

# Wernicke Afazisi Benzeri Semptomlar ile Prezente Olan Datura Stramonium Zehirlenmesi: Olgu Sunumu

## Datura Stramonium Poisoning Case with Wernicke Aphasia-Like Symptoms: Case Report

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### ÖZ

*Daturastramonium, içeriğindeki atropin, skopolamin ve hiyosiyamin gibi toksik alkaloidler nedeni ile antikolinergik zehirlenmesine sebep olabilen halüsinojenik bir bitkidir. Ülkemizin doğal bitki örtüsünde yaygın olup, alternatif tıp ve ilaç endüstrisinde de kullanılmaktadır. Bu yazıda ani gelişen anlamsız konuşma yakınması ile acil servisimize başvuran ve Daturastramonium'a bağlı zehirlenme tanısı alan 48 yaşındaki bayan olgu sunulmuştur.*

**Anahtar Kelimeler:** Datura stramonium, antikolinergik, zehirlenme

### ABSTRACT

Datura stramonium (DS), is a hallucinogenic plant which has an anticholinergic toxicity due to the contents of toxic alkaloids, such as atropine, hyoscyamine and scopolamine. DS, found widely in natural flora of our country and used in alternative medicines and pharmaceutical industry. In this case report, we presented an 48-year-old woman who admitted to the emergency department with the acute symptoms of meaningless conversations and diagnosed datura stramonium poisoning.

**Keywords:** Datura stramonium, anticholinergic, intoxication

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## INTRODUCTION

*Datura stramonium* (DS) is a wild growing herb of belladonna alkaloid that is endemic in our country (1,2).

High doses of DS may cause anticholinergic toxicity due to contents of toxic substances like atropine, scopolamine, and hyoscyamine (2). The plant is 20-100 cm high with 7-14 branches, having 3-4 cm green toothed leaves that contain brown-black seeds with trumpet shaped flowers in a variety of colors (3).



**Figure 1.** *Datura Stramonium* plant and its seeds

DS has been used to treat patients with asthma, acne, eczema, hemorrhoid, and to relieve local pains as alternative remedies, and in pharmaceutical industry as well (4). Abuse of the plant for its hallucinogenic and euphoric effects have been known (5). Consuming at high doses may lead to mydriasis, tachycardia, dry skin, flushing, urinary retention, anxiety, agitation, hallucinations (visual and auditory), seizures, coma and death (1, 2).

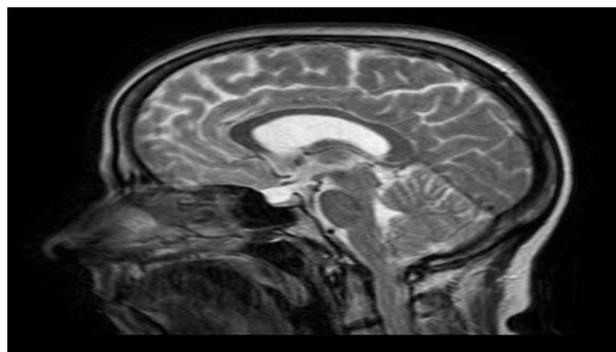
In this paper, we aimed to report a case who was admitted to emergency department with acute onset speech impairment and diagnosed with DS poisoning after the clinical assessment.

## CASE REPORT

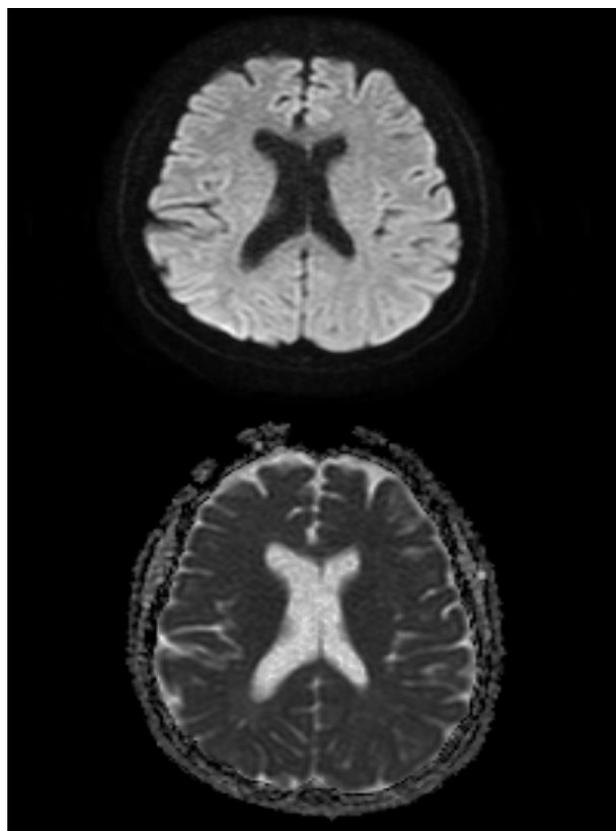
A 48 year-old woman with no history of medical complaints referred to the emergency department by her relatives with the symptoms of speech impairment for 2-3 hours. Vital signs were stable including blood pressure of 110/80 mm Hg, pulse rate 80 beats/min, respiratory rate 18 breaths/min, SpO<sub>2</sub> 98% and temperature 37.1°C were noted. She was awake, her pupils were normoisocoric and bilaterally reactive to light. No abnormal findings were observed in the examination of cranial nerves, reflexes, motor and cerebellar system. She had fluent speech with phonemic and semantic

paraphasias and difficulties in choosing the right words for the conversation. Additionally, object-naming and repeating were also impaired.

Laboratory tests, cardiac enzymes, arterial blood gas, urine analysis, blood level of ethanol and electrocardiography (ECG) were normal. Her relatives denied any medical/surgical history, tobacco, alcohol or drug use. Cranial and diffusion-weighted magnetic resonance imaging (MRI) revealed normal findings and her complaints were resolved within 24 hours.



**Figure 2.** No evidence of ischemia on the T2 sagittal MRI section



**Figure 3-4.** No evidence of ischemia on axial diffusion MRI and ADC sections

She was diagnosed with Wernicke aphasia due to transient ischemic attack. Acetylsalicylic acid (100 mg/day) and isotonic 0.9% Sodium Chloride solution (1000cc/day) were used for the treatment. Carotid and vertebral artery Doppler ultrasonography (USG) and Echocardiogram were normal.

After 3 days, in her control visit, she reported that her complaints had started after she ingested a handful of seeds (nearly 100-150 seeds) of a plant named "tatula", which her mother used for her hemorrhoid complaints. She described that she accidentally added this plant instead of black cumin in yoghurt and did not realize. The plant that she brought along with, was identified as *Datura stramonium*.

### DISCUSSION

*Datura stramonium* (DS) is a wild, 50-200 cm high herb with trumpet-like white flowers; four toothed leaves contain 10-14 black seeds (1, 2). It has known as a drug in alternative medicine which has a beneficial role for the complaints of asthma, bronchitis, acne, eczema, and hemorrhoid (3, 4). Despite the significant role in the pharmaceutical industry, DS has been reported as a potential drug of abuse due to the hallucinogenic and euphoric effects (5).

Anticholinergic intoxication may occur when high doses of toxic alkaloids such as atropine, scopolamine and hyoscyamine in the plant are taken (1, 2). Symptoms of toxication begin within 30-60 minutes after oral ingestion of the plant (2). It has been reported that 100 seeds contain about 6 mg atropine and over 10 milligrams may have a fatal effect (3). In our case, the patient consumed 100-1500 seeds mistakenly in yoghurt instead of black cumin. The symptoms of DS intoxication may include blurred vision, speech impairment, tachycardia, dry mouth, pupillary dilation, flushing, sweating, agitation, hallucinations, urinary retention and ileus. At high doses, it may lead to convulsions, coma and death (1,2,6).

Treatment of anticholinergic intoxication is supportive that involves gastric lavage, activated charcoal for gastric decontamination (1 mg/kg, oral) (6). In severe cases, central and peripheral cholinesterase inhibitor, physostigmine (0.5-2

mg/kg in adult, 0.02 mg/kg in children, IV) may be administered. Its effect start within 5-15 minutes and can repeat in one hour, if necessary (6,7). The patient must be kept under observation until symptoms are completely free.

Typical signs and symptoms that may suggest anticholinergic intoxication due to *Datura stramonium* were not observed in our case. Major findings in neurological examination characterised by disturbances in comprehending, repeating, and naming the words with fluent speech and paraphasic errors (both phonemic and semantic), have suggested Wernicke's (sensorial) aphasia. Recovery of speech impairment in 24 hours and absence of any lesion on cranial and diffusion-weighted MRI suggested transient ischemic attack (TIA) as a preliminary diagnosis. Accordingly, treatment was initiated with an antiagregant (acetylsalicylic acid 100 mg/day) and fluids (1000 cc, 0.9% isotonic sodium chloride, NaCl).

Despite delirium, toxic encephalopathy and coma with focal neurological signs due to DS poisoning have been discussed in the literature, no case with Wernicke's aphasia-like speech disturbance has been reported to date (1, 8, 9).

In conclusion, acute onset of impaired comprehension and speech like Wernicke's (sensorial) aphasia may suggest *Datura stramonium* intoxication. Clinicians should be aware of this phenomenon and detailed clinical evaluation would provide more clues for the correct diagnosis.

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