

Case Report

A Social Media-Induced Cyanide Poisoning

Sosyal Medya Kaynaklı Bir Siyanür Zehirlenmesi

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Abstract

Fruits such as apples, cherries, peaches, pears and plums are members of the Rosaceae family and are among the most consumed fruits. Although they provide important health benefits to humans, their seeds contain amygdalin, a potential toxin. When the nuclei are broken down by crushing, cyanogenic glycosides interact with endogenous enzymes, causing the formation of hydrogen cyanide. Technological developments and increasing internet use have opened the door to a lot of information for us. Computer and internet usage is generally at very high levels in the young population. In many social platforms, erroneous information in the field of health ranges from unnecessary tips to dangerous claims. In this case, we aimed to show the vital importance of early diagnosis and treatment in a patient who using information learned from the internet attempted suicide with 200 apple seeds.

Keywords: Emergency medicine; poisoning; cyanide; social media

Öz

Elma, kiraz, şeftali, armut ve erik gibi meyveler Rosaceae familyasının üyeleri olup en çok tüketilen meyveler arasındadır. İnsanlara önemli sağlık yararları sağlamalarına rağmen tohumları potansiyel bir toksin olan amigdalin içerir. Çekirdekler ezilerek parçalandığında, siyanojenik glikozitler endojen enzimlerle etkileşime girerek hidrojen siyanür oluşumuna neden olur. Teknolojik gelişmeler ve artan internet kullanımı bizlere birçok bilginin kapısını açmıştır. Bilgisayar ve internet kullanımı genel olarak genç nüfusta oldukça yüksek düzeydedir. Pek çok sosyal platformda sağlık alanındaki hatalı bilgiler, gereksiz tüyolardan tehlikeli iddialara kadar çeşitlilik göstermektedir. Bu olguda internetten öğrenilen bilgilerle 200 elma çekirdeği ile intihar girişiminde bulunan bir hastada erken tanı ve tedavinin hayati önemini göstermeyi amaçladık.

Anahtar Kelimeler: Acil tıp; zehirlenme; siyanür; sosyal medya

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INTRODUCTION

Fruits such as apple, cherry, peaches, pears and plums are a member of the Rosaceae family and are one of the most consumed fruits. Although it provides significant health benefits to humans, the seeds contain amygdalin, a potential toxin. Cyanogenic glycosides such as amygdaline are naturally found in more than 2500 plant species. When the nuclei break down through crushing, cyanogenic glycosides interact with endogenous enzymes (B-Glucosidases and A-hydroxynitrilases) and cause hydrogen cyanide formation (1). As a result of this, anxiety, headache, dizziness and confusion may also occur in the process of loss of consciousness, hypotension, bradycardia, paralysis, coma and even death. Similarly, many cyanide poisonings due to almond and apricot seeds have been reported (2,3). Technological developments and increasing internet use have opened the door to information. Especially in individuals between the ages of 16-74, the use of computers and internet in the young population is very high (4). In many social platforms, erroneous information in the field of health ranges from unnecessary tips to dangerous claims (5). In this case, we aimed to show the vital importance of early diagnosis and treatment in a patient who attempted suicide with 200 apple seeds with information obtained from social platforms on the internet.

CASE REPORT

A 26-year-old man applied to the emergency department with new-onset nausea, vomiting and dizziness. His complaints started 3 hours before applying to the hospital after consuming 200 apple seeds crushed and mixed in an energy drink. The patient was using lithium on a regular basis due to known bipolar disorder and had intermittent hospitalizations due to his illness. The patient stated that he tried to commit suicide by using 200 apple seeds after seeing suicide attempts resulting in death with 150-175 apple seeds on the internet. In the first arrival of the patient, the pulse of the patient: 51 beats/min, blood pressure: 90/65 mmHg, saturation value: 94 % and no fever; In the physical examination, neurological, respiratory, abdominal and skin system examinations were normal. The electrocardiogram was consistent with sinus bradycardia rhythm (Figure-1). Laboratory tests of the patient revealed Hemoglobin: 13.1 g/dL, Platelet: 189.000/uL, K: 4.5 mmol/L, Na: 140 mmol/L, AST: 23U/L, ALT: 9U/L, Creatinine: 0.9 mg/dL, CRP: 4mg/L, blood gas pH: 7.392, HCO₃: 25 mmol/L, COHB: 9.3, METHB: 0.1, LAC: 1.05. Because of the amygdalin contained in the apple seeds and the presence of bradycardia and hypotension in the patient, gastric lavage was performed rapidly considering the possibility of cyanide intoxication. Apple seed pieces were detected in the gastric lavage aspirate

(Figure-2). Activated charcoal was given after lavage. The patient was taken to the intensive care unit for close follow-up because of cyanide intoxication due to apple seeds. In the patient who was considered to have cyanide intoxication, 5 g of hydroxycobalamin was performed as intra venous (iv) infusion once a day for 3 days to provide cyanide excretion. Meanwhile, iv hydration support was continued. Metoclopramide HCl was applied as iv. infusion in 100 ml of 0.9% NaCl solution for occasional nausea and vomiting. There was no need for positive inotropes during the intensive care unit follow-up. On the first 3 days, the patient was bradycardic (51-59-58 beats/min) and moderately hypotensive (90/50-85/60-95/55 mmHg), but on the 4th day, the pulse rate was normocardic (75 beats/min) and blood pressure was normotensive (110/75 mmHg). The psychiatry clinic was consulted after his vital values improved and followed a stable course. Since he had no suicidal ideation and clinical and vital values were stable, psychiatry outpatient clinic control was recommended, and he was discharged.

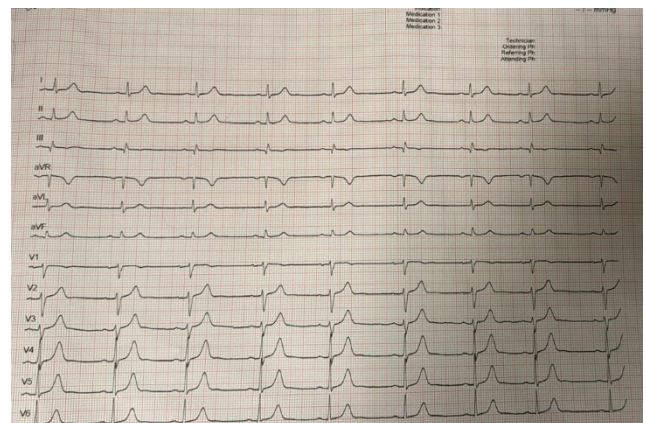


Figure-1: The image of the patient's first ECG



Figure-2: The image of the aspirate during gastric lavage.

DISCUSSION

We report a case with cardiovascular symptoms of cyanide poisoning due to apple seeds. In this case, we aimed to emphasize that easy access to all the right and wrong information on the internet can have bad consequences, that we should listen carefully to the information given by the patient, especially in patients with psychiatric background, and that starting early treatment with a good anamnesis and physical examination can be lifesaving. History and clinical findings are very important in the diagnosis of cyanide poisoning. It is obvious that most of the time we do not have time to wait for blood cyanide level or other laboratory results. In these cases, emergency physicians should rapidly evaluate the process with the clinical findings and anamnesis obtained and start treatment immediately (6).

The negative effects of social media are at the forefront in some suicidal attempts. Especially in the World Health Organization's report on suicides, it was emphasized that social media is responsible for suicides (7). Today, with the rapid development of technology and its use in every field, especially the widespread use of the internet and all communication devices, people can have all information quickly (4,5). In a study conducted in the USA, it was mentioned that more than 25% of the information researched on the internet in the field of health is the knowledge and

experiences of individuals and there is no scientific data (5). Similarly, in our case, our patient attempted suicide by obtaining cyanide from apple seeds with the data obtained from the internet. In a worldwide study, it was observed that the 4th most common cause of death between the ages of 15-29 was suicide attempt and males were admitted 2.3 times more frequently (7). In addition, it has been reported in many studies that psychiatric disorders are an important factor in suicide attempts (8-10). The fact that our case was a 26-year-old male with bipolar disorder is similar to the literature.

Even if it is a food consumed in daily life, its excess or other parts such as seeds can threaten human life. Unexpected situations may arise as a result of excessive or improper use of substances found in nature, which have many antioxidant properties and benefits. In a study, it was reported that shyanide poisoning can cause vasoconstriction in coronary and pulmonary vessels, and conditions such as bradycardia, pulmonary edema and cardiogenic shock may develop. In the same study, it was mentioned that hypotension and cardiac blocks may be observed in severe intoxication or advanced clinical conditions (1-3,6). The mainstay of treatment is 100% oxygen, cardiac and pulmonary support, full-time fluid infusion and basic antidote therapy. The importance of giving 100% O₂ if necessary, after ABC assessment has been emphasized. Specific antidote treatment is recommended to be started as soon as possible. It was mentioned that cyanide antidote kits prepared for this purpose and containing amyl nitrite, sodium nitrite and sodium thiosulfate; after opening the amyl nitrite ampoule and having the patient smell it for 30 seconds, 10 cc of 3% 300 mg sodium nitrite should be given iv at a rate of 2.5-5 cc/min, and then 50 ml of 25% 12.5 g sodium thiosulfate should be performed. Again, in this study, it was emphasized that hydroxocobalamin had a low potential for side effects and 5 grams (70 mg/kg dose) were infused over 30 minutes (6). The effect of hydroxycobalamin on hypotension and methemoglobinemia is lower than other antidotes. Similarly, in our case, our patient was hypotensive and bradycardic at the initial presentation and during the course of treatment. We consider that the effect of these clinical conditions was prevented by the substitution of the hydroxy group in hydroxycobalamin with cyanide to form nontoxic cyanocobalamin (Vitamin B12) and other medications.

Although symptoms such as nausea and vomiting are observed in many diseases, there is also the possibility of an underlying serious problem (1-3). In line with the information in the literature, although apple is a very beneficial food in terms of health, excessive consumption of the seed, as in our case, led to intoxication and created a situation that could result in death.

Again, we believe that detailed anamnesis and physical examination in our case provided the opportunity to detect the symptoms and signs that may occur after cyanide poisoning and to provide early intervention.

CONCLUSION

Today, inaccurate and unscientific information can be easily accessed through social media. It should be kept in mind that people with a psychiatric history may be prone to suicide attempts. In addition to the excessive consumption of the foods we consume in daily life, cases of suicidal attempts with these foods also come to emergency services. As Paracelsus said, every substance is poison should not be forgotten. In addition, as physicians, we should remember that we are responsible for taking careful anamnesis from each patient and providing treatment in accordance with the literature, and that early recognition and treatment of the signs and symptoms of cyanide toxicity, which is a rare suicidal intervention as in this case, is vital for a successful clinical outcome.

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