

Figure 2. (A) An X-ray view of the Amplatzer device (arrow) after opening both atrial and aortic disks just before releasing with retrograde approach. (B) Aortography view showing complete closure of ruptured sinus Valsalva with no regurgitation. (C) 3D transesophageal echocardiography view depicting the closure of the ruptured sinus Valsalva with double disk Amplatzer device (arrow)

Conclusion

Retrograde closure of the SVAR is a safe and cost effective approach in suitable cases. In addition, using a double disk device such as PFO occluder and "sandwiching" the aneurysm may be more reasonable in terms of closing the aneurysm completely.

Video 1. 3D echocardiogram showing sinus Valsalva aneurysm.

Video 2. Aortography showing ruptured sinus Valsalva and regurgitation into the right atrium.

Video 3. Cine X-ray graphy showing the release of the closure device.

Video 4. Aortography showing complete closure of the defect and absence of regurgitation.

Video 5. Transesophageal echocardiography showing the closure device after deployment.

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Cannabis: a rare trigger of premature myocardial infarction

Esrar: Erken yaşta gelişen miyokart enfarktüsünün nadir bir tetikleyicisi

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Introduction

The European monitoring center for Drugs and Drug Addiction declared that one in five adults in Europe have used marijuana or related drugs like hashish at June 2008 report. While heroin, ecstasy and cocaine were seen as the most harmful illicit drugs, cannabis was often viewed as a relatively benign drug, as alcohol or tobacco. Acute myocardial infarction (AMI) is an uncommon diagnosis among young patients. Smoking cigarettes is the most prevalent risk factor, which has well known detrimental effects on atheromatous plaque formation in this age group (1). Although we need more studies to investigate the contribution of cannabis smoking to coronary artery disease process, it was proposed that cannabis smoking is a trigger of acute cardiovascular events according to several case reports (2-3).

In this report, we describe a 28-year-old man with low atherosclerotic risk profile except cigarette smoking who had acute myocardial infarction close proximity to cannabis use.

Case Report

A 28-year-old man was admitted to our clinic with a complaint of chest pain lasting about 12 hours. Physical examination was normal. Electrocardiography (ECG) showed qS formations on V1 to V4 derivations and 0.1 mV ST elevation compatible with anteroseptal myocardial infarction. Blood pressure was 135/80 mm Hg, heart rate 85 bpm with sinus rhythm. He was previously healthy and he had no coronary risk factors except smoking cigarettes. He had been smoking cannabis three times a week for about 6 years and smoking 20 cigarettes a day for 8 years. The last consumption of cannabis was 2 hours before the onset of chest pain. Consequently, he was taken to the catheter laboratory for primary percutaneous coronary intervention. Coronary angiography revealed thrombosis and total occlusion of proximal portion of the left anterior descending coronary artery (Fig. 1A). There were noncritical plaques in circumflex and right coronary arteries. A large thrombus burden and very slow coronary flow emerged after the lesion was passed with 0.014-inch floppy guidewire (Fig. 1B). The clot was aspirated via an aspiration device (The Export Aspiration Catheter, Medtronic, Minneapolis, Minnesota, USA). Underlying nonstenotic culprit lesion covered by a bare metal stent and TIMI III flow was achieved (Fig. 2). The chest pain resolved after the intervention but ECG findings did not change. Tirofiban infusion was administered intravenously after the procedure. Echocardiography showed anterior, anteroseptal, anterolateral and apical hypokinesia and ejection fraction was 35% which was measured with Simpson's method. Peak creatine kinase MB and troponin I values were 504 U/L and 46 ng/mL. Antithrombin III, prothrombin time (PT), activated partial thromboplastin time (aPTT), fibrinogen, homocysteine, cholesterol, triglyceride levels were normal. Factor V Leiden and prothrombin gene mutation tests were performed and found to be normal variant. The patient was discharged without any complications after 6 days.

Discussion

Atherosclerotic heart disease improves slowly over time in the evidence of irreversible and reversible chronic risk factors. When an atherosclerotic vulnerable plaque ruptures, atheromatous core exposes to thrombogenic material and coagulation cascade starts even if in the presence of a nonstenotic, insignificant lesion, which is the most common pathophysiological mechanism that causes acute coronary syndromes. Acute risk factors increase the risk of plaque rupture and cause acute cardiovascular events. Examples of these acute risk factors are heavy physical activity, emotional stress, eating, cold or heat exposure, coffee or alcohol consumption, cocaine or marijuana use and sexual intercourse (4). Besides being accepted as acute risk factors for cardiovascular events, it was proved that, long-term cocaine use may also lead to development of angina by causing premature development of CAD as noticed at ACC/AHA 2002 Update for the Management of Patients with Chronic Stable Angina Guideline but contribution of cannabis smoking to coronary artery disease is unknown (5).

The strongest evidence implicating marijuana as a trigger of myocardial infarction was reported from a large epidemiologic study by Mittleman et al. (6). They identified 124 patients with AMI, who reported marijuana

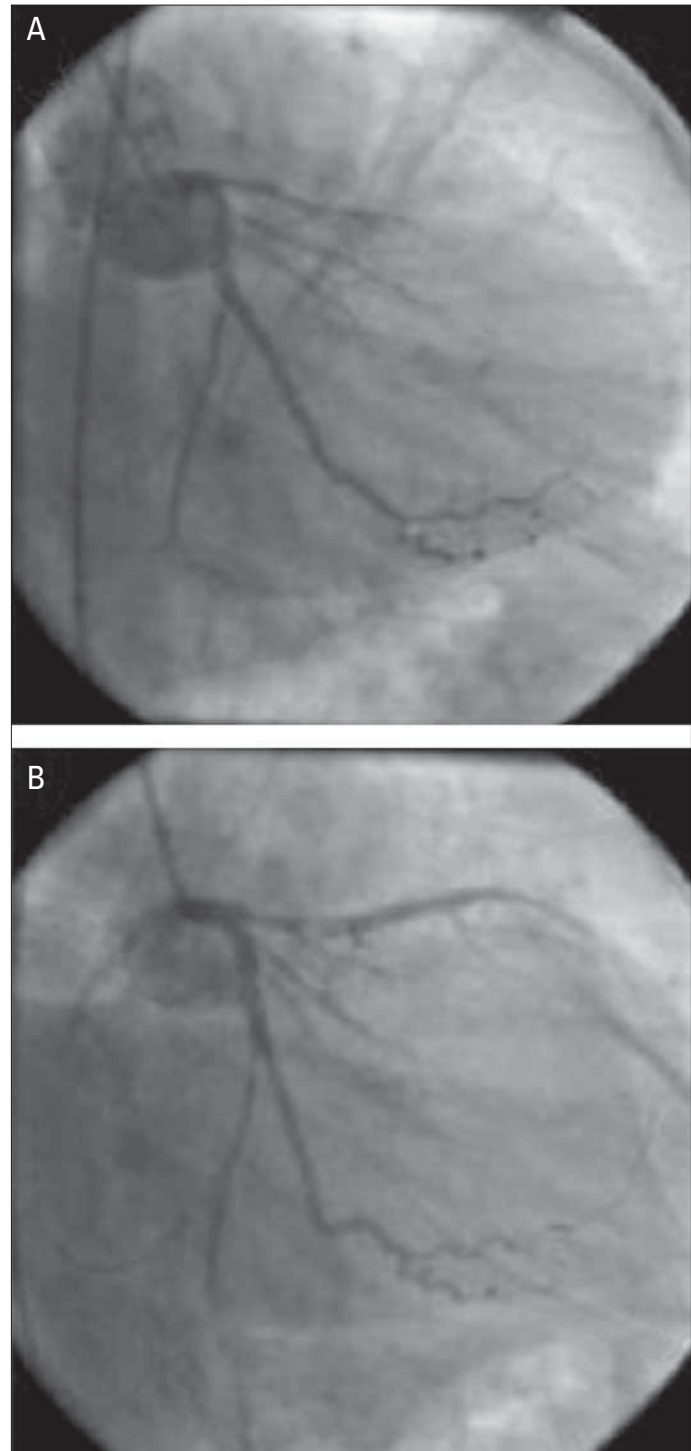


Figure 1. Coronary angiography view of thrombosis and total occlusion of proximal portion of the left anterior descending coronary artery (A). A large thrombus burden and very slow coronary flow are seen after the lesion was passed with 0.014-inch floppy guidewire (B)

use. They found a statistically significant 4.8-fold increase in the risk of MI in the first hour following marijuana use decreases as time progresses.

Smoking marijuana is associated with a net increase in myocardial oxygen demand with a decrease in oxygen supply, which is due in part to an increase in carboxyhemoglobin (7). The major pharmacologically active compound is -9-tetrahydrocannabinol (THC). Some authors

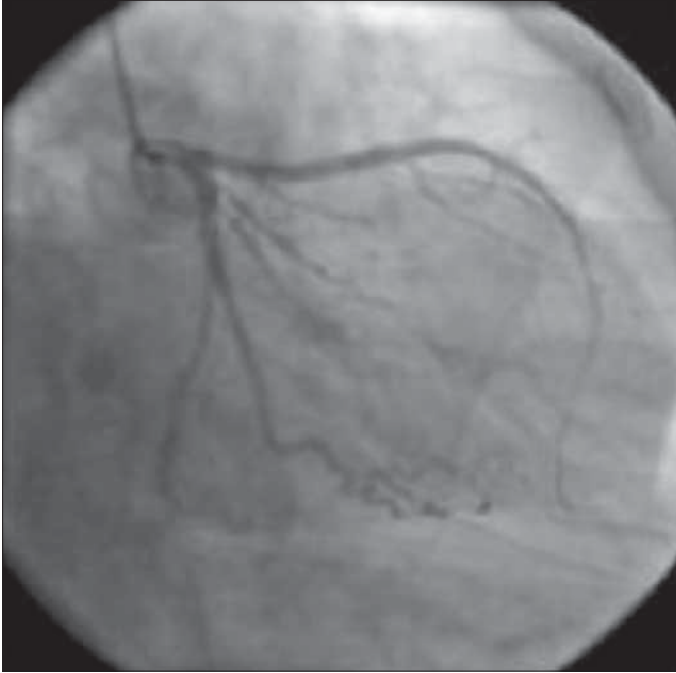


Figure 2. Coronary angiography view of a TIMI III flow after aspiration with Export device and bare metal implantation

reported an inhibiting effect of large concentrations of THC on agonist induced platelet aggregation (8), others documented increased aggregation of platelets in the presence of THC (9).

Increased myocardial oxygen demand, decreased blood supply, marked vasoconstriction of the coronary arteries and platelet activation all contribute to the development of acute event. In our case, probably, he has had early onset coronary heart disease in whom the cigarette smoking was the single risk factor and cannabis smoking triggered the plaque rupture and induced thrombosis.

Conclusion

We reported this case to attract attention that cannabis may be a much more common cause of myocardial infarction than is generally recognized. Clinicians should be more cautious when taking medical history about use of cannabis and similar illicit substances. Also like our patient's presentation, irreversible damage to the myocardium may be unavoidable when they admit to the hospital at late hours of myocardial infarction perhaps because of the deterioration of perception related to marijuana use.

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Transcatheter closure of coronary artery fistula with an Amplatzer Duct Occluder II in a symptomatic infant

Semptomatik bir infantta koroner arter fistülünün Amplatzer Duct Occluder II transkateter kapatılması

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Introduction

Coronary artery fistulas (CAF) are rare congenital or acquired malformations in which a direct vascular connection from a coronary artery to a cardiac chamber or a great vessel exists. Although rare, they are the most frequent hemodynamically significant coronary anomaly (1-3). Transcatheter closure (TCC) of CAF was first introduced 1983 and has become the treatment of choice (2, 4).

We report a case of 2.5 months old symptomatic girl whose large CAF was successfully closed with Amplatzer Duct Occluder-II ((ADOII,AGA Medical Corporation, Golden Valley, MN,U.S.A).

Case Report

A 2.5-month old girl was referred to our center with the diagnosis of coronary artery fistula. She presented with symptoms of heart failure when she was 17 days old and diagnosis of CAF was established. Diagnostic catheterization revealed a significant left-to-right shunt with a Qp/Qs ratio of 3.43. Anti-congestive treatment was started and she was referred to our center. Echocardiographic examination performed at our center revealed a large CAF originating from the right coronary cusp, draining into the right ventricular outflow tract (RVOT) and she was admitted for cardiac catheterization.

Femoral venous and arterial 5Fr sheaths were placed and selective coronary angiography showed a large tortuous CAF, with right coronary artery leaving the fistula in the proximal segment before an aneurismal dilatation, without additional coronary abnormalities. Proximal segment diameter of CAF was about 4-5 mm, distal segment draining into RVOT was about 4 mm. A 5Fr soft-tip guiding catheter with 0.056" inner diam-