



Open Access

An Upper Airway Obstruction by Dieffenbachia: A Case Report

Mohammed Jamaan Alzahrani^{1*}

¹University of Chile, Clinical Hospital University of Chile, Santiago Chile, Chile

***Corresponding Author:** Mohammed Jamaan Alzahrani, Department of Pediatrics, College of Medicine, Najran University, Najran P.O. Box 1988, Saudi Arabia; Email: pacemaker2020@yahoo.com

Received Date: 10-10-2022; **Accepted Date:** 27-10-2022; **Published Date:** 04-11-2022

Copyright © 2022 by Alzahrani MJ. All rights reserved under CC BY-NC-ND. This is an open access article distributed under the terms of the Creative Commons Attribution License, which provides freedom to read, share, copy and redistribution of material in any of the medium, provided with the original author and source are credited.

Abstract

Background: Dumb cane, or Dieffenbachia, is a tropical decorative house plant belonging to the Araceae family and the Arum class and its colored leaves are appealing to children.

Objective: The rationale of this report is to notify health workers and the community about the danger of such plant poisoning and increase awareness about its toxic effect on humans.

Case Report: A 14-month-old girl presented to the emergency department complaining of a history of cough, difficult breathing, excessive crying, lip swelling and drooling of saliva after ingestion of Dieffenbachia. Upon arrival, she had mild respiratory distress associated with stridor. Her examination showed lip swelling, tongue sore and redness with scattered blisters. These symptoms resolved after a few hours of receiving respiratory support with oxygen therapy, intravenous fluids, intravenous Dexamethasone, racemic epinephrine, oral antihistamines and normal saline rinses.

Conclusion: The community lacks awareness about home plant poisoning. The significance of reporting such cases highlights the need for parents and community awareness to prevent the toxicity of more people, especially youngsters.

Keywords

Child Poisoning; Dieffenbachia; Dumb Cane; Toxic Plants

Alzahrani MJ | Volume 3, Issue 3 (2022) | JCMR-3(3)-066 | Case Report

Citation: Alzahrani MJ. An Upper Airway Obstruction by Dieffenbachia: A Case Report. Jour Clin Med Res. 2022;3(3):1-4.

DOI: <http://dx.doi.org/10.46889/JCMR.2022.3306>

Introduction

Dumb cane, or Dieffenbachia, is a tropical decorative house plant belonging to the Araceae family and the Arum class (Fig. 1) [1]. Because these plants are native to tropical places and are now widely available in the household, they are frequently implicated in accidental exposure and ingestion [2]. Dieffenbachia pincta and Dieffenbachia seguine are the two main species. It is known as the “crying flower” by locals and can be poisonous. The colored leaves, in particular, are appealing to children [3].

Dieffenbachia poisonings can manifest themselves in systemic or local effects in humans and animals. With the chewing of this plant, severe clinical findings such as airway obstruction or respiratory insufficiency might develop, as can milder clinical symptoms such as swelling, burning and discomfort in the tongue and lips [3]. A recent article stated that Dieffenbachia poisoning had been documented in seven cases (3 cases aged between 1 and 3 years, 3 cases aged between 7 and 12 years and 1 case of a 69-year-old adult) [3].

The rationale of this report is to notify health workers and the community about the danger of such plant poisoning and increase awareness about its toxic effect on humans, especially infants and children.



Figure 1: Image showing the dump cane (Dieffenbachia ‘Camille’).

Case Report

A 14-month-old Saudi girl with no chronic disease presented to the emergency department of a tertiary care hospital in the southwest province of Saudi Arabia, with a history of cough, difficult breathing, excessive crying, lip swelling and drooling of saliva immediately after ingestion of a house plant, commonly called dumb cane (*Dieffenbachia*). Her mother removed the plant leaves from her mouth immediately after chewing. Upon arrival to the emergency department, she was irritable and crying but conscious and alert. She had mild respiratory distress associated with stridor. Her vital signs were as follow: pulse=123, respiratory rate=36, temperature=37°C, blood pressure=94/63. Her otolaryngology examination showed lip swelling, tongue sore and redness with scattered blisters. Other systems were free, apart from transmitted sound in the chest. Her initial laboratory investigation results, including complete blood count, serum electrolyte, renal function test and liver function test, were all in the normal range. The venous blood gas showed respiratory alkalosis with PH=7.47, PCO₂=28, HCO₃=25. The chest X-ray was unremarkable. Her treatment included respiratory support with oxygen therapy, Intravenous (IV) fluids, IV Dexamethasone, racemic epinephrine, oral antihistamines, normal saline rinses and she was kept under a cardiac monitor. After a few hours, she became quiet, smiling, with no respiratory distress. The mucosal erythema subsided and mucosal edema completely disappeared, as did the blebs on her tongue. She was given bottle feeding with no sign of pain or vomiting and she was discharged to home in good condition.

Discussion

Dieffenbachia originated from tropical America, the Amazon forest [3]. Tukuna Indians used the stem and roots to make poisonous arrows [3]. Besides its attractive appearance, *Dieffenbachia* grows easily and is tolerant to shade [4]. Therefore, many people keep it for decoration and ornamental purposes [3,4]. *Dieffenbachia*'s ingestion is uncommon, but some literature reported manifestations following its ingestion. The most serious presentation is the respiratory failure [1]. The sap of the plant usually causes a temporary burning sensation, an increase in secretions, erythema, tongue sore and oral swelling [3,4]. The stem and root extract has a narcotic effect and irritates the gastrointestinal tract (causing vomiting and diarrhea) and the kidney [1,5]. On contact with the eye, both result in severe pain, chemosis, blepharospasm, photophobia, lacrimation, corneal abrasion and kerato-conjunctivitis [1,3,4].

The mechanism of toxicity is unidentified. However, researchers found that Raphides (calcium oxalate crystals as the monohydrates and calcium carbonate as aragonite), oxalic acid and protease enzyme (in the idioblasts) are the main active substances [3,4]. These crystals and proteolytic enzymes cause irritation and inflammation on contact with skin or mucous membrane [1,5]. The symptoms usually occur within the first five minutes of contact and

resolve with minimal supportive treatment [1]. The literature lacks a clear guideline of treatment as the studies of dieffenbachia toxicity are scanty.

In our case, the symptoms appeared immediately after ingestion and disappeared after a few hours of supportive treatment. The supportive treatment included respiratory support in the form of oxygen therapy, intravenous fluids, intravenous anti-inflammatory, oral antihistamines, normal saline rinses and kept under cardiac monitoring. The gastrointestinal symptoms of Dieffenbachia toxicity mimic some other plant and herbal toxicity such as *Abrus precatorius*, *Colchium autumnale*, *Jatropha curcas* and *Rhododendron simii* [6]. The community lacks awareness about home plant poisoning. Hence, the significance of reporting such cases highlights the need for parents and community awareness to prevent the toxicity of more people, especially youngsters. We recommend further laboratory and animal studies of house plant toxicity, especially Dieffenbachia, being a popular ornamental house plant. We also recommend highlighting house plant toxicity and first aid support in the press by individuals and governments and formulating a clear treatment guideline for such cases.

Author Contribution

The author Mohammed Alzahrani has the sole responsibility for this case study including: case selection, data collection, literature review, writing the case report, manuscript preparation and submission.

Conflict of Interest

The author declares no conflicts of interest.

References

1. Ataş Berksoy E, Topalakçı E, Bekem Soylu Ö, Çelik T. Accidental poisoning of a child by dieffenbachia. Turkish. J Pediatric Emerg Intensive Care Med. 2018;86-8.
2. Altin G, Sanli A, Erdogan BA, Paksoy M, Aydin S, Altintoprak N. Severe destruction of the upper respiratory structures after brief exposure to a dieffenbachia plant. J Craniofac Surg. 2013;24(3):e245-7.
3. Ummuhan UN, KOCABAŞ A. Dieffenbachia plant poisoning cases and effects on human health. Anat J Botany. 2020;4(1):65-8.
4. Ajuru MG, Nmomo FW, IO E. Toxicological evaluation of Dieffenbachia seguin (Jacq.) Schott (Dumb Cane) on wister albino rats. Research J Food and Nutrition. 2018;2(1):38-43.
5. Adhikari KM. Poisoning due to accidental ingestion of Dieffenbachia plant (Dumb cane). Ind Pediatrics. 2012;49(3):247-8.
6. Farzaei MH, Bayrami Z, Farzaei F, Aneva I, Das SK, Patra JK, et al. Poisoning by medical plants. Arch Iranian Medicine. 2020;23(2):117-27.

Alzahrani MJ | Volume 3, Issue 3 (2022) | JCMR-3(3)-066 | Case Report

Citation: Alzahrani MJ. An Upper Airway Obstruction by Dieffenbachia: A Case Report. Jour Clin Med Res. 2022;3(3):1-4.

DOI: <http://dx.doi.org/10.46889/JCMR.2022.3306>