

Two Patients of 113 and 77 Years Old of Atropa Belladonna Poisoning Case Report

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Abstract

Atropa belladonna is a deadly poisonous plant. Its roots, leaves and fruits contain alkaloids: atropine, hyoscyamine and scopolamine. Atropa belladonna poisoning is a serious condition and should be considered in the presence of anticholinergic toxidroma. Treatment is mainly symptomatic, including gastrointestinal decontamination with activated charcoal. In severe cases, physostigmine can be used as an antidote. Atropa Belladonna poisoning should be considered in a patient with symptoms of anticholinergic poisoning.

Keywords: Atropa belladonna, Poisoning, Emergency medicine.

Introduction

Atropa Belladonna is a poisonous plant species in the solanaceae family¹. It grows wild in our provinces such as the Black Sea Region, Kırklareli, Bolu, Balıkesir, Adana, Hatay and Osmaniye². Among the people, it is also known by names such as beautiful horseradish, bell pepper, nightshade, death bell, bear strawberry, wolfberry, yidin, black grape, devil cherry/cherry, and wild tobacco². The poisonous components of this plant are substances called alkaloids. The most important substances that make up the total alkaloid are; hyoscyamine, atropine, scopolamine, apoatropine, simetropium and belladonnin^{3,4}. However, the essential substance is Atropine, constituting 95% of the total alkaloid⁵. Atropa Belladonna poisoning occurs as a result of consumption, inhalation, or skin contact of this plant and can be potentially life-threatening. Atropa Belladonna causes poisoning with its anticholinergic effect. Anticholinergic toxic syndrome (ATS) affects the central and peripheral nervous systems together and presents with findings such as delirium, hallucinations, tachycardia, choreoathetoid movements, mydriasis, and dry skin^{1,5,6}.

Case Report

Two female patients, one 113 years old and the other 77 years old, presented to the emergency department with complaints of tachycardia, dry skin, mydriasis, confusion, abnormal arm movements and speech disorder. The patients and their relatives stated that they used some of the plants grown in their gardens while cooking. It was learned that the same complaints started in both patients after eating the plant. When they brought the plant they used, it was understood that the plant was atropa belladonna, which is known among the people as beautiful herb and has an anticholinergic effect. Atropa Belladonna poisoning was considered due to the presence of anticholinergic symptoms/findings in the patients and the history of ingestion of belladonna.

Both patients had only hypertension in their history. On physical examination, patients had pale skin and rapid breathing. Eye examinations revealed mydriasis and decreased light reflex. The patients expressed symptoms such as dryness of the skin, redness and burning sensation in the mouth, which are signs of anticholinergic effects. In the examination of the patients, choreoathetoid movements

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(uncontrollable abnormal arm movements) were also detected. The blood pressure of the patients was measured at normal values (130/90 mmHg, 135/95 mmHg). Pulse rates were tachycardic (110/minute, 105/minute). Their body temperature increased to 38 C°. No emergency pathology was detected in the brain tomography and diffusion MR imaging of the patients. No pathology was detected in the laboratory tests of the patients. Sinus tachycardia was detected in ECGs. The patients were diagnosed with Atropa Belladonna poisoning and emergency treatment was initiated. Patients were decontaminated with activated charcoal, intravenous fluid replacement was provided, and peripheral cooling was applied. The use of physostigmine was considered to reverse the anticholinergic effects, but since physostigmine was not available, symptomatic supportive treatment, peripheral cooling, close hemodynamic monitoring, neurological and vital signs monitoring, airway patency/maintenance, respiratory and circulatory support (hydration) and conservative treatment were used and benzodiazepine was administered for agitation. During this period, patients were admitted to the ward. During hospitalization and treatment, the symptoms and findings of the patients improved. The patients were discharged with recovery.

Discussion

Kati et al. in his study, it was stated that the most common causes of acute poisoning in geriatric patients were drug poisoning in 54%, carbon monoxide poisoning in 27%, pesticide poisoning in 12.7%, food (plant) poisoning in 4.8% and corrosive substance poisoning in 1.6%⁷.

Since impaired consciousness, which can be seen in geriatric poisoning cases, can be confused with acute cerebrovascular events, taking a detailed anamnesis as well as clinical examination and imaging methods will be life-saving. Especially in geriatric patients presenting with clouding of consciousness, hallucinations, meaningless body movements and speech findings, poisoning due to plants should be considered in the differential diagnosis¹.

Atropa belladonna poisoning is a rare but potentially life-threatening condition⁸. This poisoning is usually caused by accidentally consuming the plant as a result of not recognizing the plant. This case report is important for understanding the symptoms and treatment approaches associated with Atropa Belladonna poisoning. The plant Atropa Belladonna contains poisonous compounds called tropane alkaloids. These compounds may cause various symptoms by affecting the central nervous system and cardiovascular system due to their anticholinergic effects^{5, 6, 9}. As seen in the case report, symptoms such as clouding of consciousness, tachycardia, mydriasis and dry mouth/skin appeared in the patients. These symptoms are characteristic signs of Atropa Belladonna poisoning. The

diagnosis is supported by the patient's history, physical examination findings, and laboratory tests. Treatment should begin quickly. Bowel sounds should be checked before administration of activated charcoal because of the risk of ileus. Activated charcoal can be used for decontamination and intravenous (IV) fluid replacement should be provided^{1, 5, 6, 9}. The antidote of anticholinergic toxidromes (poisonings) is Physostigmine¹⁰. As a general approach, it is used in cases where the patient's clinical condition cannot be controlled (such as hyperthermia, delirium or tachycardia) together with physostigmine, benzodiazepine administration and hydration. Physostigmine dose; It is administered as 0.5-2 mg IV (administered in 5 minutes) in adults and 20 µg / kg (0.02 mg / kg) in children^{1, 5, 6}.

When we examine the emergency and supportive measures in the treatment of Atropa Belladonna poisoning in the literature; The first stage is stabilization of the airway, respiratory system, circulatory system and vital signs. If the patient is agitated, hallucinating, and has seizures, benzodiazepines can be used for supportive treatment. If hyperthermia is detected, peripheral cooling methods, antipyretic agents and benzodiazepines can be used. Urinary retention may develop in the patient presenting with anticholinergic toxidroma. If urinary retention is detected in patients, a Foley catheter should be inserted. Rhabdomyolysis can be seen in patients and attention should be paid^{1, 5, 6}.

Conclusion

Atropa Belladonna poisoning is a condition that can have serious consequences. Atropa Belladonna poisoning may cause anticholinergic effects on the central nervous system and cardiovascular system. Early diagnosis and appropriate treatment are important to protect the health of patients. It is vital for healthcare professionals to have knowledge about the symptoms, signs, diagnosis, treatment and prognosis of poisonings and to be able to define them accurately. Raising awareness of the public about recognizing and not consuming poisonous plants will help prevent such poisoning cases. Awareness of health workers and the public on this issue will contribute to reducing poisoning cases and achieving better results.

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