

## Allergic Myocardial Ischemia in a Healthy Young Patient

### Abstract

This is a case report of a male with no known allergies to any medications or foods who suddenly developed signs of myocardial infarction after treatment for cellulitis.

### Case Report

A 33-year-old, white male, came into the emergency department complaining of pain, swelling and discharge in the area of his left popliteal fossa. The pain, swelling and erythema occurred 3 days prior to consultation. The patient described a small 3x4 cm induration at the back of his knee which gradually became erythematous, swollen and painful. He had no associated fever or history of trauma or injury. He did not take any medications and the above symptoms worsened which prompted him to seek consultation at the emergency department. Physical examination revealed a 7x9 cm area of erythema with an abscess in the left popliteal fossa extending to the lower thigh that was tender and swollen. At this time, the patient was admitted to the hospital with a diagnosis of cellulitis.

The patient's past medical history is significant for asthma and arthritis for which he takes albuterol inhaler and pain medications as needed. He smokes and drinks alcohol occasionally. He has no history of allergies to medications or food. His family history is positive for cancer, asthma and depression.

On admission, the patient was afebrile with stable vital signs. He was started on IV fluids and Amoxicillin/Sulbactam (UNASYN) 3 g every 8 hours for 7 to 10 days. On hospital day 2, the patient was given his second dose of antibiotics. Immediately he began having chest heaviness, shortness of breath and skin rash on his anterior chest wall. An EKG was done showing elevated ST segment in leads

II, III, AVF. All medications were stopped, and the patient was given nitroglycerin, aspirin and salmeterol. After administration of the drugs, he began to show immediate improvement. Chest pain was relieved; his breathing normalized and the rash/erythema began to disappear. Cardiac enzymes were ordered and showed elevated values. A cardiologist was consulted and cardiac angiography was done 6 hours after chest pain which showed normal coronary arteries. Cardiac enzymes were followed, EKG was done every 8 hours and new antibiotics were started (Levofloxacin).

Hospital days 3 to 4 showed improvement in the patient's condition. He had no chest pain, no rash, no fever and no shortness of breath. Three consecutive EKG findings were normal and cardiac enzymes dropped gradually. His cellulitis improved with Levofloxacin. The patient was discharged with a diagnosis of myocardial ischemia secondary to transient coronary spasm secondary to penicillin allergy. Following the normal coronary angiogram, the cardiologist discontinued the aspirin and clopidogrel as the incident was attributable to a transient vasospasm without intra-arterial damage which had resolved with the steroid injection and discontinuation of the offending antibiotic.

### Discussion

The occurrence of acute coronary syndrome due to allergy/hypersensitivity as well as anaphylactic/anaphylactoid reactions is increasingly encountered in clinical practice.<sup>1</sup>

Kounis and Zavras first described this as an allergic angina syndrome that progresses to an allergic myocardial infarction, with the main mechanism being coronary vasospasm. This is caused by inflammatory mediators released during the allergic

insult. Symptoms present as a coincidental occurrence of chest pain and allergic reactions accompanied by clinical and laboratory findings of classical angina pectoris.<sup>2</sup> Kounis syndrome can happen on normal coronary arteries or even in children.<sup>3,4</sup> Allergic angina can progress to acute myocardial infarction if untreated.<sup>1</sup> The underlying mechanism involves mast cell degranulation and release of vasoactive peptides which lead to spasm of the coronary arteries.<sup>2</sup> Prolongation of the spasm may cause irreversible muscle ischemia and damage or even plaque rupture and total occlusion of the coronary artery sometimes happen.<sup>1</sup> Kounis syndrome may even cause recurrent acute myocardial infarction.<sup>5</sup>

Various case reports defined different causes for Kounis syndrome including antibiotics, analgesics, antineoplastic medication, contrast media, corticosteroids and NSAIDs, mesalamine in some cases drug eluting stents can trigger Kounis syndrome.<sup>1,3,4,6-8</sup> Other triggers involve environmental exposure to ants, bees, wasps, jelly fish stings, poison ivy, viper venom and even latex contact.<sup>9</sup> According to literature, the recommended treatment is to stop the offending cause and initiate treatment with steroids and antihistamines for relief of the spasm.<sup>4</sup> Conventional anti-ischemic measures such as nitrates, beta blocker and aspirin in addition to anti-allergy measures are also used.<sup>8</sup> A cardiology consultation is necessary as most of the patients may need cardiac catheterization to rule out other causes of coronary artery disease.<sup>1</sup>

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