



Severe uvular edema and nasal mucosal necrosis due to *Ecbalium elaterium* (squirting cucumber): An allergic reaction or direct toxic effect?

Kenker Eken, Kerem Ozbek, Canan Kuk Yildirim & Oktay Eray

To cite this article: Kenker Eken, Kerem Ozbek, Canan Kuk Yildirim & Oktay Eray (2008) Severe uvular edema and nasal mucosal necrosis due to *Ecbalium elaterium* (squirting cucumber): An allergic reaction or direct toxic effect?, *Clinical Toxicology*, 46:3, 257-258, DOI: [10.1080/15563650601158834](https://doi.org/10.1080/15563650601158834)

To link to this article: <https://doi.org/10.1080/15563650601158834>



Published online: 20 Jan 2009.



Submit your article to this journal [↗](#)



Article views: 354



Citing articles: 11 View citing articles [↗](#)

CASE REPORT

Severe uvular edema and nasal mucosal necrosis due to *Ecbalium elaterium* (squirting cucumber): An allergic reaction or direct toxic effect?

CENKER EKEN, M.D., KEREM OZBEK, M.D., CANAN KUK YILDIRIM, M.D., and OKTAY ERAY, M.D.

Department of Emergency Medicine, Akdeniz University School of Medicine, Antalya, Turkey

Ecbalium elaterium or squirting cucumber is a plant growing in the Mediterranean region, belong to Cucurbitaceae family. Its juice has been used as an herbal medicine since ancient times because of its cathartic and anti-inflammatory effects. It has been reported to cause upper airway edema, especially after the administration of its undiluted form. It has generally been attributed to allergic reaction. In this case report we aimed to interrogate this anticipation by presenting a case of severe uvular edema and nasal mucosal necrosis after dripping undiluted *Ecbalium elaterium* juice that did not improved by anti-allergic therapies.

Keywords Allergic reaction; *Ecbalium elaterium*; Nasal mucosal necrosis; Toxic effect

Ecbalium elaterium, or squirting cucumber, is a plant that grows in the Mediterranean region belonging to the Cucurbitaceae family. It has a gherkin-like fruit thickly covered by hairs. Its juice has been used as herbal medicine since ancient times because of its cathartic and anti-inflammatory effects. However, there are many case reports demonstrating upper airway edema especially after the administration of the undiluted form. Although the mechanism of this adverse effect is not clear, it has usually been attributed to allergic reactions and sometimes to direct toxic effects. The aim of this case report is to review the possible causes of upper airway edema due to *Ecbalium elaterium*.

A 36-year-old man presented to the emergency department with swelling of his uvula. He stated that he dripped three drops of undiluted juice of *Ecbalium elaterium* intranasally because of chronic sinusitis. Five or six hours after being exposed to *Ecbalium elaterium*, swelling in the uvula and shortness of breath occurred. He referred to a hospital with these symptoms and received unknown intramuscular and intravascular drugs, most likely standard anti-allergic medications. He presented to our emergency department because his symptoms failed to improve. During the initial presentation, his blood pressure was 128/62 mmHg with a pulse rate of 72/min, inspiration rate was 16/min, body temperature was 36°C, and the oxygen rate was 99% detected by pulse-

oximeter. On physical examination he had a severe uvular edema (Fig. 1). There was no other pathologic finding in the systemic evaluation. At this time, 45.5 mg of pheniramin maleate (H₁ receptor blocker), 50 mg of ranitidine (H₂ receptor blocker), and 80 mg of prednisolone were administered intravenously. However, there was no improvement in the uvular edema with this standard anti-allergic treatment. Subsequently, 0.3 mg epinephrine was administered via subcutaneous injection with no response. The patient was then admitted to the hospital. Anterior rhinoscopy performed during his admission revealed multiple necrotic areas in the nasal mucosa which has not been reported in the literature before. After a five-day period, he was discharged without an adverse event.

Elaterium is the juice derived from *Ecbalium elaterium*. The most known active substance of *Ecbalium* is Elaterin. Elaterin is a potent hydragogue cathartic which has a traditional use as a purgative. It causes watery evacuation from the mucosa; therefore, it has also been used for the treatment of pulmonary edema and ascites. The juice of the fruit has been commonly used for the treatment of sinusitis in the Mediterranean region due to its anti-inflammatory effects. Kloutsos et al. (1) reported 42 exposures to elaterium, the largest case series in the literature, and 93% of them had a previous history of allergic reaction. However, there was no control group in their study, and none of the cases in their study and the others in the literature had systemic signs and symptoms of an allergic reaction (2–4). In our case, lack of response to standard anti-allergic treatment and detecting necrosis in the nasal mucosa could not be attributed to allergic reaction. A direct toxic effect should be considered in order to explain these findings. Furthermore, undiluted forms of elaterium are thought to be more toxic than the diluted

Received 20 September 2006; accepted 29 November 2006.

Address correspondence to Cenker Eken, Department of Emergency Medicine, Akdeniz University School of Medicine, Antalya, Turkey. E-mail: cenkereken@akdeniz.edu.tr



Fig. 1. Severe uvular edema due to the undiluted form of *Ecbalium elaterium* juice.

forms as in our case which also may indicate a direct toxic effect. Raikhlin-Eisenkraft B and Bentur Y also suggested direct toxic effects of *Ecbalium elaterium* in their article previously (5). They reported 13 patients presented by edema of the pharynx, dyspnea, drooling, dysphagia, vomiting, conjunctivitis, corneal edema, and erosion after being exposed to *Ecbalium elaterium* and mentioned about the irritative effects of *Ecbalium elaterium* especially with undiluted forms (5). Although elaterium has anti-inflammatory effects (6), it may cause irritation and inflammation in the mucosal membranes. Cucurbitans, one of the substances in elaterium, is a cytotoxic substance with anti-tumoral effects. Elaterin and cucurbitans both may have direct toxic effects. Direct toxic effects of elaterium should be worthwhile to investigate with further studies. Additionally, airway management should have a priority in patients with elaterium exposure instead of anti-allergic treatment.

Acknowledgments

The authors would like to thank the reviewers for their helpful suggestions. The revision details were shown before.

1. Raikhlin-Eisenkraft and Y. Bentur also suggested direct toxic effects of *Ecbalium Elaterium* in their article before (5). They reported 13 patients presented by edema of the pharynx, dyspnea, drooling, dysphagia, vomiting, conjunctivitis, corneal edema, and erosion after being exposed to *Ecbalium Elaterium* and mentioned the irritative effects of *Ecbalium Elaterium* especially with undiluted forms (5). This was added to the discussion section because of the suggestions of the first reviewer.
2. "Direct toxic effects of elaterium should be worthwhile to investigate with further studies," was replaced by "Direct toxic effects of elaterium should be worthwhile to investigate with further studies."

References

1. Kloutsos G, Balatsouras DG, Kaberos AC, Kandiloros D, Ferekidis E, Economou C. Upper airway edema resulting from use of *Ecbalium Elaterium*. *Laryngoscope* 2001; 111:1652–5.
2. Eray O, Tuncok Y, Eray E, Gunerli A, Guven H. Severe uvular angioedema caused by intranasal administration of *Ecbalium Elaterium*. *Vet Hum Toxicol* 1999; 41:376–8.
3. Satar S, Gokel Y, Toprak N, Sebe A. Life-threatening uvular angioedema caused by *Ecbalium Elaterium*. *Eur J Emerg Med* 2001; 8:337–9.
4. Koussidis GA, Mountantonakis S, Petrichou CC. Folk remedies still in use: a case of soft palate and uvular edema due to *Ecbalium Elaterium*. *Int J Clin Pract* 2002; 56:817.
5. Raikhlin-Eisenkraft B, Bentur Y. *Ecbalium Elaterium* (squirting cucumber)—remedy or poison? *J Toxicol Clin Toxicol* 2000; 38(3):305–8.
6. Uslu C, Karasen MR, Sahin F, Taysi S, Akcay F. Effect of extracts of *Ecbalium elaterium* rich, in the rabbit model of rhinosinusitis. *International Journal of Pediatric Otorhinolaryngology* 2006; 70:515–518.