Heart attack in young patient with prothrombin gene mutation

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We want to present a case of a 23 year-old male who was diagnosed with acute myocardial infarction and treated with percutaneous coronary angioplasty with a drug-eluting stent in the left coronary artery.

The patient, male, 23 years old, presented to the Emergency Department after 3 hours from the onset of a constrictive, acute chest pain that irradiated down his left arm, with excessive sweating and nausea. The patient report for being stressed lately and had an upper respiratory syndrom one week ago.

The patient’s medical history was negative for diabetes, high blood pressure, and positive for chronic tobacco use. The patient present family history of cardiac events.

The clinical examination on admission revealed a regular heart beat (90/ min) and normal blood pressure (140/90mmHg), with no other pathological modifications. The electrocardiography was illustrative of a lateral ST elevation myocardial infarction (ST-segment elevation in lead I,aVL, V1-V5). The patient underwent emergency invasive coronary angiography that showed the acute thrombotic occlusion of the left coronary artery, for which a primary percutaneous coronary angioplasty with a drug-eluting stent was performed ( Figure 1).

The angiographic aspect of the right coronary artery did not show any atherosclerotic lesions. The laboratory tests were normal for the complete blood cell count, with normal ranges of serum cholesterol triglycerides, kidney and hepatic enzymes. A profile tests for narcotics, virology, chlamydia were performed, the tests were all negative.

Following the percutaneous coronary intervention, the patient showed a complete resolution of ST-segment elevation, as well as the disappearance of chest pain and other symptoms. The full hospitalization time was 5 days.

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Due to the young age of the subject, screening for thrombophilia was performed, which included testing for MTHFR gene mutation. The screening results showed that The patient was heterozygous for the prothrombin G20210A, homozygous for C677T and heterozygous for glycoprotein (GP) IIb/IIIa P.

A genetic consult was requested, which recommended longterm oral anticoagulant therapy. The patient has been followed-up in out-patient conditions at regular time periods. The patient agreed to the publication of his data and the instution where the patient had been admitted approved the publication of the case.
This case report shows that medical doctors should have an outside-the-box approach for the diagnosis and therapeutic management of young patients who present with acute cardiovascular events. If the patient in question does not present clear cardiovascular risk factors for acute myocardial ischemia, the clinician should seek for possible causes, thus leading to several benefits in the management and secondary prevention of such cases.