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Solanine Toxicity in a Man Following Consumption of Devil's Fig-A Case Report

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ABSTRACT: Native to tropical Africa, Solanum torvum, also known as the Devil's Fig is a tiny fruit that grows on a shrub-like plant. The term "turkey berry" was coined due to its widespread use as a food source in Turkey. Antioxidants, vitamins, and minerals like calcium, vitamin C, and plant-based iron are abundant in these berries. Here is the example of a 38-year-old man who came to the ER with turkey berry poisoning after consuming them several times in the evening and the morning after. He complained of blurred vision, two quick episodes of vomiting, and four episodes of loose stools. The patient had no history of contacting ill patients or eating stale food. Electrolyte replenishers and drugs that prevent acetylcholine buildup were used to treat his symptoms.

KEYWORDS: Solanine Toxicity; Devil's FigPoisoning; Acetyl-Cholinesterase inhibitor.

I. INTRODUCTION:

The Devil's Fig, or Solanum torvum, is a small, round fruit that is native to tropical Africa and grows on a shrub-like plant. In South America, the Caribbean, and Southeast Asia, it is also frequently found. It goes by a number of other names as well, such as shoo-shoo bush, prickly nightshade, and devil's fig [1]. The fact that turkeys prefer to eat this fruit as part of their diet is where the term "turkey berry" originates [2]. Turkey berries come in two varieties: one with a reddish stem and the other with a yellowish one [2]. They have numerous applications, including horticulture, medicine, and food processing [3]. These berries are packed with vitamins, minerals, and antioxidants, including calcium, plant-based iron, and vitamin C. Additionally, it is thought to have anti-inflammatory, anti-diabetic, and anti-cancer properties that lessen the side effects of anti-cancer medications [1].

II. CASE PRESENTATION:

A 38-year-old male patient complained of having 3 episodes of loose stools and 3 unexpected episodes of vomiting when he arrived at the emergency room. There was no concomitant hematemesis or hemochezia symptoms. The patient also reported experiencing mild vertigo and photophobia. He did not exhibit any symptoms of fever and had no recent travel history. The patient admitted to eating a curry with turkey berries as the main ingredient the night before and that morning after being questioned about his eating habits. The patient made no mention of ever eating food from outdoors or interacting with sick people.

During a physical examination, his vital signs were found to be within normal range- pulse rate: 74 bpm (60-100 bpm), blood pressure: 128/74 mmHg (90/60 - 130/80 mmHg), respiratory rate: 17 cpm(12-18cpm), and temperature: 98.5˚F (97.7-99 F). His circulatory, neurological, gastrointestinal, and respiratory systems were all confirmed to be normal upon systemic assessment. His pupils were discovered to be constricted upon ocular examination, indicating the presence of miosis.The patient was found to be completely conscious, oriented to time, place, and people, and to have an intact mental state. To look into the patient's health, blood was taken and sent for a liver function test (LFT), renal function test (RFT), and completeblood count (CBC). An electrocardiogram (ECG) was also carried out.

The blood uric acid level was borderline high: 8.7 mg/dL (4.0-8.5 mg/dL), but all other metrics in the results are within the usual range. After consuming turkey berries, the patient was suspected of suffering solanine toxicity.

The patient was treated with injections of prochlorperazine mesylate (5 mg IM) and ondansetron (8 mg IV STAT; Emeset). Ofloxacin 200mg IV BD(Oflox), Tab. Dimenhydrinate 40mg plus Cinnarizine 20mg (Sturgeon plus) BD, Inj. Pantoprazole 40mg (Pan) STAT, and Cap. Racecadotril 100mg (Redotil) BD. Intravenous infusion (IVF) of Ringer Lactate (RL) and Dextrose Normal Saline (DNS) at a rate of 100 ml/hour was used to rehydrate the patient.

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The patient was sent to the ward following his initial care in the emergency department. With the exception of dizziness, the patient's symptoms were resolved. Within three hours of being in, the patient and his attendants asked to be discharged from the hospital because he quickly recovered and was back to his regular state. The patient requested to be released at their own risk, with a prescription for two days of Tab. Nexpro RD (a mixture of domperidone and esomeprazole) and Cap. Redotil, to be taken twice daily. At the time of release, the patient's condition was stable.

III. DISCUSSION:

Around the world, Solanum torvum is a plant that is frequently used as a food ingredient and in traditional medicine. Nevertheless, it has natural toxins that can harm people, just like many other plants. Toxicology is thought to be caused by solanaceous steroidal glycoalkaloids, such as solanine, which block acetylcholinesterase and indirectly activate cholinergic receptors [4, 5]. The toxicity of turkey berries varies with dosage [6]. The symptoms emerged when it was consumed in excess or metabolized improperly. These berries are usually cooked in a curry before consumption, which may cause the glycoalkaloids to become unstable and prone to deterioration [4]. But in this instance, the berries still exhibit toxicity even after boiling, suggesting that the glycoalkaloids might maintain their stability in specific situations.

A rare type of food poisoning, solanum torvum poisoning can affect the musculoskeletal, neurological, and gastrointestinal systems. Berries that are subjected to environmental stressors like abrupt temperature changes are more likely to exhibit symptoms [4]. Nausea, vomiting, loose stools, ataxia, cranial nerve deficits, slurred speech, vertigo, hypertension, blurred vision, disorientation, paralysis, and respiratory failure are just a few of the symptoms that can range from minor to fatal [7].

In Jamaica, the first documented instance of poisoning from turkey berry eating occurred in 1867 [4]. Turkey berry poisoning instances were then documented in Toronto in 2003, Florida in 2004, and, New York in 2006 [4]. In this instance, the patient suffered from photophobia, loose feces, nausea, and vomiting. The patient most likely only had a little quantity of turkey berries because their toxicity is dose-dependent. Along with bradycardia, high blood pressure, and respiratory system consequences that required admission to the critical care unit, the patient in the case described by Zulqarnain S et al. also had miosis [7].

In this instance, the patient had miosis but no respiratory failure, bradycardia, or hypertension. The buildup of acetylcholine at synapses and neuromuscular junctions due to inhibition of acetylcholinesterase and stimulation of cholinergic receptors may cause the symptoms [8]. Thus, in addition to other symptomatic therapies, the patient was treated with the antiemetic medication Tab. Dimenhydrinate 40 mg, which suppresses acetylcholine. Electrolyte DNS and RL were infused intravenously (IVF) to rehydrate and restore electrolytes. Prochlorperazine mesylate 5 mg IM STAT and Ondansetron 8 mg IV STAT were used to treat nausea and vomiting. A 40 mg injection of pantoprazole was given as a single dose to reduce the possibility of gastrointestinal upset. To treat diarrhea, 100 mg of Cap. Racecadotril was administered twice day.

This instance highlights how important it is to get a thorough medical history, including dietary information, in order to avoid misdiagnosis, ensure prompt treatment, and stop complications that could result in serious morbidity and death. It also emphasized the importance of choosing foods and amounts carefully, particularly while eating berries, since some berries can interact with drugs and have cumulative effects [5]. It is important to take precautions to prevent these kinds of reactions.

IV. CONCLUSION:

This case report details a case of turkey berry poisoning that was treated symptomatically with drugs that prevent the buildup of acetylcholine. It is essential to recognize and disclose such incidents in order to conduct research and create suitable management plans for later use.

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