

Case Report: Ocular Capsaicin Exposure with Chemosis from Jalapeño Peppers

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ABSTRACT

A 42-year-old female presented to an Emergency Department (ED) with the abrupt onset of left eye pain, tearing and eye redness of one-hour duration. Her symptoms were due to ocular toxicity from contact exposure to capsicum, through preparation of Jalapeño peppers.

Keywords: Ocular Toxicity From Jalapeño Peppers, Ocular Capsaicin Exposure

INTRODUCTION

The Jalapeño pepper is a cultivar of the species *Capsicum annuum*. The heat level of peppers is measured in Scoville heat units. Jalapeños tend to be in the several thousand to ten thousand Scoville unit range. By comparison, a bell pepper has zero Scoville units and a ghost pepper is measured at almost a million units. The active heat chemical in Jalapeños peppers is capsicum. Pure capsicum measures 15 million Scoville units. Pepper spray, used for law enforcement purposes, is in the million unit range with oleoresin capsicum as the active chemical.

CASE PRESENTATION

A 42-year-old female presented to an Emergency Department (ED) with the abrupt onset of left eye pain, tearing and eye redness of one-hour duration. On arrival, she noted that she had been taking out her contact lenses when she noted the onset of the pain. She splashed water in her eye prior to coming to the ED with minimal resolution of the pain. On exam, the patient had chemosis of the left eye. Her pain resolved with topical ocular anesthesia. The eye was immediately irrigated with normal saline solution. Her visual acuity was 20/30 with each eye and with both eyes. Intraocular pressure was normal in both eye and there was no afferent pupillary defect. There was no pain with eye movement. The patient's physical exam was otherwise within normal limits. On interactive questioning, the patient recalled that she prior to taking out her contact lenses, she had eaten dinner with her family. When asked

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how she prepared dinner, she noted that she had prepared Jalapeño peppers in the recipe. She cut the peppers with her right hand and held them with her left hand. She wiped off her hands with a paper towel after preparing the peppers. She took out the right contact lens with her right hand and the left contact lens with her left. The left pain occurred immediately in the process of removing the left contact lens. Fluorescein testing should no corneal abrasion. She washed her hands with warm soap and water in the ED. The diagnosis was made of ocular toxicity from Jalapeño peppers. The chemosis had improved and the patient was comfortable. She was discharged with follow up with Ophthalmology the next day, She was advised to discard the contact lenses. She was advised to wear disposable gloves when preparing jalapeño peppers and to wash her hands thoroughly with a paper towel. At telephone follow up at three days, the patient noted that the pain and swelling had completely resolved within five hours of the initial onset of pain. She noted that at Ophthalmology follow up the day after the ED visit, the diagnosis of Jalapeño toxicity was confirmed with no ocular abnormalities noted.

DISCUSSION

The treatment of ocular toxicity from Jalapeño peppers has been informed by research military and law enforcement research on the treatment of pepper spray toxicity. Military and law enforcement pepper spray is in the one million Scoville unit range with oleoresin capsicum as the active chemical. In a study of adult volunteers, five different treatment regimens were tested (water, milk, Maalox, baby shampoo and lidocaine gel) with no difference found in pain relief. Pain and redness tended to subside in about 6 hours regardless of the treatment [1]. Ongoing research is looking to develop a treatment for capsaicin-induced ocular toxicity [2,3].

Jalapeño peppers can cause toxicity when aromatized. Smoke from a Jalapeño grease fire was linked to bronchiolitis obliterans, attesting to the toxic irritating effect of aromatized capsaicin [4].

The internet has conflicting support for the use of milk and baby shampoo after Jalapeño exposure to the eye. However, the study by Barry demonstrated that neither are scientifically effective [1].

Prevention of ocular exposure can be achieved by wearing disposable gloves. It must be noted that capsaicin oils can be persistent. Rinsing of nondisposable rubber gloves may not be sufficient, especially with high Scoville unit peppers. Copious soap and water should be used in cleaning the hands even with the use of gloves. Use of a fork when handling Jalapeños is prudent.

CONCLUSIONS

Jalapeño peppers can cause ocular toxicity, due to the capsicum oleoresin. The ED evaluation includes all of the standard means of eye evaluation. In a study of adult volunteers, five different treatment regimens were tested (water, milk, Maalox, baby shampoo and lidocaine gel) with no difference found in pain relief. Pain and redness tended to subside in about 6 hours regardless of the treatment. Prevention of ocular exposure can be achieved by wearing disposable gloves.

CONFLICT OF INTEREST

There was no funding related to this case report. The authors declare that they have no conflicts of interest.

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