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CLINICAL FEATURES OF THE COURSE OF ACUTE MYOCARDIAL INFARCTION IN INDIVIDUALS OF WORKING AGE AGAINST THE BACKGROUND OF INTACT CORONARY ARTERIES (Clinical case)

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Abstract:
This scientific paper presents a clinical case of acute myocardial infarction (AMI) in a patient of working age. This study was conducted at the Samarkand Regional Branch of the Republican Specialized Scientific and Practical Medical Center of Cardiology (SRN RSNPMC). The object of the study was a 44-year-old patient with AMI. During percutaneous coronary intervention (PCI), coronary angiography did not reveal changes in the coronary arteries. Echocardiography revealed changes in local contractility, without impairment of global contractility. Taking into account the nature of changes in the level of cardiospecific enzymes, ECG dynamics, the final diagnosis was: Ischemic heart disease. Non-transmural myocardial infarction with ST segment elevation with transient (thrombotic) occlusion of the left coronary artery, anterior septal wall with the apex capture.

Keywords: acute myocardial infarction, coronary artery, working age, coronary angiography, etc.

RELEVANCE

Coronary heart disease (CHD) is one of the most widespread diseases of the cardiovascular system (CVS) in all economically developed and developing countries of the world. Numerous clinical and epidemiological studies indicate a progressive decrease in the incidence of morbidity, disability and mortality from coronary heart disease among the population, which is especially alarming, the development of this disease in young people [1, 5,10]. The mortality rate from coronary heart disease in people aged 25-44 years is 10:100,000. Among all the dead, almost 30% are young people (more than 560 thousand people per year), 80% of them are men, which is 4.1 times higher than the mortality rate among women of this age [2, 6, 11].

The clinical course and picture of coronary heart disease at a young age is variable and the disease can debut with the so-called acute coronary syndrome (ACS) (unstable angina and acute myocardial infarction) or sometimes the first manifestation of coronary heart disease is the so-called sudden coronary death. However, CHD often immediately assumes the character of a chronic disease, clinically manifesting stable/unstable angina pectoris [3, 7, 12].

The main cause of coronary artery disease at a young age is atherosclerosis in the coronary arteries (CA). The prevalence of atherosclerosis in young people was assessed in a study of autopsies of 760 people aged 15 to 34 years (victims of accidents, suicides or murders). Atherosclerotic plaques were detected in 2% of men and were absent in women aged 15 to 19 years. Between the ages of 30 and 34, atherosclerotic plaques in the CA were observed in 20% of men and 8% of women, while stenoses of more than 40% in the anterior descending artery were detected in 19% of men and 8% of women [4, 8, 13].

In the absence of atherosclerotic changes, coronary heart disease in young people can develop in about 20% of cases [14, 19, 23]. Congenital anomalies of the CA cause about 4% of cases of coronary heart disease in young patients [16, 20, 24] and the most significant anomalies for the development of myocardial ischemia and sudden cardiac death are the departure of the CA from a place not typical for them, such as the pulmonary artery, the trunk of the left CA or the anterior interventricular branch of the right sinus Valsalva, the left sinus Valsalva or the anterior interventricular branch, intramyocardial stroke of the CA [17, 25]. The clinical picture of these anomalies may be manifested by pain of varying intensity in the chest, syncopal conditions, especially during physical exertion. Sometimes the first clinical manifestation of these abnormalities may be sudden death, especially in young athletes and military personnel.

In 5% of cases, AMI can develop in young people with CA embolisms: thromboembolism of the non-compact myocardium of the left ventricle (LV), which is caused by pronounced trabecularity and deep intertrabecular spaces, which can cause stagnation of blood flow and the formation of blood clots in the LV cavity [18, 22]; paradoxical thromboembolism through an open oval window; non-thrombotic emboli in endocarditis, heart tumors such as myxoma and papillary fibroelastoma [12, 16, 19].

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Spontaneous CA dissection is a rare cause of acute MI, which is more common in patients younger than 50 years of age and in women. In young women, spontaneous CA dissection can account for up to 25% of MI cases [26, 30]. The causes of coronary dissection are not fully understood. Other rare causes of coronary heart disease at a young age include CA spasm, which can develop due to hyperreactivity of CA smooth muscle cells in response to endogenous stimuli (in vasospastic angina pectoris) and when exposed to exogenous vasospastic agents (cocaine or methamphetamines)[27, 29]; nonspecific aortoarteritis (Takayasu's disease), which occurs in 2-3 cases in 100 thousand people, mainly in women under 40 years of age (male to female ratio 1:9) and when involved in the CA process, it is extremely difficult with repeated large-focal AMI [18, 28]; chest injury causing thrombosis or dissection of the CA; significant physical stress with focal myocardial damage; intoxication (lead, alcohol, lamp gas, anthabus); pheochromocytoma; hypothyroidism [23, 30].

The term MINOCA implies the absence of hemodynamically significant stenoses (less than 50%) in angiography in patients with AMI. Currently, AMI without coronary artery obstruction (AMBOK) is considered as an initial working diagnosis, requiring the exclusion of individual causes of an increase in serum troponin levels and a comprehensive examination to establish a specific etiology [17, 24].

Thus, when studying all the above-listed significant FR associated with the early development of coronary heart disease in young patients, it will help expand the understanding of the causes of development, progression and features of the course of diseases, which will be most significant for improving early diagnosis, therapy, development and implementation of preventive programs in this category of patients.

A clinical case. Patient A. 34 years old was admitted on 03/01/2024 by ambulance to the Samarkand regional branch of the Republican Specialized Scientific and Practical Medical Center of Cardiology with complaints of severe pain behind the sternum of a stabbing nature, radiating under the shoulder blade, in both arms, shortness of breath not related to physical exertion, moderate general weakness. From anamnesis, the patient works as a private entrepreneur. He smokes from bad habits, sometimes drinks alcohol, eats incorrectly, leads a sedentary lifestyle, often gets into a stressful situation. It is known from the anamnesis of the disease that a month ago, while sleeping about 2-3 o'clock at night, he developed intense pain behind the sternum of a stabbing nature, with irradiation in both arms, numbness of the hands, accompanied by general weakness, sweating, a feeling of lack of air, and a single vomiting.

On objective examination: the general condition of the patient is severe, consciousness is clear, hypersthenic physique, Skin and visible mucous membranes are pink. Breathing is clear BDD 19 in 1 minute. The heart tones are slightly muted, the boundaries are not expanded, blood pressure is 110/70 mmHg. the pulse is rhythmic 88 beats per 1 minute. Electrocardiography showed ST elevation in leads I, II, III, AVF, V1-V4, and suspected acute coronary syndrome with ST segment elevation. Thrombolytic streptokinase therapy was performed, he was transferred to the department of endovascular surgery to perform percutaneous coronary intervention, no changes in CA were detected during coronary angiography.

Laboratory tests showed an increase in leukocytes to 13.07 x 109/l, troponin I to 26166 n/L, AST to 159.2 el/L, ALT to 39.9 u/L, CK to 1563 U/L, CK-MV to 158.4 u/L, CRP to 43.3 mg/l. Echocardiography revealed changes in local contractility, without disruption of global contractility.

During treatment, the patient was prescribed double antiplatelet, gastroprotective, lipid-lowering, analgesic therapy. In dynamics, during repeated laboratory examination, positive changes were revealed: leukocytosis to 9.28x109/ l, an increase in troponin T to 795.2 ng/ l, a turn in the level of cardiospecific enzymes with a tendency to normalization was observed. The dynamics of changes in the ECG picture with the appearance of signs of a violation of repolarization by the type of subepicardial ischemia in the anterior septum and apical wall, which were persistently noted in subsequent studies. Ultrasound showed no signs of effusion into the pericardial cavity. During the diagnosis, the patient underwent an MRI of the heart, according to which no signs of myocarditis or fibrous changes in the heart of the ventricular myocardium were also detected. Taking into account the absence of changes according to the MRI of the heart, the nature of changes in the level of cardiospecific enzymes, the dynamics of the ECG, the final diagnosis was formed: coronary heart disease. Nontransmural myocardial infarction with ST segment elevation with transient (thrombotic) occlusion of the left coronary artery, anterior septum wall with seizure of the apex.

CONCLUSIONS: thus, the development of AMI can be caused without atherosclerotic CA damage, especially in young people. Given these circumstances, clarifying the

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causes of each case of increased troponin levels and the development of AMBOK is considered an important moment in the diagnosis and treatment of this disease, especially among young people, as it allows you to determine the further tactics of patient management, which affects the quality of life of the patient and the prognosis of the disease.

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