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Bonzai kullanımı sonrası ortaya çıkan akut miyokart enfarktüsü

Bonsai induced acute myocardial infarction

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Özet– Esrar ve diğer maddelerin kullanımı genç popülasyonda giderek artmaktadır. Esrar kullanımına bağlı miyokart enfarktüsü olguları nadir de olsa daha önce bildirilmiştir. Son zamanlarda adı sıkça anılan ve bir tür sentetik kannabinoid olduğu düşünülen bonzai ile ilgili böyle bir olgu literatürde yoktur. Bu yazıda yüksek miktarda bonzai kullanımından sonra akut miyokart enfarktüsü gelişen 33 yaşında bir erkek hasta sunuldu.

Abbreviations:
ASA acetylsalicylic acid
LAD Left anterior descending
MI Myocardial infarction

Summary– Incidences of drug abuse and cannabis have increased in young adults, recently. Cannabis induced myocardial infarction has rarely been reported in these people. Bonzai which is frequently referred in mass media is a kind of synthetic cannabinoid. However, in the medical literature any such case related to Bonsai has not been reported so far. In this case report we presented a 33-year-old male patient who developed acute myocardial infarction after taking high doses of bonsai.

The incidence of cannabis, and illicit substance use are increasing both in the whole world, and Europe. Especially in developing countries every 6-7 individuals are under the risk of cannabis use.[1] Also in our country, in recent years incidence of cannabis use, and substance abuse is increasing especially among young individuals.[2] Among young pepople, acute myocardial infarction (MI) is rarely seen. Patients presented with acute MI due to cannabis use have been rarely reported.[3] However a case of MI developed secondary to bonsai which is presumably a synthetic cannabis has not been reported in the literature before.

In this paper, we presented a 33-year-old male patient who developed acute MI 12 hours after bonzai use..

CASE PRESENTATION

A 33-year-old bonsai addicted male patient (Figure 1) presented to the emergency service due to the complaints of sudden onset precordial type squeezing chest pain localized over the retrosternal region, and radiating to the left arm accompanying with profuse sweating. Past history revealed that he was smoking 10 cigarettes per day for 12 years, had taken excessive amounts of bonsai 12 hours before the onset of chest pain.

Electrocardiogram (ECG) demonstrated diffusely scattered peaked T waves, and ST-segment elevation (Figure 2) which suggested diagnosis of acute anterior MI in precordial derivations, and then the patient was taken into the catheterization laboratory fort he purpose of applying primary percutaneous coronary intervention (Figure 2). Before the procedure the patient received loading doses of acetylsalicylic acid (ASA), and clopidogrel. Coronary angiography revealed that left anterior descending artery (LAD) was 100 % occluded at the level of first septal branch while other coronary arteries were patent (Figures 3a, and b). At the same session a successful percutaneous balloon angioplasty and stent implantation were performed to the occluded LAD artery (Figures 3c, and d).

Transthoracic echocardiography performed after the transfer of the patient from the catheterization laboratory into the coronary intensive care unit revealed disordered segmental wall motion of apex, and midbasal portion of the anterior wall, and an ejection fraction of 50 percent.

His medical history did not reveal any evidence of previously known systemic disease, drug allergy, exertional angina or dyspnea. In addition he didn't experience febrile episodes, and flu-like symptoms before the onset of his chest pain.

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Figure 1 Bonsai, and its contents

His father, and mother were alive. Any family history of diabetes, hypertension, and sudden death was not elicited. During his follow-up, the patient did not suffer from any additional problems, and he was discharged with ASA, clopidogrel, metoprolol, ramipril, and atorvastatin therapy, and necessary recommendations.

DISCUSSION

Clinical conditions (MI, cerebral embolism etc.) related to atherosclerosis develop most frequently as a consequence of rupture of the atheromatous plaque which leads to the thrombotic occlusion of the vascular lumen.

Stress, heavy physical exercise, and the use of narcotic substances can accelerate the appearance of these clinical manifestations. Recently, with increasing rate of illicit drug use, cocain usage as a possible cause of development of premature atherosclerosis, and onset of acute coronary syndrome has taken its place in relevant guidelines.[4] Cannabis use can induce MI by upsetting myocardial oxygen supply-demand balance, and accelerating aggregation of platelets.[5] Bonsai is a kind of synthetic cannabinoid frequently used in Eastern Asian countries and known as "Spice" in Europe. Cannabis belongs to the same group with cocaine, and amphetamine. It is available as a herbal mixture in many European countries like Germany, Sweeden, and Great Britain since the year 2004. At the beginning, these products were not popular, and they were used in some individuals on an experimental basis. However, after its legal approval reported in German newspapers in 2008, its use has been popularized, and its users have gradually increased. In a research performed by Werse et al[6] ,it was detected that 6 % of the students aged between 15-18 years in Germany had used bonsai at least once in their lifetimes. However those who sold these narcotic substances reported that these substances had been used more frequently (80 %) by male individuals aged between 25-40 years.

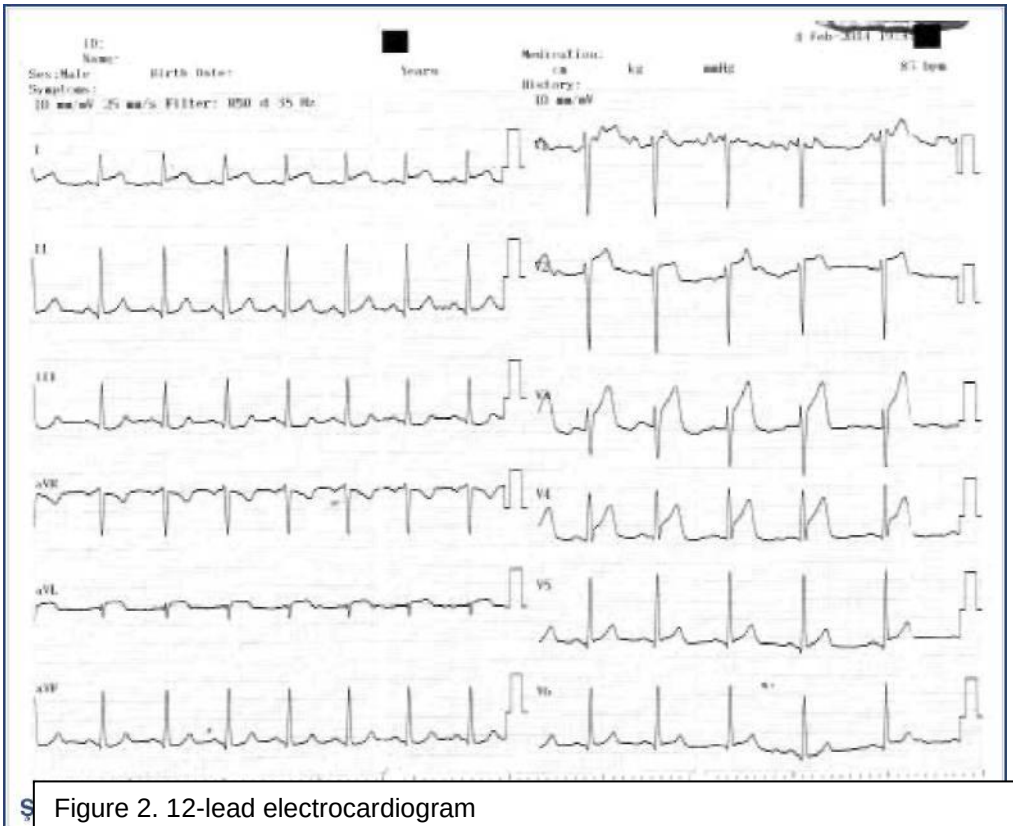

Figure 2. 12-lead electrocardiogram

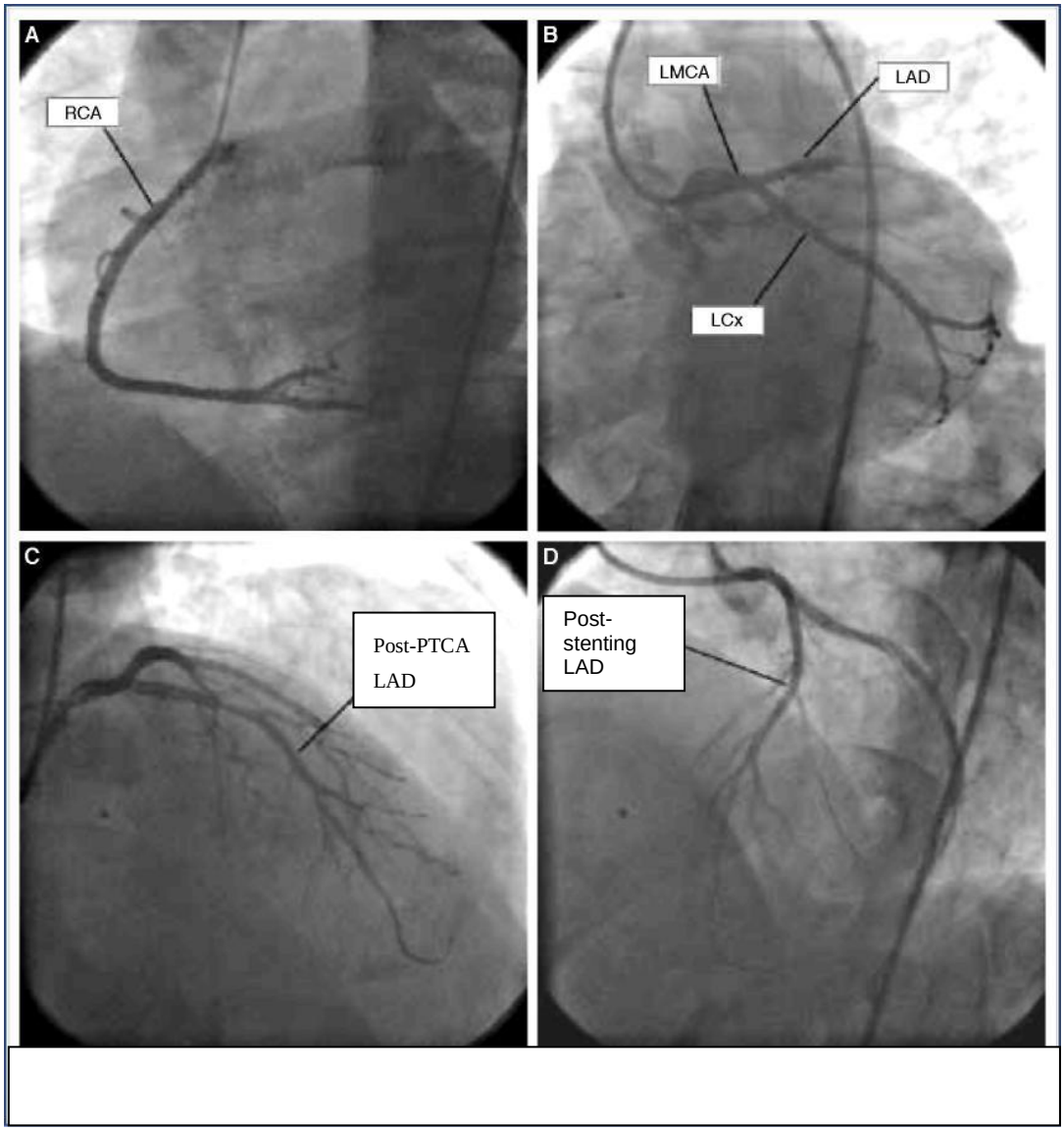

Figure 3. Coronary angiographic images of RCA(A), LAD, and LCx (B). On coronary angiogram appearance of PTCA (C), and post-stenting (D) LAD

Our patient was 33 year-old patient represents above mentioned age group, and male gender. Bonsai is marketed as 0.5-3.0 gr green/brown herbal product in varicoloured, and professionally designed packages. Since its pharmacological effects have a very rapid onset, it is usually wrapped in cigarette paper, and smoked. Because of very rapid development of tolerance, its addictive potential is higher than that of cannabis.[7,8]

Health-related problems secondary to the use of these products resemble those occurring after intake of cannabinoids.[9,10] Cardiovascular problems, and psychological problems like panic attack are frequently reported symptoms. These symptoms are usually seen after consumption of higher dosages.

Any case of acute MI emerging after the use of bonsai has not been reported in the literature so far. When pathophysiology of acute MI associated with addictive substances is analyzed, a few mechanisms apparently induce MI. Cocaine causes severe vasospasm, while cannabis impairs oxygen supply-demand balance leading to development of thrombi.[4,5] Mariujana elevates levels of carboxyhemoglobin because of its 9-tetrahydrocannabinol content leading to increase in oxygen demand while decreasing its supply.[11] However, which of the ingredient in synthetic cannabinoid bonsai induces MI is not clearly known yet. Moreover, vasospasm, plaque rupture, aggregation of thrombi or mismatch in myocardial oxygen supply have not been clearly determined as the causes of acute MI in bonsai users.

In our case, there was heavy thrombus load and we assumed that it has been caused by plaque rupture Therefore, to our knowledge, this is the first reported case in the literature related to the development of acute MI following the use of bonsai.

In this case report, we wanted to emphasize that MI can develop after use of this kind of synthetic narcotic substances, and in young patients with acute MI who have not any cardiovascular risk factor this condition should be absolutely interrogated, and kept in mind. These patients should be told that their MI is related to this narcotic substance, and they should refrain from using. Besides, professional support should absolutely be provided.

Confict of interest: None declared

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Anahtar sözcükler: Akut miyokart enfarktüsü; bonzai; kannabinoid.

Key words: Acute myocardial infaretion; bonsai; cannabinoids.