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Zayıflama amacıyla altın çilek meyve özü hapı kullanan 14 yaşında obez hastada gelişen bir idiyopatik ventriküler taşikardi olgusu

A case of idiopathic ventricular tachycardia developed in a 14-year-old obese patient who used golden berry fruit extract pills for weight loss

Dr. Hakkı Şimşek, Dr. Adnan Doğan,# Dr. Musa Şahin, Dr. Hasan Ali Gümrükçüoğlu

Department of Cardiology, Yüzüncü Yıl **University, Faculty of Medicine, Van;**
 # Department of Cardiology, Dumlupınar **University, Faculty of Medicine,** Kütahya

Özet – Birçok çalışmada obezitenin kardiyak aritmi riskinde artış ile ilişkili olduğu gösterilmiştir. Çağımızda obezitenin yaygınlaşması ile birlikte kilo kontrolü amacıyla kullanılan gıda, bitki ve ilaçlara olan ilgi artmıştır. On dört yaşında bir kız yaklaşık bir saat önce başlayan çarpıntı şikâyeti ile başvurdu. Kan basıncı 110/70 olup pariferik nabızları mevcut idi. Hastanın 10 gün boyunca 3x1 altın çilek meyve özünden oluşan haplardan aldığı öğrenildi. On iki derivasyonlu elektrokardiyografisinde (EKG) sürekli olmayan ventrikül taşikardisi (VT) vardı. Amiodaron infüzyonu ile sinüs ritmine döndürüldü. Transtorasik ekokardiyografi ve kardiyak manyetik rezonans (MR) görüntülemeleri normal olarak değerlendirildi. VT etiyolojisini saptamak ve tedavisi için önerilen elektrofizyolojik inceleme, hasta kabul etmediği için yapılamadı. İki yıllık takip boyunca hastanın beden kütle indeksinde (BKİ) azalma olmamasına rağmen çarpıntı şikâyetinin tekrarlamaması ve aralıklarla yapılan ritim Holter incelemesinde ventrikül aritmisi saptanmamasından dolayı, VT'nin obeziteden ziyade altın çilek hapı kullanımından kaynaklanmış olabileceğini düşündük.

Summary– Several studies have determined an association between obesity and increased risk of cardiac arrhythmia. Currently, due to the increased frequency of obesity, food-, plant-, and drug-based therapies for weight loss have gained great attention. A 14-year-old female patient presented with complaints of palpitation of one-hour onset. Blood pressure was 110/70 mmHg and peripheral pulses were present. She had been using golden berry extract pills three times a day for 10 days. Electrocardiograms showed nonsustained monomorphic ventricular tachycardia (VT). Echocardiographic examination and cardiac magnetic resonance imaging (MRI) were normal. She returned to sinus rhythm following amiodarone infusion. She refused electrophysiologic study, which plays a vital role in the diagnosis and establishment of the appropriate therapy. Although there was no decrease in body mass index (BMI) of the patient during the two-year follow-up, and she had no complaint or evidence of VT on intermittent rhythm, we have thought that VT might be stem from golden berry extract use, rather than obesity.

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Address of correspondence: Dr. Hakkı Şimşek. Kazım Karabekir Cad., Araştırma Hastanesi, Kardiyoloji Servisi, 65100 Van.
Phone +90 432 - 215 04 73 e-posta: dr.hsimsek@hotmail.com

Abbreviations:

AF *Atrial fibrillation*
BMI *Body mass index*
EKG *Electrocardiography*
ECO *Echocardiography*
MR *Magnetic resonance*
VES *Ventricular extrasystoles*
VT *Ventricular tachycardia*

Ventricular tachycardia (VT) seen without any structural heart disease is defined as idiopathic VT. In childhood, idiopathic VT is more frequently seen in VTs secondary to structural heart diseases. [1] Idiopathic VT is rarely in the form of persistent VT, and mostly it does not demonstrate a life – threatening course. It can emerge during, and after exercises.[2] In many studies investigating autonomic cardiac regulation, decrease in parasymphatetic activity has been shown.[3,4] In our era, interest in foods, herbal drugs, and drugs used with the aim of weight control has greatly increased in parallel with higher prevalence rates of obesity. However, information about effectiveness, relaibility, safety, and quality of most of the drugs used to that end is not sufficiently convincing.

In this article, a case of idiopathic monomorphic VT in an otherwise healthy patient without any structural heart disease as assessed by transthoracic echocardiography (ECO), and cardiac magnetic resonance imaging (MRI) is presented. It was learnt that the patient had been using golden berry extract pills for obesity, and weight loss

CASE PRESENTATION

A 14-year-old girl presented to the emergency service with complaints of palpitations started nearly half an hour ago. The patient had not any known disease, and her familial anamnesis did not reveal any evidence of cardiovascular disease. The patient had been taking golden berry fruit extract pills three times a day. Her body mass index (BMI) was 31 kg/m^2, and blood pressure, 110-70 mmHg. Her peripheral pulses were strongly palpable. On her 12-lead electrocardiograms (ECG) a nonsustained VT was seen (Figure 1). Serum electrolyte measurements in the emergency service were within normal limits: Na, 138 mg/dl; K, 4 mg/dl; Cl, 100 mg/dl; Ca, 9.1 mg/dl; Mg, 1.91 mg/dl , and P, 3.3 mg/dl . Echocardiographic examination results were unremarkable. The patient was hospitalized in the coronary intensive care unit, and amiodarone infusion was started.. At the 8. hour of the infusion, her cardiac rhythm was converted to sinus rhythm despite the presence of ventricular extrasystoles (VES). Twenty hours after the start of infusion, and achievement of normal sinus rhythm, amiodarone infusion was stopped, and the patient was transferred to the service. Biochemical and thyroid function test results, and hematologic values were within physiologic limits. Nearly 20 hours after onset of her monitorization in the service, she again complained of palpitations. Upon detection of persistent monomorphic VT on ECG (Figure 2) the patient was transferred again into coronary intensive care unit, and amiodarone infusion was restarted. Nearly 10 hours later normal sinus rhythm was achieved. (Figure 3). Amiodarone infusion was maintained for 24 hours, and then its oral tablet form was used. Since the patient had no complaint after two days of the follow-up period, she

was discharged with oral amiodarone treatment, She had no complaints on his control examination, and her 24-hr Holter rhythm monitor could not reveal any evidence of VES or VT. A 24 hr- rhythm Holter monitorization performed 2 weeks later could not demonstrate any evidence of arrhytmia. Cardiac MR images did not display any sign of structural heart disease. During exercise EKG, arrhytmia did not develop. Though electrophysiologic tests were recommended to the patient so as to elucidate etiology of VT, the patient declined the offer. During 2 years of the follow-up period, she didn't lose weight, and on periodic rhythm Holter monitorizations, any sign in favour of arrhytmia excl. atrial extrasystoles could not be found.

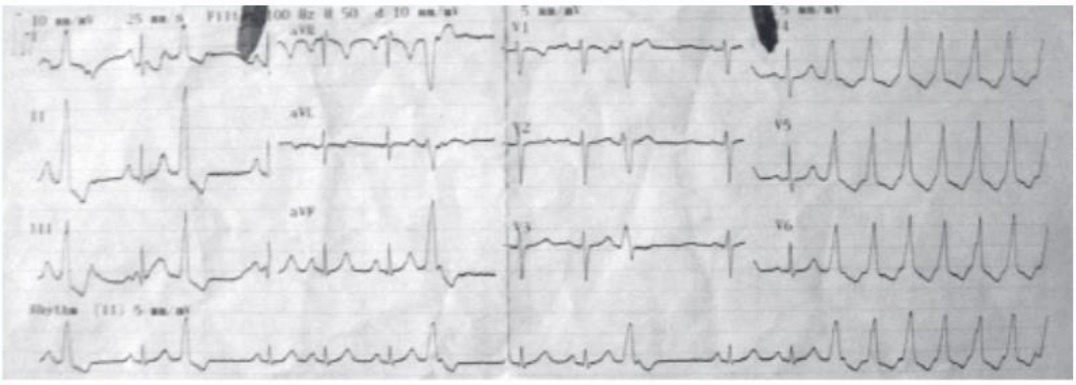

Figure 1. Nonsustained ventricular tachycardia

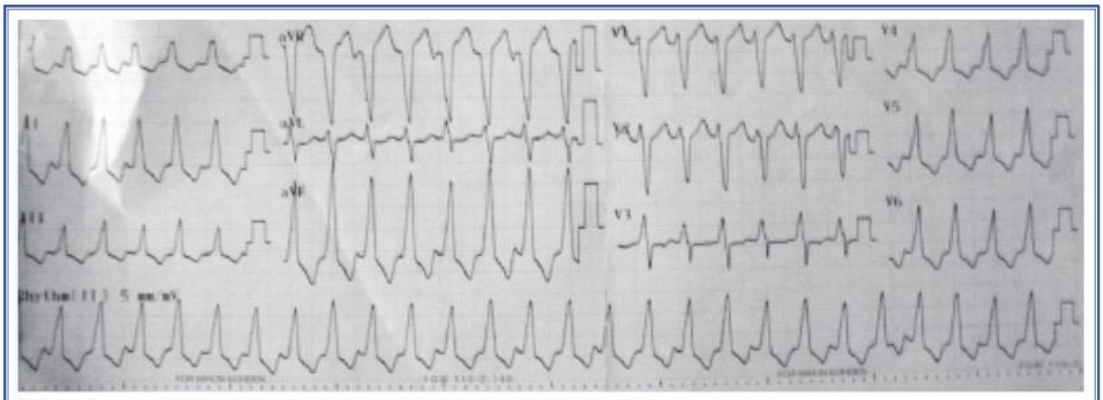

Figure 2. Some ECG tracings recorded during episodes of sustained VT

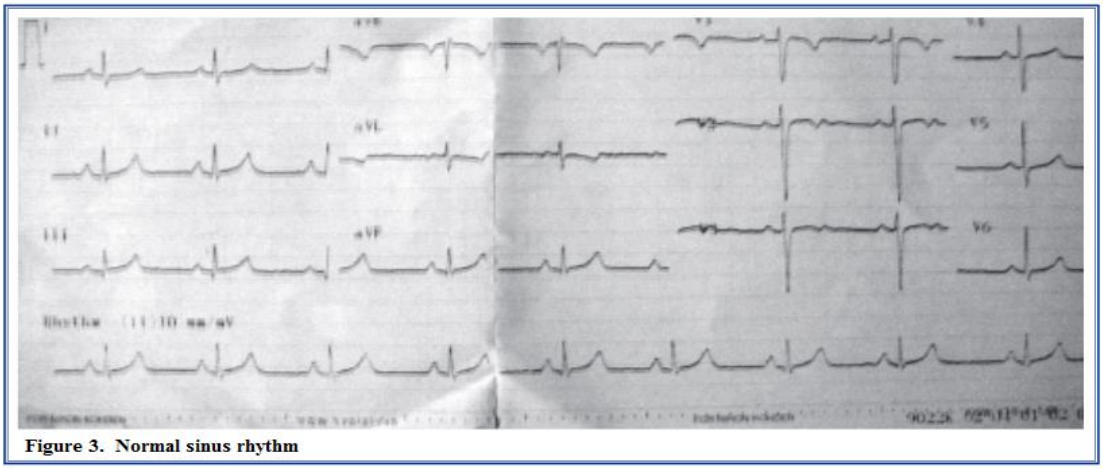

Figure 3. Normal sinus rhythm

DISCUSSION

Idiopathic VT is more frequently seen in the pediatric age rather than in cases with structural heart disease.[1] Idiopathic VTs do not frequently demonstrate a life threatening progression, and since they have a stable hemodynamic state, treatment is not required in patients without any conspicuous symptoms.[1] In symptomatic cases, beta blockers, calcium channel blockers, and other antiarrhytmic drugs can be used. However in many cases, arrhytmia can not be controlled only with drug therapy. Radiofrequency catheter ablation can be used for therapeutic purposes, however its procedural success rates are lower than those of ablative procedures applied for supravenmtricular tachycardia.[1]

In many investigations, a correlation between obesity, and increase in the risk of cardiac arrhytmias has been demonstrated.[5,6] As indicated in many studies, obesity is an important factor effective on the prolongation of QTc, and QT. Indeed, variations in heart rate decrease in obesity, and this phenomenon is reversed with weight loss.[5] Obesity has been associated with fatty infiltration/degeneration of the heart, and sudden death in young patients.[6] Besides current publications have reported that risk of atrial fibrillation (AF) increases in obesity, and outcomes of AF ablation are more deteriorated in obese patients. Increased incidence of arrhytmias in individuals with higher BMIs, might be due to an increase in sympathetic activity induced by leptin. A positive correlation between leptin levels, and BMIs has been revealed, and increments in mean arterial blood pressure, and heart rates triggered by leptin levels have been also demonstrated in rats.[7] Many studies investigating autonomic regulation of cardiovascular system, has displayed decreases in parasympathetic activity in obese patients which were reversed with weight loss.[3,4] These changes in the autonomic nerve system emerging in obese patients might be another reason for increased frequency of arrhytmias in patients with higher BMIs.

The first step, and the most effective way of treating obesity is to make modifications in one’s life style. However, lots of patients have chosen to lose weight without seeking help from a physician or a dietitician or changing their

daily life styles, eating, and dietary habits. Driven by the impact of exaggerated public sensitivity against usu of chemical substances (drugs), and with the msiconception that herbal products are harmless, people resort to herbal medicinal products to become slim. Many herbal products are marketed including dry extracts to be used after dissolving in water, tablets, and capsules containing herbal mixtures, aqueous-alcoholic solutions. However their use is not recommended, because of their impure active ingredients, non-standardized contents, and above all lack of scientific researches which demonstrate their effectiveness. Golden berry fruit (L. *Physalis peruviana*) is a prevalently used herb in folk medicine for the treatment of hepatitis, asthma, malaria, and dermatitis. Scientific data support its antiinflammatory, antioxidant, and anticancerogenic effects. [8,9] Recently, golden berry fruit extract pills have been used increasingly to lose weight without any scientific data supporting their beneficial effects.

In our case, during 2 years of follow-up, complaints of abnormal heart beats did not recur despite a decrease in her BMI. Periodic rhythm Holter monitorizations did not reveal any sign of ventricular arrhytmia. Even though failure to perform electrophysiologic tests because of her reluctance prevented enlightment of VT etiology, we thought that VT might be associated with the use of golden berry fruit extract pills rather than obesity. As seen in our case, Ministry of Health and Social welfare should strictly control marketed herbal medicinal products like golden berry fruit extract to prevent development of fatal outcomes, and public should be warned against inappropriate use of herbal treatment modalities which might lead to deleterious, and fatal outcomes.

Conflict of interest: None declared

REFERENCES

1. Doğan M, Karagöz T, Çeliker A. İdiopatik ventriküler taşikardili çocuklarda radyofrekans kateter ablasyon. Türk Aritmi, Pacemaker ve Elektrofizyoloji Dergisi 2007;5:239-43.
2. Pfammatter JP, Paul T, Kallfelz HC. Recurrent ventricular tachycardia in asymptomatic young children with an apparently normal heart. Eur J Pediatr 1995;154:513-7.
3. Rossi M, Marti G, Ricordi L, Fornasari G, Finardi G, Fratino P, et al. Cardiac autonomic dysfunction in obese subjects. Clin Sci (Lond) 1989;76:567-72.
4. Graziano PA, Calkins SD, Keane SP, O'Brien M. Cardiovascular regulation profile predicts developmental trajectory of BMI and pediatric obesity. Obesity (Silver Spring) 2011;19:1818-25.
5. Vos MA, Crijns HJ. Ventricular tachycardia in patients with hypertrophy and heart failure. In: Zipes DP, Jalife J, editors. Cardiac electrophysiology: from cell to bedside. 4th ed., Philadelphia: Saunders; 2004. p. 610-3.
6. Pietrasik G, Goldenberg I, McNitt S, Moss AJ, Zareba W. Obesity as a risk factor for sustained ventricular tachyarrhythmias in MADIT II patients. J Cardiovasc Electrophysiol 2007;18:181-4.
7. Maffei M, Halaas J, Ravussin E, Pratley RE, Lee GH, Zhang Y, et al. Leptin levels in human and rodent: measurement of plasma leptin and ob

RNA in obese and weight-reduced subjects. Nat Med 1995;1:1155-61.

8. Soares MB, Bellintani MC, Ribeiro IM, Tomassini TC, Ribeiro dos Santos R. Inhibition of macrophage activation and lipopolysaccaride-induced death by seco-steroids purified from Physalis angulata L. Eur J Pharmacol 2003;459:107-12.

9. Perry LM. Medicinal plants of East and Southeast Asia. Cambridge. Massachusetts: The MIT Press; 1980.

Anahtar sözcükler: Bitki özü; obezite; ventrikül taşikardisi.

Key words: Plant extract; obesity; ventricular tachycardia