



Cannabinoid Induced Kounis Syndrome: Coincidence or Something More Sinister?

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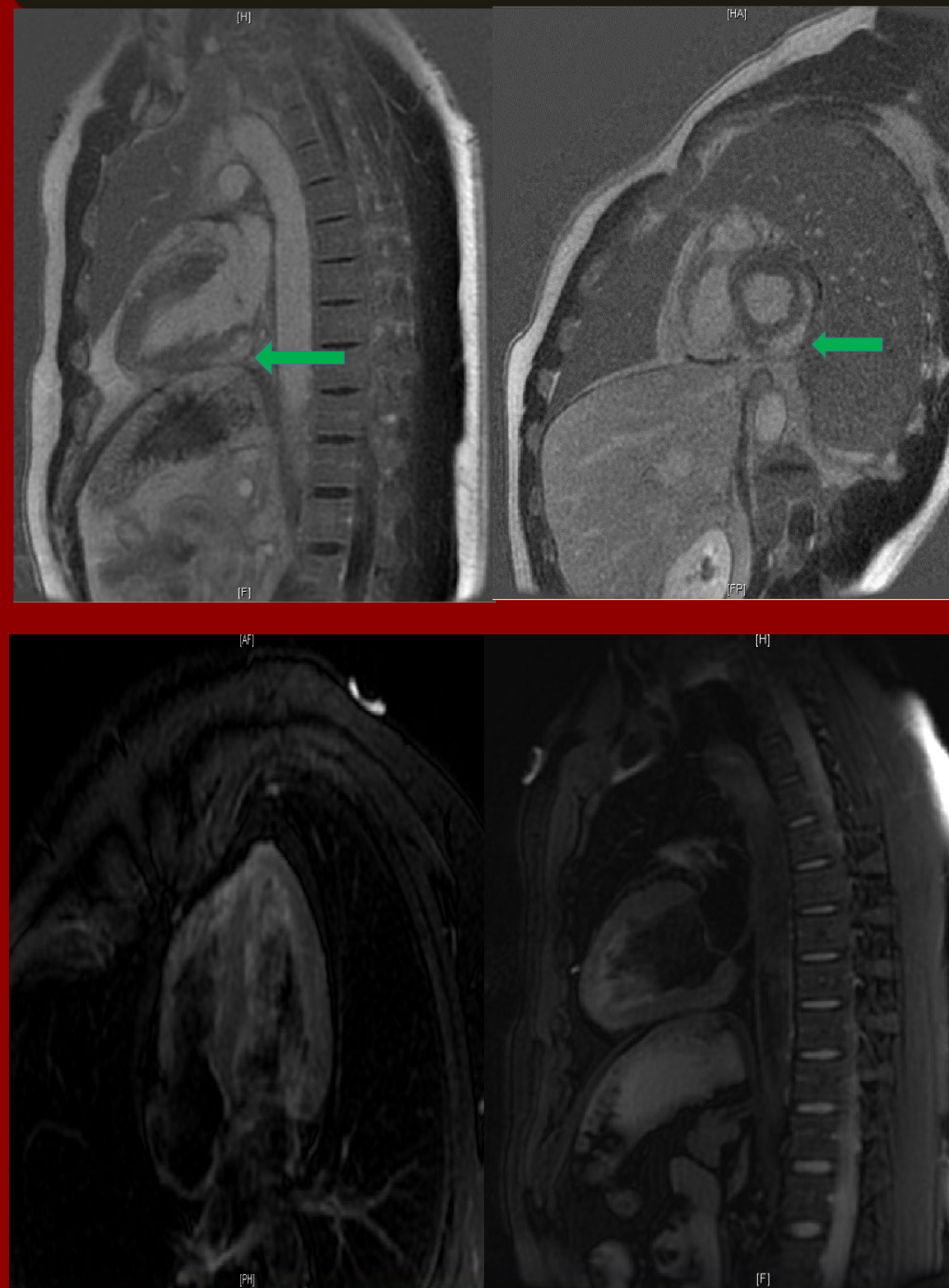
Introduction

Kounis syndrome is an allergic acute coronary syndrome (ACS). It is caused by an allergic response and/or strong immune reaction to a drug or an allergen. It can manifest as coronary spasm, acute myocardial infarction and stent thrombosis. We describe a case of Kounis syndrome triggered by cannabis in a middle-aged male.

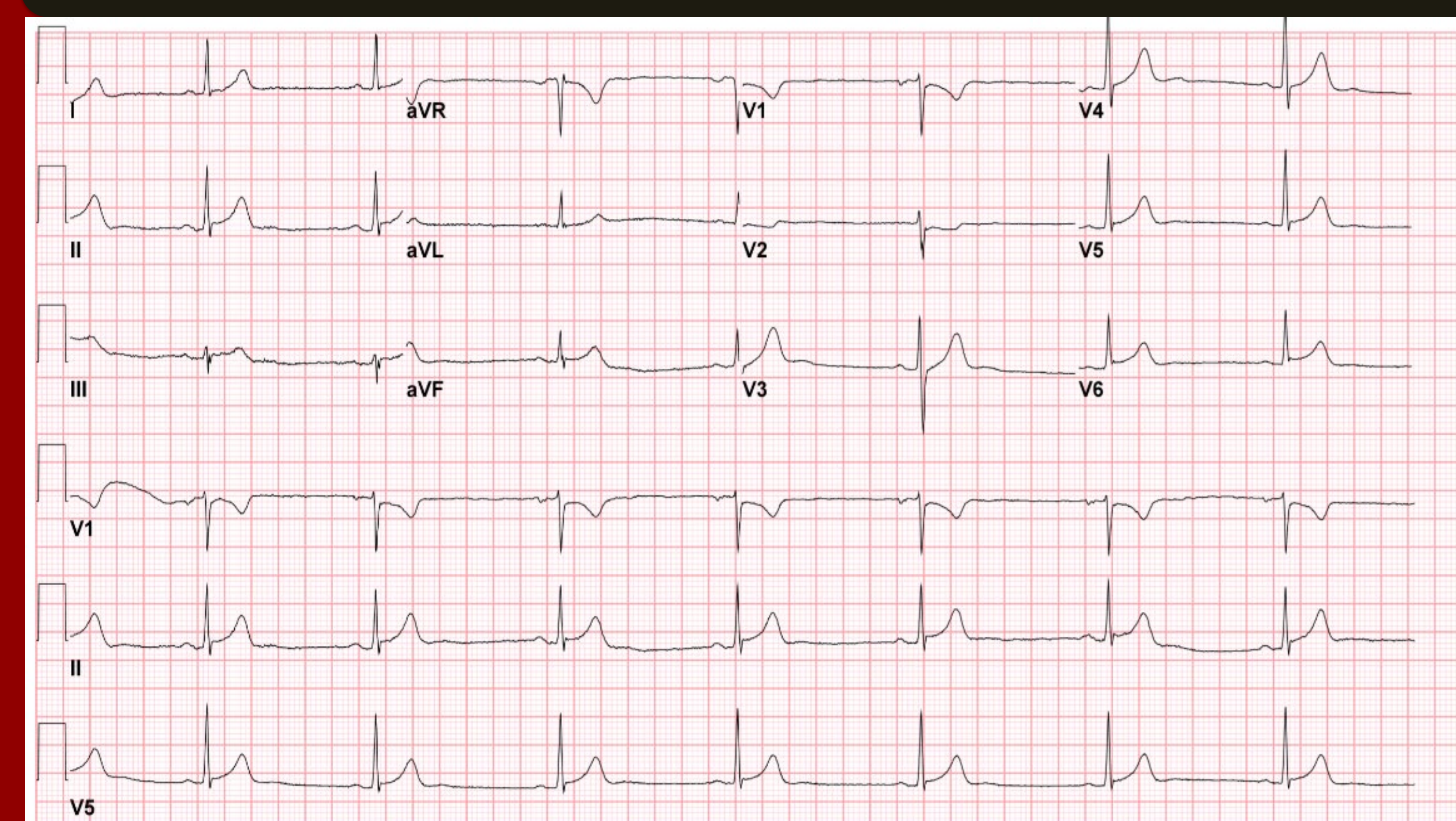
Case Description

- A 41-year-old Caucasian male with history of asthma, allergic rhinitis presented with intermittent substernal chest pressure and bilateral jaw pain for past twelve hours. He also reported generalized pruritis that started two days ago. He described being under emotional stress recently and hence started a habit of smoking marijuana.
- Vital signs were stable on admission. Physical exam was remarkable for showed mild eczematous lesions on anterior chest otherwise normal exam.
- EKG showed subtle ST elevation in inferior leads (II, III, aVF).
- Initial investigations showed elevated cardiac troponin-I 31 ng/ml and positive urinary drug screen for cannabinoids.
- He underwent urgent coronary angiogram which revealed normal size and flow in coronary arteries.
- Transthoracic echocardiography showed normal left ventricular ejection fraction without any regional wall motion abnormalities or pericardial effusion.
- A few hours later patient had recurrence of pain and he received sublingual nitroglycerin and calcium channel blocker with only partial resolution.
- At this point, we considered the possibility of an allergic reaction. Hence, diphenhydramine and montelukast were initiated which resulted in significant improvement of his symptoms within an hour.
- Next morning cardiac magnetic resonance imaging revealed diffuse myocardial edema involving basal, mid-anterior, lateral, inferior and apical septum, along with late gadolinium enhancement in subepicardial left ventricular inferolateral wall (Green arrows).
- He was seen in clinic in 2-week post discharge and described no further episodes.

Cardiac MRI



Initial Electrocardiogram



Discussion

- Kounis syndrome is defined as acute coronary syndrome caused by an allergic reaction or strong immune response to a drug or other substance.
- Common triggers include aspirin, amoxicillin, sulfamethoxazole, paclitaxel, naproxen and allergens.
- Diagnosis can be made by measuring positive serum levels of cardiac troponin-I and allergy markers including tryptase, histamine and Immunoglobulin E.
- Cardiac MRI is a reliable diagnostic modality which reveals late gadolinium enhancement in subepicardial region with normal washout in the subendocardial area.
- Management of Kounis syndrome includes antihistamines along with IV corticosteroids to abolish the allergic reaction. Mast cell stabilizers, calcium channel blockers and vasodilators are considered useful second line adjunct therapies.
- Beta blockers and morphine are contraindicated as their use can lead to unopposed activity of alpha adrenergic receptors and mast cell degranulation respectively, which can aggravate the coronary spasm.
- Marijuana is the most commonly abused psychoactive drug in the United States and has been implicated in causing angina, cardiomyopathy, arrhythmia, stroke, thromboangitis obliterans and ischemic ulcers.

Conclusion

Our case illustrates the importance of comprehensive history and examination in concert with laboratory investigations to help aid in diagnosis of rare presentations such as Kounis syndrome. Given the increase incidence of Marijuana use in community, this case also highlights one of the ways marijuana use can presents with cardiac complications in susceptible patients.

References

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