

Chinese Lantern (Physalis Alkekengi) Intoxication: Case Report

Gelin Otu (Physalis Alkekengi) İntoksikasyonu

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ABSTRACT Physalis alkekengi, aka Chinese lantern or ground cherry, is consumed as an herbal remedy or cooked in meals in Turkey, as well as in some other countries. Physalis alkekengi is a member of Papaveraceae family. It is native to Europe, central Asia and Japan. Physalis alkekengi is known to have antioxidant, antitussive, mucolytic and sedative properties local population in Turkey also use this plant for treating urinary tract infections, and pain from kidney stones, arthritis and rheumatism. Various plants have been reported to cause intoxications, which results in central nervous system excitation and convulsions. We present three cases which presented to our emergency department with neurological symptoms following consumption of physalis alkekengi.

Key Words: Seizures; poisoning; physalis

ÖZET Gelin otu bitkisi olarak bilinen Physalis alkekengi gerek ülkemizde gerekse diğer ülkelerde hem herbal olarak hem de yemek şeklinde sıkça tüketilmektedir. Physalis alkekengi bitkisi gelincikgiller familyasının örnek bitkisidir. Bitkinin anavatanı Avrupa, Orta Asya ve Japonya'dır. Physalis alkekengi'nin, antioksidan, antitusif, mukolitik, sedatif özelliklere sahip olduğu bilinmektedir. Türkiye'de yöresel olarak; idrar yolu enfeksiyonları, böbrek taşları, artrit, romatizmal ağrılarda kullanılmaktadır. Çeşitli bitkilerin santral sinir sistemi eksitasyonu ve konvülsiyonla seyreden intoksikasyonlara neden olduğu bildirilmiştir. Biz acil servisimize Physalis alkekengi yedikten sonra nörolojik şikâyetlerle başvuran 3 olgumuzu sunmak istedik.

Anahtar Kelimeler: Nöbetler; zehirlenme; physalis

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Physalis alkekengi is known to have antioxidant, antitussive, mucolytic and sedative properties as an herbal remedy. It is consumed in salads or cooked in meals in Turkey. We present three cases which presented with neurological symptoms following consumption of physalis alkekengi.

CASE REPORTS

CASES 1 AND 2

A 72-year-old male patient (Patient #1), complaining of seizures, and his 66 year old wife (Patient #2), complaining of nausea, vomiting and numbness in extremities, were brought into the emergency department (ED) by

relatives. History for patient #1 revealed generalized tonic-clonic seizure activity that lasted three minutes and urinary incontinence. His medical history included diabetes mellitus and hypertension, he denied history of seizure. Patient #2 stated she experienced nausea following dinner, and vomited five times afterwards with no hematemesis noted. She also experienced numbness, first occurred in upper extremities, then involved lower extremities. She had no motor weakness. Her medical history included subclinical hypothyroidism and atherosclerotic heart disease. Both patients consumed physalis alkekengi in dinner and their symptoms started one hour afterwards. Physical exam for patient #1 revealed mildly ill, fully alert, oriented and cooperative patient with blood pressure of 170/110 mmHg, pulse 88 bpm. Rest of his physical exam was normal with no lateralized sensory nor motor deficit. Physical exam for patient #2 revealed fully alert, oriented and cooperative patient with blood pressure of 150/100 mmHg, pulse 79 bpm, diffuse abdominal tenderness, with no rebound nor defense noted. Her neurologic exam revealed no sensory nor motor deficit, and the rest of the systems were evaluated as normal. Electrocardiograms (EKG), complete blood count (CBC) and biochemical panels for both patients were normal. Patient #1 was consulted to neurology department and was observed in the ED for 8 hours. Both patients were discharged after 8 hours with instructions and neurology follow-up for patient #1.

CASE 3

A 56-year-old female patient presented to our ED complaining of nausea, vomiting, dizziness and loss of balance. Patient history revealed consumption of raw physalis alkekengi as salad, which caused nausea an hour afterward. Patient vomited twice at home. Patient experienced dizziness and had hard time focusing and was not able to walk without assistance into the ED. Her previous medical history was unremarkable. Her physical exam revealed fully alert, oriented and cooperative patient with blood pressure of 130/100 mmHg, pulse 78 bpm, diffuse abdominal tenderness, with no rebound nor defense noted. Neurologic exam revealed

no sensory nor motor deficit. However, she presented with bilateral ataxia when she was walked. Rest of her system exams as well as her EKGs, CBC and biochemical panels were normal. The patient was placed on the observation unit and provided a supportive therapy. Patient was discharged from the ED, with neurology follow-up, after her symptoms eased and ataxia resolved.

DISCUSSION

Use of plant derivatives and alternative medicine has increased in the developing world within the last 20 years. Side effects and toxicologic emergencies related to consumption of these remedies also increased during the same period.¹ Physalis alkekengi is a member of Papaveraceae family. It is native to Europe, central Asia and Japan. It is a herbaceous perennial plant which blooms and grows up to 60 centimeters over the spring and then dies back every winter. It typically grows in the prairie, in crop fields, on the road side and in the gardens. The plants is sometimes sold in the farmers market. It is cooked or added in the salads. It is usually consumed for antioxidant, antitussive, mucolytic and sedative properties.² Local population in Turkey also use this plant for treating urinary tract infections, and pain from kidney stones, arthritis and rheumatism. Inappropriate uses or uses at toxic levels of herbal remedies result in various complications, including allergic reactions, hepatic failure, hepatitis, colitis, chronic diarrhea, hemolytic anemia, nephritis, renal fibrosis, convulsions, hypotension, arrhythmias, sedation, fluid and electrolyte imbalances, and photosensitization.³⁻⁶ Literature search concluded cases of intoxications resulting in CNS excitation and convulsion after consuming such plants as eucalyptus, limonium lilacinum, valerian (*Valeriana officinalis*), tansy (*Tanacetum vulgare*) and rosemary (*Rosmarinus officinalis*).⁷ Various side effects have also been reported regarding use of essential oils in herbal therapies such as aromatherapy or phytotherapy. Essential oils, such as camphor, thujone, pulegone, cineole, pinocamphone, fenchone, and sabinylacetate are formed of bicyclic ketones and has epileptogenic properties as shown in EEGs.⁸ The-

re has not been a case of intoxication related to *Physalis alkekengi*, except for some antioxidant side effects reported in veterinary journals. Montaserti et al. showed *Physalis alkekengi* alcoholic extract can produce significant decrease in implantation sites, weight and number of neonates.⁹ Following physical examination and laboratory studies, we had not detected any disorder in our patients that might have caused their complaints. Chemical analysis shows *Physalis alkekengi* extract is composed of physalin, citric acid, vitamin C, zeaxanthin and betacryptoxanthin ester sor carotenoid esters, and several other molecules.^{10,11} One or more of those molecules could have triggered the neurologic symptoms in our patients. Pathophysiology of epilepsy is not clearly known.

Disorders in ion transmission or abnormal neurotransmitter synthesis that may cause inefficient inhibitory neurotransmitters or excessive excitatory neurotransmitters might have caused this condition. Also, it has been reported in recent studies that calyces of this plant has ingredients with inhibitory effect on releasing nitric oxide from macrophages.¹² We think of this potential cause for our patient to develop seizure.

CONCLUSION

In conclusion, for convulsions without clear causative effects, acute or chronic intoxications related to the consumption of plant derivatives should be considered, and detailed patient history related to plant intoxication should be obtained.

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