

## Ecballium Elaterium Poisoning in Pediatric Emergency Service: A Case Report

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### Abstract

#### Background

*Ecballium elaterium* is the only species belonging to the genus *Ecballium* of Cucurbitaceae family. It is native to the Mediterranean region. Despite its side effects, *E. elaterium* has still been being used as an alternative treatment agent for sinusitis, cirrhosis, rheumatic diseases and hemorrhoids for its anti-inflammatory and cathartic actions. Herein we discuss a pediatric case showing gastrointestinal side effects after ingesting *E. elaterium*.

**Case Report:** A six-year-old boy admitted to Çukurova University Medical Faculty Pediatric Emergency Department, Turkey, for vomiting one hour after ingesting a green plant which he had tasted to satisfy his curiosity. Physical examination, vital signs and laboratory tests revealed normal. The ingested plant was defined to be *E. elaterium*. Maintenance fluid infusion, 1 mg/kg ranitidine and sucralfate medications were commenced. During the follow-up, the patient developed numbness of the tongue and hyper-salivation, without any signs of uvular edema or other system findings. Further follow-up showed stable vital signs within the normal range with no additional complications. The patient was sent home with the cure and recommendations.

**Discussion:** The plants and herbs that are used as agents of alternative or complementary medicine may as well be accidentally or curiously taken by children leading to unwanted intoxication cases. Pre-encounter actions to prevent such cases are as important as any post-exposure clinical interventions to impede the unwanted consequences. One such measure might be a more intensive public information policy underscoring the fact that plants have the potential to be noxious and may cause serious side effects and even death.

**Key Words:** Case report, Children, Plant, Poisoning.

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## 1- INTRODUCTION

*Ecballium elaterium* is the only species belonging to the genus *Ecballium* of Cucurbitaceae family. It is native to the Mediterranean region. This plant is publicly called as squirting flower or exploding cucumber (also named "cirtatan otu, yabani hıyar, acı hıyar, eşek hıyarı, acı dülek, hıyarcık, cırtlak, acı düvelek, acı kavun and şeytan keleş" in Turkish). Its fruit is 4-5 cm long, green, ovoid in shape and has a bristly surface. As it ripens, its internal pressure reaches up to 6 bars and it squirts its seeds with a velocity of 36 km/h. This process may lead to blindness when eyes are exposed (1). Despite its severe side effects, *E. elaterium* has still been being used as an alternative treatment agent for sinusitis, cirrhosis, rheumatic diseases and hemorrhoids for its anti-inflammatory and cathartic actions (2-5). We report a pediatric case showing gastrointestinal side effects after ingesting *E. elaterium*.

## 2- CASE SERIES REPORT

A six-year-old boy admitted to Çukurova University Medical Faculty Pediatric Emergency Department, Turkey, one hour after ingesting a green plant which he had taken just to taste. About 15 minutes after his ingestion, he had vomited only for once and thrown his gastric contents, which was the chief complaint for his hospital admission. Physical

examination revealed completely normal. His vitals were as follows: body temperature of 36.5 °C, heart rate of 83 bpm, and respiratory rate of 23 per minute and blood pressure of 100/50 mmHg. His parents brought the fruits of the plant that the boy had eaten with them as a sample, which was identified to be *E. elaterium* (**Figure.1**). Maintenance fluid infusion and 1 mg/kg ranitidine + sucralfate medication was started. The National Poison Information Center (NPIC) was contacted and a POISINDEX database search was performed. In accordance with the recommendations by NPIC, the patient was closely monitored for severe gastrointestinal side effects, allergic reactions and bronchospasm, and given supportive medication for at least 24 hours. During the follow-up, the patient developed numbness of the tongue and hyper-salivation, without any signs of uvular edema or other system findings. Hyper-salivation and vomiting resolved in about 2 hours. Laboratory findings were WBC: 9.850/mm<sup>3</sup>; hemoglobin: 11 g/dl; platelets: 404.000/mm<sup>3</sup>; glucose: 99 mg/dl; BUN: 14 mg/dl; Cre: 0.48 mg/dl; Na: 139 mEq/L; K: 4.4 mEq/L; AST: 31 U/L, ALT: 13 U/L, PTT: 13.8 s; aPTT: 33.4 s. His vital signs remained stable and within the normal limits for his age, no additional complications occurred, and he was discharged home with the cure and recommendations.



**Fig.1:** Ecballium Elaterium plant and fruit.

### 3- DISCUSSION

The plants and herbs that are frequently used as agents of alternative or complementary medicine may as well be accidentally or curiously taken by children leading to unwanted intoxication cases. Several cases of allergic reactions due to nasal recruitment of *E. elaterium* have been described in the literature (5-9). In addition, a total of three pediatric cases of ingestion of these fruits have also been reported. Two of these cases, being a 4-year-old boy and a 2.5-year-old girl, had vomited after ingestion and recovered spontaneously without the need of any further treatment. However, the third case, a 10-year-old boy had developed dyspnea and uvula edema, and had been treated with oxygen, steroids, antihistamines and analgesics (10). It has been reported that poisoning with this plant may cause severe vomiting, hematuria, cardiovascular collapse and death, and that its extract, elaterin, may be highly toxigenic with doses of as low as 1 gr<sup>2</sup>. Our case had vomited only for once and developed numbness of the tongue and hyper-salivation that easily resolved after supportive interventions and without any signs of uvular edema or other system findings. To impede the unwanted consequences, pre-encounter actions to prevent such cases are as important as any post-exposure clinical interventions.

### 4- CONCLUSION

To impede the unwanted consequences, pre-encounter actions to prevent such cases are as important as any post-exposure clinical interventions. One such measure might be a more intensive public information policy including educational programs and public awareness ads to highlight the fact that plants may possess toxic potential and may cause serious side effects and even death.

### 5- ABBREVIATIONS

WBC: White blood cell,  
BUN: Blood Urea Nitrogen,  
Cr: Creatinine,  
Na: Sodium,  
K: Potassium,  
AST: Aspartate aminotransferase,  
ALT: Alanine aminotransferase,  
PTT: Partial thromboplastin time,  
aPTT: Activated partial thromboplastin time.

### 6- AUTHOR CONTRIBUTIONS

Study concept and design: SSG; obtaining funding: None; acquisition of the data: SSG; analysis of the data: SSG, ÖTK; drafting of the manuscript: SSG; critical revision of the manuscript: HLY; and approval of final manuscript: SSG ÖTK, HLY.

**7- CONFLICT OF INTEREST:** None.

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