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Datura Stramonium Poisoning: Two Case Reports

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ABSTRACT

Introduction: Datura stramonium is a wild plant, which grows in almost every region of Turkey and is found in the native flora. D. stramonium is used as a herbal medicine for asthma, bronchitis, eczema, and hemorrhoid treatment. Because of D. stramonium's hallucinative and euphoric effects, it can be abused, particularly by drug addicts. Excessive oral intake may cause anticholinergic toxicity. In the case of a very high dose intake, it may result in coma. In this study, we have discussed two patients who presented to the emergency department of our hospital with anticholinergic findings and were diagnosed with D. stramonium intoxication.

Case Report: Two patients presented to the emergency department of our hospital with signs and symptoms of anticholinergic poisoning. Two cases were also fell complaints with symptomatic treatment. Both the patients were admitted to the toxicology department and were followed-up for 2 days. The complaints regressed the next day, and the both the patients were discharged with complete recovery.

Conclusion: Our study reporting the present cases shows that D. stramonium, which is used for therapeutic purposes, also causes severe intoxication. Therefore, wild plant poisoning should be considered for every patient presenting to the emergency department with unexplained anticholinergic symptoms and complaints.

Keywords: Datura stramonium, anticholinergic, poisoning

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Introduction

Datura stramonium is a wild plant, which grows in almost every region of Turkey and is found in the native flora. To the native population, it is known by the four common names as follows: Thornapple, Jimson weed, Tatula, and Devil's snare. D. stramonium is used as a herbal medicine in the treatment of asthma, bronchitis, eczema, and hemorrhoids; it is also used as an ointment against muscle and joint pain. This plant contains atropine and scopolamine; therefore, it is also used in the pharmaceutical industry (1-3). Because of D. stramonium's hallucinative and euphoric effects, it can be abused, particularly by drug addicts. Excessive oral intake may cause anticholinergic toxicity. It can lead to clinical manifestations such as mydriasis, tachycardia, dry skin, flushing, urinary retention, irritability, agitation, hallucinations, and seizures. It may result in coma if taken at a very high dose (4-6). In this study, we discuss two patients who presented to the emergency department of our hospital with anticholinergic findings and were diagnosed with D. stramonium intoxication.

Case Reports

Case 1. A 64-year-old male patient ingested D. stramonium, which he had found in his garden. He presented to the emergency department of our hospital upon experiencing exhaustion, nausea, dryness in the mouth, and difficulty in passing urine. On physical examination, the patient looked agitated, and he was indulging in a meaningless conversation in a confused state. His tongue was dry and pulse was tachycardic. Other system examinations such as liver function tests, renal function tests, cardiac troponin test, electrolyte test, and complete blood cell count were normal. The urine toxicology test was normal. Si-

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FIGURE 1. Datura stramonium eaten by patients seen in the picture above

nus tachycardia was determined on electrocardiography. Central nervous system imaging, namely computed tomography and magnetic resonance imaging, were performed, which did not reveal any pathology. The patient was admitted to the toxicology department and was followed-up for 2 days. Only palliative care was provided to this patient. Physiological saline (0.9%) and proton pump inhibitors were administered. The complaints regressed the next day, and the patient was discharged with complete recovery. Written informed consent was obtained from the patient.

Case 2. A 67-year-old male patient ingested D. stramonium on the advice of a relative because he was experiencing burning sensations upon urination and frequent urination for a couple of days. He presented to the emergency room of our hospital upon experiencing exhaustion, nausea, dryness of the mouth, and difficulty in passing urine. On physical examination, the patient looked agitated. His tongue was dry and pulse was tachycardic. Other system examinations such as liver function tests, renal function tests, cardiac troponin test, electrolyte test, and complete blood cell count were normal. The urine toxicology test was normal. Sinus tachycardia was observed on electrocardiography. The patient was admitted to the toxicology department and was followed-up for 1 day. The urinary output was observed to decrease during the follow-up. Physiological saline (0.9%) and proton pump inhibitors were administered. The complaints regressed the next day, and the patient was discharged with complete recovery. Written informed consent was obtained from the patient.

Discussion

D. stramonium *plant* was found for the first time in 1676 in the Virginia state of the United States of USA as a result of accidental use (7). Literature reports that D. stramonium, which has an origin dating to ancient times, has caused epidemic deaths during the course of history. D. stramonium is 20–100 cm tall, has an erect stem with 7–14 branches, and produces black seeds and green fruits of 3–4 cm (Figure 1). Each fruit contains approximately 100 black seeds, and seed contains 0.1 mg of atropine (8). Both of our patients stated that they had ingested these black color seeds. The substance that leads to anticholinergic poisoning is the belladonna alkaloids they contain, which are hyoscyamine, atropine, and scopolamine (8). These alkaloids competitively block the acetylcholine receptors in the parasympathetic nervous system and the central and peripheral muscarinic acetylcholine receptors and cause the signs and symptoms of poisoning. The clinical signs begin within 30–60 min of oral intake. The first symptoms include hallucinations, dryness of mucous membranes, thirst, dilated pupils, and visual and speech disorders. In the further stages, symptoms including tachycardia, urinary retention, and ileus occur. Rarely, hyperthermia, respiratory arrest, and convulsions may be observed. Moreover, death due to central nervous system depression, circulatory collapse and hypotension may occur (7). In one of our patients, disorder of consciousness, lethargy, and agitation were in the foreground, whereas in the other patient, urinary retention and dryness of the mouth were the dominant symptoms. In the following period, severe clinical conditions such as coma, respiratory depression, or seizures did not occur. The treatment of anticholinergic toxicity is usually palliative care. Gastric decompression and active coal should be given according to the classic poisoning algorithm. The vital signs of the patients should be stabilized. If there is agitation or seizure, it may be treated with benzodiazepines. Should respiratory failure or coma ensue, mechanical ventilation support may be required. Physostigmine therapy is recommended in severe clinical states such as malignant dysrhythmias, coma, respiratory failure requiring mechanical ventilation, and uncontrolled hyperthermia. It is recommended to intravenously administer physostigmine 0.5–2 mg. Cardiac monitoring, monitoring of vital signs, and frequent neurological evaluation are important in the evaluation of patients (9–10). Our patients were only treated with palliative treatment and hydration. Both patients were discharged after 1-2 days of follow-up because they did not have a severe clinical state.

Conclusion

Our study reporting the present cases shows that D. stramonium, which is used for therapeutic purposes, also causes severe intoxications. Therefore, wild plant poisoning should be considered for every patient presenting to the emergency department with unexplained anticholinergic symptoms and complaints.

Informed Consent: Written informed consent was obtained from patient who participated in this case.

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