

Acute extensive anterior ST elevation myocardial infarction following bee sting: a rare report of Kounis syndrome in LAD territory

Mohammad Reza Karimlu¹, Aida Alavi-Moghaddam², Omid Rafizadeh¹, Arsalan Azizpour¹, Isa Khaheshi³

¹Cardiovascular Department, Zahedan University of Medical Sciences, Zahedan, Iran; ²School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran; ³Cardiovascular Research Center, Modarres Hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran

Correspondence to: Isa Khaheshi. Cardiovascular Research Center, Modarres Hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran. Email: isa_khaheshi@yahoo.com.

Abstract: Herein we report a case of extensive anterior myocardial infarction (MI) after bee sting, in 57-year-old man who had no known risk factors for coronary artery disease (CAD).

Keywords: Kounis syndrome; ST elevation myocardial infarction (MI)

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Introduction

Allergic reactions have various manifestations, from simple skin reactions to life threatening cardiovascular symptoms. It is well known that during mast cell activation, inflammatory mediators released and can induce coronary arteries spasm and atheromatous plaque rupture. Concurrence of acute coronary syndrome with conditions associated with mast cell activation is defined as Kounis syndrome (1,2). Kounis syndrome is an infrequently diagnosis among patients with myocardial infarction (MI). Herein, we report a 57-year-old man without known risk factors for coronary artery disease (CAD) who developed MI following bee sting.

Case presentation

A 57-year-old man came to our emergency department (ED), complaining of localized itching and swelling after bee sting (a localized rash, 8 mm × 10 mm, on the back; just on the left trapezius area). On presentation, vital signs were normal except for tachypnea (respiratory rate 24/min). Past medical and surgical history was insignificant. He was treated with intravenous antihistamines. After a few hours, he complained of typical chest pain. Subsequently, electrocardiography (ECG) was taken and revealed extensive anterior MI (Figure 1). Patient's serum CK-MB, troponin

I and LDH were found to be elevated. Echocardiogram revealed an ejection fraction of 40% with regional wall motion abnormality in anterior wall. Urgent coronary angiography was performed. Angiography revealed the recanalized thrombus with narrowing of 70–80% of mid to proximal part of left anterior descending (LAD) artery (Figure 2). There were no significant atherosclerotic lesions at the other coronary arteries. A decision was taken to revascularize LAD artery in this patient and PCI with one drug eluting stent was done for him (Figure 3). He had no complication after PCI and discharged on ASA 81 mgr daily and clopidogrel 75 mgr daily.

Discussion

Kounis syndrome is a group of symptoms that is triggered by release of inflammatory mediators following an allergic reaction that manifests as unstable vasospastic or nonvasospastic angina and even as MI (3). Nowadays this syndrome also is described for involvement of other arteries such as mesenteric and cerebral arteries (4–6). Kounis syndrome has different causes such as drugs, environmental exposures e.g., shellfish eating and several conditions for example angioedema, Churg-Strauss syndrome and mastocytosis (7). Kounis syndrome has three variants (8):

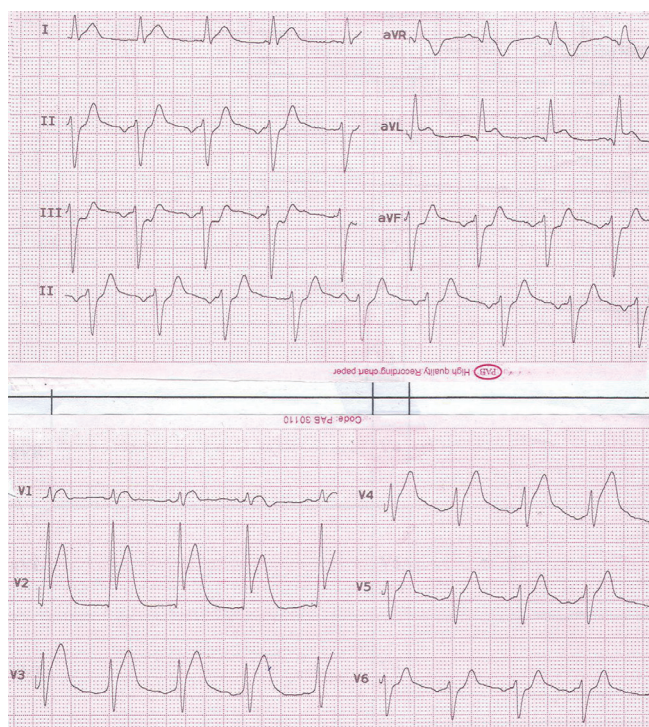


Figure 1 12-lead ECG revealed extensive anterior ST-elevation MI (in leads: I, aVL and V1-V6).

type 1 variant—describes patients with normal or near normal coronary arteries without risk factors for CAD. Type 2 variant is related to patients with pre-existing atheromatous disease. Type 3 variant is seen in patients with stent thrombosis. Here we described a patient with MI after bee sting. MI is rarely reported complication of bee sting. There are few cases of MI occurring after bee sting (9). Several of bee venom proteins and peptides are allergens. These allergens, especially phospholipase A2, can cause endogenous amin release from mast cells during allergic reaction, which lead to vasoconstriction and can coincide with platelets aggregation (10,11); however, hypotension caused by anaphylaxis may induce MI. After allergic reaction right coronary artery is more vulnerable for spasm. Hence in Kounis syndrome inferior myocardial wall involvement is more common (12) but our patient had extensive anterior MI. Most of acute coronary syndromes after allergic reaction occur with ST segment elevation as in our patient (13,14). It was reported that the treatment with primary PCI was applied in patients with MI with ST segment elevation after bee sting (6,15). We also performed primary PCI for our case. Our case is imperative because he had no signs of previous ischemic heart disease. The

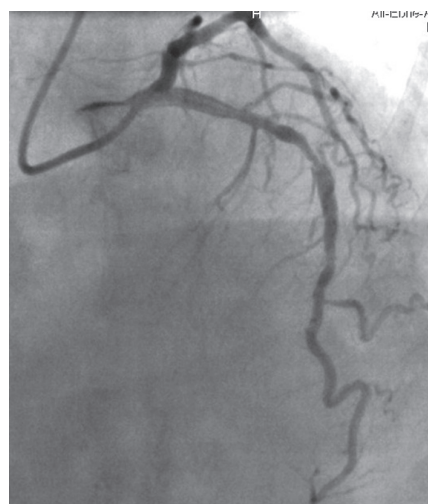


Figure 2 Urgent coronary angiography showed the recanalized thrombus with narrowing of 70–80% of mid to proximal part of left anterior descending (LAD) artery.

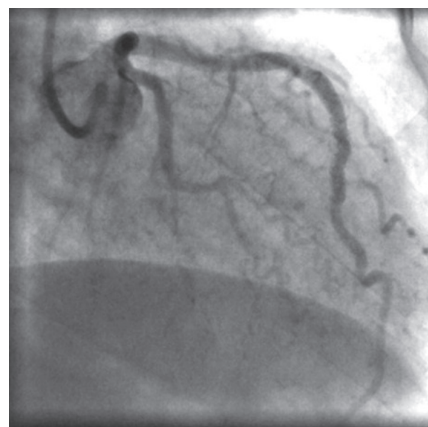


Figure 3 Final result after urgent PCI with one drug eluting stent.

patient's cardiovascular symptoms after bee sting are attributable to Kounis syndrome. Although, the formerly existing atherosclerotic plaque could not be ruled out. As the last point, although IVUS and OCT were not performed due to limited resources, Intracoronary imaging techniques (IVUS and OCT) may be essential to explain underlying physiopathological mechanism of MI following Kounis syndrome (16).

Acknowledgements

None.

Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

Informed Consent: An informed consent was assigned before publication of the case.

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