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CLINICAL AND BIOCHEMICAL DIFFERENCES OF AORTIC DISSECTION AND MYOCARDIAL INFARCTION

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Abstract
The problem of aortic dissection remains relevant to date due to the difficulty of diagnosis and poor prognosis-fatal outcome. In type II aortic dissection, the pain is usually localized behind the sternum and simulates an acute myocardial infarction. This situation is especially often observed in cases where the dissection actually extends to the aortic root and contributes to the compression of the coronary arteries, and according to H Borsi, the most common pain syndrome in the dissection of the aorta type I according to De Bekey has to differentiate with the process of dissection of coronary vessels and thus disorders of coronary circulation.

Keywords: aortic dissection, myocardial infarction, differential diagnosis

Relevance

Among the diseases of the cardiovascular system of the expanding aneurysm, aortic aneurysm is a common disease, but it is not always recognized. Although it is currently possible to diagnose a dissecting aortic aneurysm has expanded, but in real clinical practice, diagnostic errors remain high.

Aortic dissection (dissection) or dissecting aortic aneurysm is the development of an intrahepatic hematoma due to the penetration of blood into a degeneratively altered layer of the aortic wall, followed by its separation mainly in the distal direction.

The most common risk factor associated with RA is hypertension, which is observed in 65-75% of individuals, mostly poorly controlled [2]. According to the IRAD registry, the average age of patients is 63 years; 65% are men. Other risk factors are pre-existing aortic or aortic valve diseases, a family history of aortic diseases, heart surgery, smoking, blunt chest injuries and the use of narcotic drugs (for example, cocaine and amphetamines).[2].

Mortality from dissection is 2-3 times higher than that of ruptured aortic aneurysms: 40% of patients die immediately after the development of dissection, 1% within an hour of the onset of the disease and from 5 to 20% – during or shortly after surgery (Meszaros I.et al., 2000, Clouse W.D. et al., 2004) [2].

The classification is based on the etiology, pathogenesis, localization, form, type and course of the disease, taking into account the presence or absence of aortic dissection. According to the Stanford Classification (1970), aortic dissections are divided into two types: A - with or without involvement of the ascending aorta and arch (proximal dissection), B–with aortic dissection farther than the left subclavian artery (distal dissection).

According to the classification of M. De Bakey (1982) aortic dissection is divided into three types: type I (50%) - from the ascending aorta to the bifurcation of the abdominal aorta; type II (35%) - only the ascending aorta; type III (15%) - captures the entire descending thoracic aorta, and III In the type - descending and abdominal aorta. In 2000, Yu.V.Belov supplemented the classification of M. De Bakey with type IV, when the aortic dissection begins from the level of the diaphragm or below it in the abdominal region.

There are three types of flow: acute (14 days), sub-stream (15-90 days), chronic ((>90 days). Chronic RA can be either uncomplicated with a stable course of the disease, or complicated by visceral or peripheral [1,2].

Clinic: According to the literature, three relatively constant symptoms prevail in the clinical picture of acute aortic dissection: pain, hypertension and tachycardia. Aortic dissection in 90% of cases is accompanied by pain, the pain is so intense that it is often compared to a "fatal blow", and it is usually partially stopped only by the use of narcotic analgesics. Most often, patients indicate the occurrence of pain syndrome during physical activity. The most frequent localization of pain is the chest (80%), while back or abdominal pain occurs in 40% and 25% of cases [2]. Acute aortic dissection most often occurs against the background of arterial hypertension. Arterial hypertension is one of the risk factors for the development of aneurysm and aortic dissection, especially in the presence of degenerative connective tissue diseases and atherosclerosis. In the anamnesis, either at the moment of examination, high blood pressure is detected in patients, or at the time of the appearance of a sharp pain attack. Aortic dissection with severe pain syndrome is often accompanied by a high level of catecholamines in the blood. According to the majority of authors, a potential risk factor for aneurysm rupture is the presence of the following signs below: diastolic blood pressure above 100 mmHg, more rarely, the posterior aortic size of more than 5 cm against the background of severe chronic obstructive pulmonary diseases[2].

Dissection in the proximal aorta is accompanied by pain in the anterior chest, neck, and with distal dissection of the aorta, the pain is localized in the interscapular region. With type I aortic dissection, the pain moves to the interscapular region, and then gradually descends along the spine to the lumbar region. In type II aortic dissection,

pain is usually localized behind the sternum and simulates acute myocardial infarction. This situation is especially often observed in cases where the dissection actually extends to the aortic root and contributes to the compression of the coronary arteries.

According to H Borsi, the most common pain syndrome in De Bekey type I aortic dissection has to be differentiated from myocardial infarction due to the involvement of coronary vessels in the dissection process and thus disorders of coronary circulation.

The differential diagnosis of aortic dissection and myocardial infarction is presented in the table

Diagnostic feature	**Aortic dissection**	**Myocardial infarction**
Anamnesis	Hereditary syndrome, traumatic injury of the chest	Angina attacks, risk factors for coronary heart disease.
The onset of the disease	Acute, sudden, immediately in severe form	Gradual, often with prodromal symptoms
Pain	Very strong, tearing, in the chest (dissection in the proximal part), in the interscapular region (dissection in the distal part) with irradiation to both shoulders, neck, occiput, vertebral column, migrating nature of pain.	Pressing or compressing the chest, often with irradiation into the shoulder and arm.
Shock	Precedes pain	Usually comes after the pain
Синкопальное состояние	Sudden loss of consciousness, fainting	Not typical. It may occur with rhythm and conduction disorders.
Neurological disorders	Ischemic paraparesis, paralysis, paraplegia, acute cerebrovascular accident	Absent
Tachycardia	Often	Often
II tone	Weakening or disappearing	Normal
Diastolic noise	The intensity appears or increases at the Botkin point and on the aorta	Absent
Systolic noise	As much as possible, in the second-third intercostal space	At the top or at the Botkin point
Blood pressure	High	Increases slightly in the first hours, and then the usual or decreases
Breath	Sharp weakening in the left half of the chest when bleeding into the pleural cavity	Rarely broken
Hemopericardium	Often	Rarely
Pericardial friction noise	Often	May be
Leukocytosis	Have	Have
Anemia	Increasing anemia	Not typical
Serum transaminase levels	Normal, little changes	Promoted
Hyperbilirubinemia	There is due to hemolysis	Not typical
Radiograph	Limited or diffuse swelling of the aortic shadow and pulsation of its wall	Normal or with signs of early congestion in the lungs
Electrocardiogram	Hypertrophy and overload of the left ventricle	ECG signs of myocardial infarction are detected

The most accurate and timely diagnosis of aortic dissection is possible when comparing the clinical picture of the disease with the data of instrumental studies, such as transthoracic and trans-esophageal echocardiography, computer and magnetic resonance imaging of the aorta with contrast, aortography.

These research methods not only make it possible to establish a correct diagnosis, but also the volume and nature of the aortic lesion, and, accordingly, the tactics of management of such patients - in most cases, surgical treatment, since conservative therapy using intravenous administration of nitroglycerin, beta–blockers, ACE inhibitors with a decrease in blood pressure can achieve only temporary improvements – stabilization of the condition, but does not determine the fate of the patient in any way. Constant monitoring of blood pressure, diuresis, ECG monitoring is necessary.

Surgical treatment is more effective in patients with type I-II aortic dissection, conservative in type III [1]. In conservative management: the main cause of death in patients with type I-II aortic dissection is cardiac tamponade, less frequent cause is occlusion of the main branches of the aorta.

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