CASE REPORT: CHEST PAIN IN A YOUNG PATIENT

Rasciute B[1], Ruseckaite R [2] , Juknevicius V[3] , Serpytis P [2]
[1] Faculty of Medicine, Vilnius University, Vilnius, Lithuania
[2] Clinic of Emergency Medicine, Institute of Clinical Medicine, Faculty of Medicine, Vilnius University, Vilnius, Lithuania.
[3] Clinic of Cardiac and Vascular Diseases, Institute of Clinical Medicine, Faculty of Medicine, Vilnius University, Vilnius, Lithuania.

EUSEM PRAGUE 2019 12-16 OCTOBER
THE EUROPEAN EMERGENCY MEDICINE CONGRESS
www.eusem.org

Background

Around 20 percent of all patients who arrive to emergency department (ED) complain of chest pain. Acute coronary syndrome (ACS) diagnosis is based on clinical presentation, electrocardiogram (ECG) and repeating troponin test. However, sometimes cardiac stress test needs to be done to confirm coronary artery disease (CAD) after exclusion of ACS. Important thing not to forget - age is non-essential factor for CAD.

Brief medical history

The 36-year-old male presented to the emergency department (ED) complaining of recurrent chest discomfort with radiation to the left arm and general weakness. Initial ECG recorded sinus rhythm with ST segment 2-3 mm depression in V4-5 leads. His medical history revealed no significant findings, except the smoking. During the physical examination, pathological symptoms were not detected, except for elevated blood pressure (152/97mmHg).

Misleading elements

The physicians decided to repeat ECG which recorded sinus rhythm with delta waves. In addition, blood testing was performed, but there were no significant changes in D-dimer and troponin I (TnI) concentrations. Patient noted previously established arrhythmia and similar pain episodes during physical activity in the past. All symptoms suggested the diagnosis of Wolff – Parkinson – White (WPW) syndrome and transesophageal electrophysiological study was performed in ED. After a stimulation, conductivity in the bundle of Kent was up to 160 bpm and up to 170 bpm in atrioventricular node. The results confirmed WPW syndrome diagnosis and the patient was discharged.

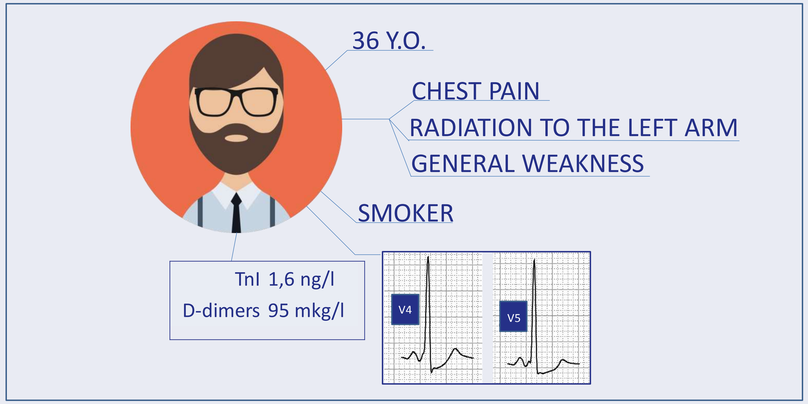

Fig. 1. Brief medical history of the patient.

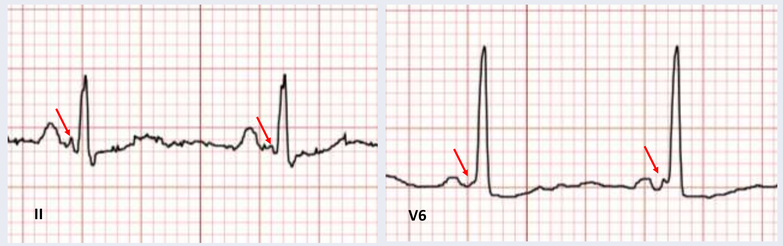

Fig. 2. Patient's ECG with visible short PQ intervals and delta waves in II and V6 leads.

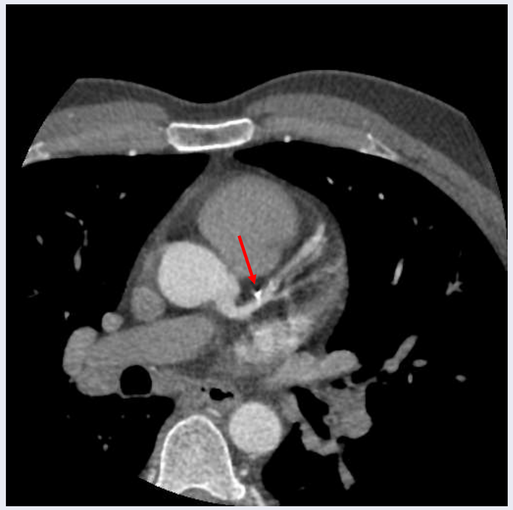

Fig. 3. Patient's CTA: visible atherosclerotic plaque in left main coronary artery.

Helpful details

The patient visited cardiologist next week. ECG recorded sinus rhythm, short PQ interval and delta waves in I, aVL, V4-6 derivations. During cardiac stress test, reaction to exercise was adequate, rhythm disturbances were not registered. However, ST depression in V4-6 leads remained when submaximal heart rate was reached. Considering chest pain episodes in the past, cardiologist decided to carry out coronary computed tomography (CTA). Atherosclerotic plaque narrowing of 50 % were found in left main coronary artery (LCA) continuating to ostium of left anterior descending artery (LAD). Further investigation led to coronary angiography. Stenotic changes of 20 % were found only in LAD.

Differential and actual diagnosis

Low level of D-dimer allowed physicians to reject aortic dissection. Paroxysmal supraventricular tachycardia should be considered, but short PQ interval length and delta waves in ECG led to another diagnosis. However, recurrent chest pain implies about acute coronary syndrome though it was rejected because of normal TnI rates.

Educational and clinical relevance

This case is a representative example of a patient with preexcitation changes in ECG of WPW syndrome. It occurs only in 0.1-0.3 percent of general population. However, we should not hold on to one diagnosis if there are symptoms that could be a sign of a more frequent condition. The case shows that despite the patients young age and negative blood tests of myocardial injury, physicians should not exclude coronary artery disease. Furthermore, detailed investigation should be performed to establish accurate diagnosis.