 13,000 existing species, the majority of which inject or spray secretions from a venom gland. When the venom of the fire ant (*Solenopsis invicta*) was first elucidated more than 45 years ago it appeared to contain 1-5 alkaloids [11]. However, more recent work has shown that in addition to alkaloids it contains 46 different proteins, organized in 4 different groups [12]. The venoms of ants possess paralytic, hemolytic, cytolytic, pro-inflammatory, and insecticidal properties, and may also contain antimicrobial and pain producing substances [13]. The little fire ant,

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*Wasmannia auropunctata*, was found to contain alkylpyrazine in its mandibular glands [14]. This compound acts as both repellent and disabling substance.

The presented case provides strong circumstantial evidence that contact with secretions of *Wasmannia auropunctata* can cause severe ocular pain. Furthermore, the pain was elicited quite rapidly and continued at least until the effect of the analgesic moved in. This pain resembles that reported in welding-arc corneal injuries (photokeratitis).

In conclusion, this case report has two messages: a. the worldwide spread of the “electrical ant” could foster painful ocular injuries; b. provide reassurance that the pain is short-lived.

### Competing Interests

The author declares that he has no competing interests.

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