



## Fatal Cardiac and Renal Failure Due to Ecballium Elaterium (Squirting Cucumber)

Pavlos Vlachos, Nristidis N. Kanitsakis & Nick Kokonas

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## LETTER TO THE EDITOR

### FATAL CARDIAC AND RENAL FAILURE DUE TO *ECBALIUM ELATERIUM* (SQUIRTING CUCUMBER)

To the Editor:

*Ecbalium (Ecballium) elaterium* (EE), known as the wild or squirting cucumber, is a hairy, perennial herbaceous vine of the cucurbitaceae family endemic to the Mediterranean region. All parts of the plant are toxic particularly the gherkin-like green fruits described as ovoid, 3-5 cm long and exploding when ripe. A case of lethal poisoning from an unusual therapeutic application of the fruit is described.

A 54-year-old woman from Crete used the juice of the EE fruit for treatment of a chronic sinusitis. The juice was diluted in warm water and aspirated into the nose with 4-5 aspirations over 36 h. On day 2 she developed redness and edema of the nasal mucosa and facial edema of the cheeks, eyelids and pharynx. On day 3 the edema extended to the larynx resulting in severe dyspnea. On day 4 she developed fever, oliguria and uremia (BUN 90 mg/dL, 32 mM/L). On day 5 her general condition deteriorated further with progressively severe dyspnea, tachycardia and renal insufficiency, with death from cardiac failure on day 6. During the 6 days she was treated with steroids, intravenous fluids, and respiratory and circulatory support. Hemodialysis was refused by the patient and her family. Autopsy permission was not granted.

The juice of EE can cause severe skin irritation, inflammation and edema (1). The older pharmacopoeiae define recovery of about 90 mg elaterium or elaterin from a cucumber with a dose of 3-5 mg as a drastic purgative (2). Larger doses can cause severe vomiting, diarrhea, neurotoxicity, anuria, uremia and cardiorespiratory failure (3).

The systemic toxicity is attributed to the mixtures of alkaloid resins and glycosides contained in several parts of the plant, mainly in the gourd-like fruit, particularly the cucurbitacins or elaterins which are tetracyclic triterpenes (3-5). Similar cucurbitacins and glucosides are also found in *Citrullus colocynthis* or colocynth (bitter apple), a purgative with a wide range of pharmacologic actions (6).

In Greece, the juice of the squirting cucumber is used as a folk medication for multiple diseases including constipation, rheumatic diseases and malignancies. In some areas of Crete it is used for the treatment of sinusitis by nasal aspiration. This may have some rationale since, in mice, the fruit juice of EE has a significant anti-inflammatory effect (4).

The case described is consistent with EE poisoning beginning with local irritation, erythema and edema and followed by systemic toxicity with renal, cardiac and respiratory insufficiency, attributed to absorption of the above ingredients from the nasal mucosa. It records one more victim of the popular misconceptions of the therapeutically magic properties and safety of medicinal plants.

Pavlos Vlachos  
Department of Pediatrics  
Poison Information Center  
Athens, Greece

Nristidis N. Kanitsakis, M.D.  
Nick Kokonas, M.D.  
Department of Internal Medicine  
General Hospital  
Rethemnon, Crete

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