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LETTER TO THE EDITOR

A Rare Reason for Uvular Angioedema: *Ecbalium elaterium*

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Dear Editor:

***Ecbalium elaterium*, a rare cause of uvular angioedema**

Ecbalium elaterium or *squirting cucumber*, is a plant species that belongs to the *Cucurbitaceae* family and grows in Mediterranean region. The root and fruit of this plant have been used in traditional medicine since ancient times. The fruit juice of *E. elaterium* has been used in the Anatolia region for inflammatory diseases like rhinosinusitis because of its potent cathartic, analgesic, and anti-inflammatory effects[1]. However, it may cause allergic, toxic, and systemic adverse reactions in some users. We present a case who developed uvular angioedema after applying a few drops of the fresh fruit juice of *E. elaterium* into his nostrils to cure his chronic rhinosinusitis.

A 36-year-old male patient applied to the emergency service with complaints of burning sensation, sore throat, and difficulty in breathing. It was learned that due to recurrence of his rhinosinusitis in spite of repeated medical treatment, he applied two drops of fresh fruit juice of *E. elaterium* plant into his nostrils without diluting it. His symptoms began in about 10～20 minutes. When applying the same treatment on two prior occasions, he had experienced no similar symptoms. The medical and family histories were unremarkable, and he had no history of drug use. Erythema and edema were observed in uvula and soft palate and other physical examination findings were normal (Fig. 1a). On laboratory examination, complete blood count and blood biochemistry were within normal limits. In the light of the history, physical examination and laboratory findings, *E. elaterium*-induced angioedema was diagnosed for the patient. The patient's symptoms regressed with standard angioedema treatment in the next few hours.

Rhinosinusitis is one of the most common medical problems throughout the world. Long periods of antibiotics, surgical or supportive treatment methods are the usual treatment. However, none of these approaches have been found successful long term[2]. This leads people to search for alternative treatment methods as in our case.

The fruit of *E. elaterium* is ovoid, fleshy, pale green in color, approximately 3 cm in length, and the surface is covered with hairs (Fig. 1b). *Elaterium* is the fluid obtained from the fruit of *E. elaterium*. The most known active component of *elaterium* is elaterin. Elaterin is a cathartic agent with potent hydragogue effect, and for this reason it has been used in traditional medicine. Another component of *elaterium* is *cucurbitacine B* which is a derivative of triperten and acts as an active anti-inflammatory agent[1]. It has been reported that besides chronic rhinosinusitis, *elaterium* is also used in the treatment of diseases considered to be inflammatory like rheumatism and infections[3]. An experimental study conducted by Uslu et al.[4] investigated the anti-inflammatory effect of aqueous extracts of *E. elaterium* used topically in treatment of rhinosinusitis, showing that *E. elaterium* extracts reduce inflammation considerably in rabbits suffering from rhinosinusitis compared with the control group. Elaterin and cucurbitacins may cause allergic reactions, direct toxic reactions or systemic side effects. Uvular angioedema, which is one of the most prevalent adverse reactions, manifests as sore throat, hoarseness, and dyspnea. It may progress and lead to complete airway obstruction if treatment is delayed[5]. Uvular edema may either be an immunoglobulin E (IgE)-mediated allergic reaction or may result from direct toxic effect. Since no reaction developed in earlier uses of undiluted form of *elaterium*, the uvular edema in our case was considered to

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Fig. 1. (a) Erythema and edema on the uvula. (b) The fruit of *Ecbalium elaterium*.

be an IgE-mediated hypersensitivity reaction resulting from earlier sensitizations. In their series with 42 cases where allergic edema developed due to the use of *E. elaterium*, Kloutsos et al.[6] have reported that the edema was most frequently observed in uvula and 39 cases had a history of allergic reaction. The patient reported here had no history of allergy. Eken et al.[7] have reported a case with nasal mucosa necrosis caused by direct toxic effect of *E. elaterium*. One case who developed renal failure after systemic intake of the plant has also been reported in literature[8].

Although the effect of *E. elaterium* on rhinosinusitis has been demonstrated experimentally, care must be taken in using herbal treatments for which therapeutic doses, effects and side effects are not fully understood, since using undiluted forms may cause serious adverse reactions.

REFERENCES

1. Raikhlin-Eisenkraft B, Bentur Y. Ecbalium elaterium (squirting cucumber)--remedy or poison? J Toxicol Clin Toxicol 2000; 38:305-308.
2. Bomer K, Brichta A, Baroody F, Boonlayangoor S, Li X, Naclerio RM. A mouse model of acute bacterial rhinosinusitis. Arch Otolaryngol Head Neck Surg 1998;124:1227-1232.
3. Sezik E, Yeşilada E. Clinical effects of the fruit juice of Ecbalium elaterium in the treatment of sinusitis. J Toxicol Clin Toxicol 1995;33:381-383.
4. Uslu C, Karasen RM, Sahin F, Taysi S, Akcay F. Effect of aqueous extracts of Ecballium elaterium rich, in the rabbit model of rhinosinusitis. Int J Pediatr Otorhinolaryngol 2006;70:515-518.
5. Kuo DC, Barish RA. Isolated uvular angioedema associated with ACE inhibitor use. J Emerg Med 1995;13:327-330.
6. Kloutsos G, Balatsouras DG, Kaberos AC, Kandiloros D, Ferekidis E, Economou C. Upper airway edema resulting from use of Ecballium elaterium. Laryngoscope 2001;111: 1652-1655.
7. Eken C, Ozbek K, Yildirim CK, Eray O. Severe uvular edema and nasal mucosal necrosis due to Ecbalium elaterium (squirting cucumber): an allergic reaction or direct toxic effect? Clin Toxicol (Phila) 2008;46:257-258.
8. Vlachos P, Kanitsakis NN, Kokonas N. Fatal cardiac and renal failure due to Ecbalium elaterium (squirting cucumber) J Toxicol Clin Toxicol 1994;32:737-738.