

A Case of Forgotten Poisoning in a Patient Presenting with Speech Disorder

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Abstract

Anticholinergic poisoning is one of the most common causes of poisoning in the emergency department. Beautiful hawthorn (*atropa belladonna*), which is found in our country, is one of the plants that can cause anticholinergic syndrome. It is important in the differential diagnosis in cases progressing with general status disorder and loss of consciousness and psychotic findings. The onset of anticholinergic intoxication varies depending on the toxin and occurs within one to two hours following oral ingestion. The diagnosis of anticholinergic poisoning is based on clinical findings. Anticholinergic poisoning is easily diagnosed when a history of exposure to an anticholinergic substance is obtained and the patient shows altered mental status, delirium or hallucinations. However, in cases with no history and unknown exposure, the diagnosis of anticholinergic intoxication is considered when clinical signs and symptoms caused by mental status disorder and anticholinergic effects are detected on physical examination.

A 75-year-old woman was admitted to the emergency department with complaints of slurred speech, altered consciousness and facial shifting that started about 2 hours ago. On physical examination, the patient was incooperative and disoriented, GCS:12 eyes were spontaneously open, obeying orders but making unintelligible sounds, nuchal rigidity was suspiciously positive, bilateral babinski reflex was positive. On admission vital signs were blood pressure 144/72 mmHg, pulse 98/min, temperature 37 °C, SO₂ 94%, fingerstick blood glucose 104 mg/dl and ECG was in normal sinus rhythm. There were no acute pathologic findings on both brain CT and brain MR imaging. In the control physical examination, both pupils were mydriatic, IR -/- and the patient had dry mouth. According to the anamnesis obtained from another relative of the patient, it was learned that they ate spinach in the evening and speech disorder started afterwards. The patient was diagnosed with anticholinergic intoxication considering that the spinach eaten by the patient with clinical findings might have been mixed with the beautiful hawthorn weed.

In this case report, we aimed to emphasize the importance of detailing the anamnesis and the necessity of a complete systemic examination in patients presenting with confusion and speech disorder.

Keywords: *Atropa belladonna*, Poisoning, Emergency service

Introduction

Anticholinergic intoxication is one of the causes of intoxication in the emergency department. They may present with symptoms including general status disorder, altered consciousness, confusion, mydriasis, dry and hot skin, urinary retention, tachycardia, decreased and complete disappearance of bowel sounds^{1,2}. The diagnosis of anticholinergic intoxication is based on clinical findings. Anticholinergic intoxication can be easily diagnosed when a history showing exposure to an anticholinergic substance is obtained and the patient shows mental status change, delirium or hallucinations; however, in cases with no history and unknown exposure, the diagnosis of anticholinergic intoxication is considered when mental status disorder and clinical signs and symptoms are detected on physical examination³. Gastric lavage, activated charcoal, NaHCO₃, supportive symptomatic treatment and physostigmine are administered in patients presenting within the first 1 hour.

With this case report, we aimed to draw attention to beautiful hawthorn intoxication which has become a classic in textbooks but is not in the first place among the

preliminary diagnoses in the clinic.

Case Presentation

A 75-year-old woman was admitted to the emergency department with complaints of slurred speech, altered consciousness and facial shifting that started about 2 hours ago. According to the anamnesis taken from the patient's relatives, it was learned that she had spoken normally with her son about 5 hours before admission but could not speak with her daughter about 2 hours ago. According to the anamnesis taken from the relatives, the patient did not have any loss of sensory power. The patient had a known history of diabetes, hypertension and colon cancer. He was operated 4.5 years ago for colon cancer. On physical examination, the patient was incooperative and disoriented, GCS:12, obeyed commands but made unintelligible sounds, pupil and light reflexes examination were normal, nuchal rigidity was suspiciously positive, bilateral babinski reflex was positive. On admission vital values were blood pressure 144/72 mmHg, pulse 98/min, temperature 37 °C, SO₂ 94%, fingerstick blood glucose 104 mg/dl and ECG was in normal sinus rhythm. Due to the sudden onset of speech disorder, the

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patient underwent brain CT scan for central pathology, but there was no acute pathologic finding. There were findings of atrophy and periventricular leukomalacia. Laboratory parameters were pH:7.44, pCO₂:41, HCO₃:27.4, lactate:1.5, WBC:7.54, Hb:11.2, plt:238, BUN:23, cre:0.95, GFR:59, AST:16, ALT:13, Na:138, K:4.5, Cl:103, CRP:4.9, INR:1. Brain MRI was ordered with a prediagnosis of acute ischemic LVH, but there were no acute pathologic findings on MRI. Although brain CT and brain MRI examinations were normal, a clinical evaluation was requested from the neurology consultant and neurology consultant stated that she did not think of a structural neurological pathology in the patient. Urgent neurologic treatment was not recommended. When structural pathologies of the brain are excluded, anamnesis was deepened with a control physical examination. In the control physical examination, both pupils were mydriatic, IR -/- and the patient had dry mouth. According to the anamnesis obtained from another relative of the patient, it was learned that they ate spinach in the evening and speech disorder started afterwards. It was thought that the spinach eaten by the patient with clinical findings might have been mixed with the beautiful hawthorn weed and anticholinergic intoxication was considered and the patient was consulted with the anesthesia clinic and transferred to the intensive care unit. The patient was symptomatically followed up for 3 days in the intensive care unit and was discharged with complete recovery.

Discussion

With the increase in the consumption of some green leafy plants in the winter season in our country, it causes us to encounter various intoxications as a result of the consumption of some plants mixed among these plants without being cleaned. One of these mixed plants is *Atropa Belladonna* (beautiful heliotrope). Its fruits and leaves contain high levels of atropine, scopolamine and hyoscyamine alkaloids. When consumed, the alkaloids in this plant block postganglionic muscarinic receptors and muscarinic receptors in the central nervous system, resulting in anticholinergic intoxication. Anticholinergic intoxication is characterized by peripheral effects in addition to changes in consciousness, hallucinations and loss of recent memory as a result of central effects. Among these effects, mydriasis, dryness in mucous membranes, high fever, tachycardia, dry skin, ileus and urinary retention are among the causes⁴. In patients presenting with altered consciousness, fingertip blood glucose should be checked to exclude the diagnosis of hypoglycemia leading to altered consciousness⁵. In the initial evaluation of our patient, fingertip blood glucose was checked. Patients usually present with symptoms that occur within one to two hours following oral ingestion. In our patient, he presented to us with symptoms occurring approximately two hours after ingestion of food. The diagnosis of the patient is made on the basis of clinical signs and symptoms caused by antimuscarinic effects⁶. Since our patient had complaints of altered consciousness and facial asymmetry, we first performed brain CT and brain MRI to

rule out central pathology. Since there were no pathological findings in radiological examinations, we diagnosed anticholinergic intoxication based on detailed anamnesis and physical examination. Anticholinergic intoxications are related with drugs and substances that prevent the binding of acetylcholine to muscarinic receptors. Therefore, the use of such drugs should be questioned in the patient's medical history for differential diagnosis. Antihistamines (diphenhydramine, hydroxyzine, promethazine), antiparkinsonian drugs (benztropine, trihexyphenidyl), antipsychotics (phenothiazines, butyrophenones), belladonna alkaloids and their analogues (atropine, hyocyanin, ipratropium), mydriatics (cyclopentolate, tropicamide)⁷. Most patients respond well to supportive treatment in anticholinergic intoxications. Some patients who do not respond may require the use of physostigmine as antidote treatment. Physostigmine inhibits anticholinesterase reversibly by crossing the blood brain barrier⁸. Our patient responded to symptomatic supportive treatment and was discharged.

Conclusion

Considering the importance of a detailed anamnesis in patients with symptoms of anticholinergic toxic syndrome, detailed questions should be asked about vegetable consumption and medications used, especially in winter months. This may guide the differential diagnosis. Furthermore, intensive care follow-up is necessary for closer monitoring of central and peripheral clinical effects that may occur during anticholinergic poisoning.

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