CASE REPORT

Acute myocardial infarction with multiple oronary thromboses in a young addict of amphetamines and benzodiazepines

Mohammed A. Al Shehri, Ali A. Youssef *

Armed Forces Hospital Southern Region, Aseer

Saudi Arabia

A 35-year-old man of average build and a smoker, with a background of a psychiatric disorder, was brought by his neighbor to the emergency department after an hour of severe chest pain. Upon arrival at the hospital he had cardiac arrest, was resuscitated, and moved to the catheterization laboratory with inferior, posterior, and lateral myocardial infarction. Coronary angiography showed an unusual thrombosis in multiple coronary branches. Toxicology report showed high levels of amphetamines and benzodiazepines in the patient's original blood sample. The patient was kept under ventilation for 18 days, with difficult recovery due to severe withdrawal manifestations, ventilation acquired pneumonia, and rhabdomyolysis inducing acute renal failure. The patient regained near normal left ventricular function after baseline severe regional and global dysfunction. We postulate a relationship between the use of amphetamines, potentiated by benzodiazepines, and occurrence of acute thrombosis of multiple major coronary arteries.

Keywords: Amphetamines, Benzodiazepine, Coronary, Myocardial infarction, Thrombosis

Introduction

Amphetamines are common for drug abuse, especially in the young population, where mixed drug abuse is not uncommon [1]. Amphetamines increase the blood pressure, heart rate, and platelet aggregation [2], and induce tissue factor expression, inducing thrombosis [3]; they might also accelerate atherosclerosis and trigger plaque rupture [4]. Benzodiazepines synergistically potentiate myocardial ischemia mediated through the positive inotropic effects of catecholamines [5].

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* Corresponding author at: Cardiology Department, Armed Forces Hospital Southern Region, Khamis Mushayt, P.O. Box: 101, Aseer 61961, Saudi Arabia.
E-mail address: draliyoussef@gmail.com (A.A. Youssef).

P.O. Box 2925 Riyadh – 11461KSA
Tel: +966 1 2520088 ext 40151
Fax: +966 1 2520718
Email: sha@sha.org.sa
URL: www.sha.org.sa

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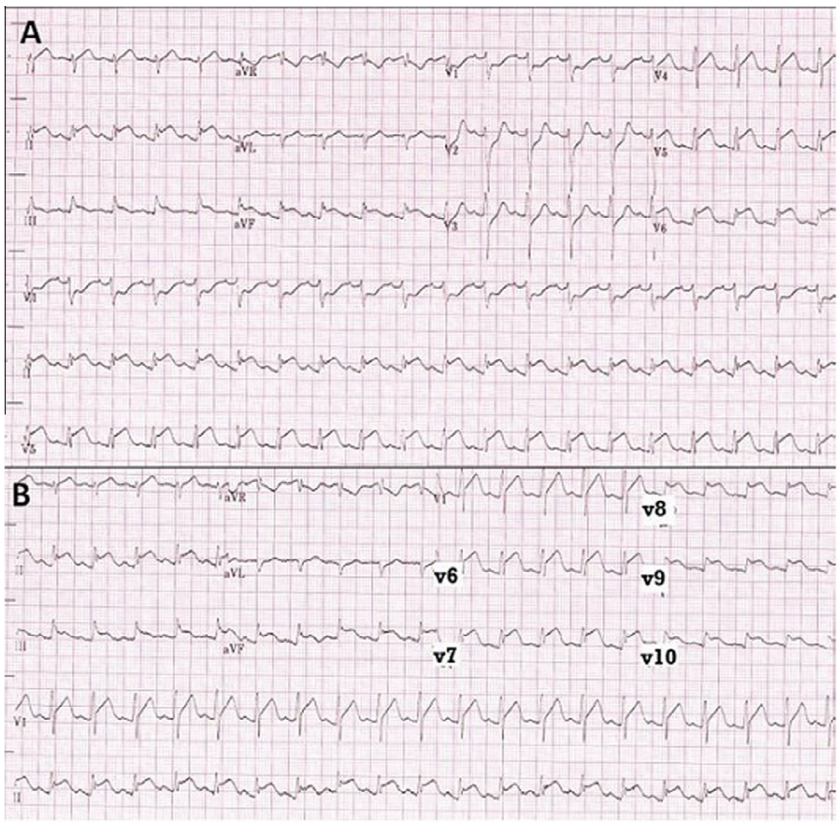

Figure 1. Initial electrocardiogram at presentation showing sinus tachycardia with ST-segment elevation in (A) leads II, III, AvF, and V4-V6, with ST-segment depression in V1–V3 and (B) posterior leads ST-segment elevation.

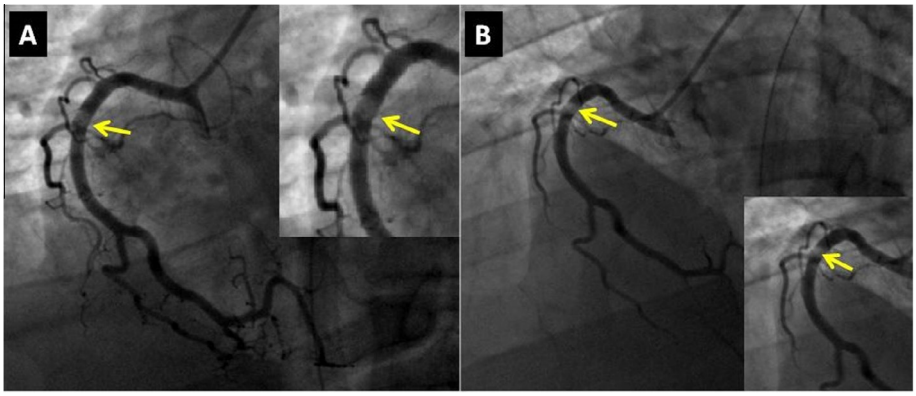

Figure 2. The right coronary angiogram in (A) left anterior oblique projection and (B) left anterior oblique with cranial angulations, both showing patent artery with thrombus (arrows). The insets are zoomed views.

an active smoker and under follow-up for a psychiatric disease for several years. Emergency triage revealed blood pressure of 115/65 mmHg and a heart rate of 105 beats/min. A few minutes later the patient developed ventricular fibrillation, and resuscitation was done for 15 minutes. The electrocardiogram showed ST segment elevation myocardial infarction (STEMI) in the inferior, posterior, and lateral leads (Fig. 1). The patient was intubated and given 5000 IU of heparin. Aspirin 300 mg and clopidogrel 600 mg were given via a nasogastric tube and he was moved to the catheterization laboratory. Coronary angiography showed a dominant, normal caliber, normal flow