

# Datura Stramonium Intoxication: Report of a Case with Psychiatric Symptoms

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## ABSTRACT

Datura stramonium intoxication: report of a case with psychiatric symptoms

Delirium is a common neuropsychiatric syndrome and is often caused by metabolic, systemic disorders and drug or poison intoxication. Though hallucinations, delusions and agitation are sometimes present, the symptoms of delirium are clinically distinct from those induced by other psychiatric disorders. Datura stramonium is a hallucinogenic plant which is a member of belladonna alkaloids. The toxic effects of Datura stramonium most often include visual and auditory hallucinations, confusion and agitation. We report a patient who was poisoned with Datura stramonium and presented to the emergency department with psychiatric symptoms.

**Key words:** Intoxication, psychosis, delirium

## ÖZET

Datura stramonium zehirlenmesi: Psikiyatrik belirtilerle başvuran olgu

Deliryum, pek çok sistemik hastalık ve metabolizma bozukluklarının yanı sıra, ilaç ya da maddelerin toksik etkisi sonucu da oluşabilir. Hastada sanılar, varsanılar ve ajitasyon gibi birçok psikiyatrik belirti ve bulgu tespit edilebileceğinden, sıklıkla diğer psikiyatrik bozukluklarla karışabilir. Datura stramonium belladonna alkaloid ailesinin bir üyesi olan hallüsinojenik bir bitkidir ve yüksek doz alınması durumunda görsel ve işitsel hallüsinasyonlar, ajitasyon ve deliryuma sebep olabilir. Biz bu olgu sunumunda, acil servise "akut psikoz ve demans" ön tanılarıyla sevk edilen ve Datura stramonium alımına bağlı olduğu tespit edilen bir deliryum vakasını tartışmayı amaçladık.

**Anahtar kelimeler:** Zehirlenme, psikoz, deliryum

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## INTRODUCTION

Delirium, disorders of consciousness and mental state are frequently seen in emergency departments. Systematic approach is needed for the proper management of diagnosis and treatment. Delirium can be described as a neuropsychiatric syndrome characterized by impairment of consciousness, orientation, memory, thought, perception and behavioral domains due to direct or indirect physiological or structural changes of brain (1). Delirium may occur as consequences of several systemic diseases, metabolic disorders, toxic effects of drugs or substances, operations, epileptic seizures and infections. As many psychiatric symptoms and signs such as bizarre behaviors, hallucinations and agitation can be observed in the patient, delirium can often be confused with other psychiatric disorders (2,3).

Datura stramonium is a yearly plant which contains

alkaloids such as hyocyamine, atropine and scopolamine, 20-100 cm. high, having a vertical trunk, 7-14 branches, 3-4 cm. green fruits with brown-black seeds and flowers which are in large white pipe shape. It may cause anticholinergic symptoms and signs due to its contents (4). Cases of intoxication are important causes of mortality and morbidity among emergency department admissions; however, cases of intoxication due to plants are rare. In this paper, we aimed to present a case who was admitted to emergency department with psychiatric symptoms and found to be intoxicated with Datura stramonium after history, clinical follow-up and investigations.

## CASE

Patient was 65 years old and living with her children and was taken to another medical facility due to blurred speech, restlessness, not knowing her relatives and

environment, speaking herself and bizarre behaviors. Her physical examination at that facility was as follows: arterial blood pressure (TA) 140/85 mmHg, pulse 135/min, body temperature 37.7°C, pupillas were isochoric and dilated, otherwise normal examination. She was referred to emergency department of our hospital with preliminary diagnosis of “acute psychosis and dementia”. She was alert but partially cooperative and her orientation to place, time and person was impaired. In examination she was hallucinated and was speaking meaninglessly; her psychomotor restlessness was of note. In her electrocardiographic examination, heart rate was 112/min. and consistent with sinus tachycardia. Rest of the examination, complete blood count and biochemical parameters were found within normal limits. When her history was taken in detail, it was learned that her symptoms started after eating plants she collected from her garden, there was no history of an organic or psychiatric disorder or any continuous or excessive drug use. Findings were consistent with anticholinergic syndrome. Intoxication due to consumption of a plant having anticholinergic activity was diagnosed when her anticholinergic symptoms and signs and history were evaluated together. Patient’s relatives were required to bring the plant (Figure 1) which might have caused this clinical picture. It was understood that the plant was “*Datura stramonium*”. Patient was monitored and taken into observation and supportive treatment was started. She was discharged with recovery after her signs returned to normal at 12-13<sup>th</sup> hour of her follow-up.



**Figure 1: *Datura stramonium***

## DISCUSSION

*Datura stramonium* is known as “büyüotu, boruçiçeği, can çiçeği, kokarot, kakhaha çiçeği, patlıcan çiçeği, sehharotu, sihirbazotu, şeytan elması” (Turkish names of the plants) among public. It is generally used as a herbal medicine unconsciously and is widely used as a narcotic or to treat asthma, diarrhea or gastrointestinal disorders (4). It is a member of belladonna family which main member is atropine and if taken at high doses, it may cause tachycardia, mydriasis, flushing, restlessness, perception disorders and agitation which is caused by atropine. Symptoms start 30 minutes after taking orally (5).

A group of drugs or substances which prevents acetylcholine from binding muscarinic receptors may cause anticholinergic syndrome (6). These drugs include antipsychotics, tricyclic antidepressants (TCA), antihistamines, carbamazepine, atropine and scopolamine (7). Additionally, *Datura stramonium* and *Herba Belladonnae* of which leaves are consumed as tea and used to treat gastrointestinal problems and hemorrhoid due to their antispasmodic effects and used out of control by cigarettes prepared from their leaves to treat asthma and bronchitis are among causes of anticholinergic syndrome. Blurred vision, palpitation, urinary retention, dry mouth, ileus, flushing, dysrhythmia, auditory and visual hallucinations and convulsions can be seen after its use (5). There were anticholinergic signs such as fever, pupillary dilatation, delirium and tachycardia in our case.

Medical treatment in cases which intoxication is suspected is providing an open airway, respiration and circulation, supportive measures and antidote treatment where needed. Intoxication was not thought in the hospital where the patient was first admitted and gastric lavage and active coal were not administered because 12 hours passed before she was admitted to our hospital. Monitoring and supportive treatment were administered.

Treatment of anticholinergic intoxication is mainly supportive and its specific antidote is physostigmine. Physostigmine passes blood-brain barrier actively and reversibly inhibits cholinesterase. Most of the patients can be safely treated without administering physostigmine. However, if there is tachydysrhythmia

causing hemodynamic impairment and severe agitation threatening himself or others, coma, convulsion, severe dyskinesia and respiratory depression then physostigmine use is recommended. If patient is severely agitated then benzodiazepines can be used for sedation (6). Symptoms were not so severe at the time of admission in our patient and her symptoms and signs improved during follow-up, there was no need to use benzodiazepines or physostigmine.

Delirium is a complicated condition due to variable symptoms, signs and clinical courses and presence of several risk and etiological factors and advanced age is

considered as an important predisposing factor. Delirium is thought to be linked to general senescence or dementia or symptoms of acute psychotic disorder, although these factors make diagnosis more difficult, acute onset, absence of other psychotic symptoms and signs, absence of history of dementia and ingestion of the plant before the disease helped to diagnose.

In conclusion, in delirium cases who were admitted to emergency services, etiology should be investigated in detail and it should be kept in mind that over-the-counter herbal drugs and plants used in alternative medicine may cause psychotic symptoms.

## REFERENCES

1. Mattoo SK, Grover S, Gupta N. Delirium in general practice. *Indian J Med Res* 2010; 131:387-398.
2. Meagher DJ. Delirium: optimising management. *BMJ* 2001; 322:144-149.
3. Mihanovic M, Bodor D, Kezic S, Restek-Petrovic B, Silic A. Differential diagnosis of psychotropic side effects and symptoms and signs of psychiatric disorders. *Psychiatr Danub* 2009; 21:570-574.
4. Köse R, Şahin ÖÖ, Abay E. Datura stramonium zehirlenmesine bağlı deliryum: Bir olgu. *Anadolu Psikiyatri Dergisi* 2008; 9:54-57 (Article in Turkish).
5. Spina SP, Taddei A. Teenagers with Jimson weed (*Datura stramonium*) poisoning. *CJEM* 2007; 9:467-468.
6. Burns MJ, Linden CH, Gaudins A, Brown RM, Fletcher KE. A comparison of physostigmine and benzodiazepines for the treatment of anticholinergic poisoning. *Ann Emerg Med* 2000; 35:374-381.
7. Attard A, Ranjith G, Taylor D. Delirium and its treatment. *CNS Drugs* 2008; 22:631-644.