

# MICROVASCULAR ANGINA "X SYNDROME"

## CLINICAL SIGNS

Murodullayev Khumoyun Izzatillo o'g'li,

Pardayev Dilmurod Shermuhammadovich,

Musurmonova Marjona Samandar qizi

Samarkand State Medical University "The Direction of Rheumatology"

1st Clinical Internship-Students Stage

Khasanov Farrukhjon Sherali o'g'li

Scientific Supervisor Samarqand, O'zbekiston

### Abstract

Anatomical, physiological and histological structure of the heart. Connection with other ischemic heart diseases. Microvascular angina is different from other angina. Control of the heart through the blood and nervous system. How does microvascular angina have a negative effect on other diseases. Origin of angina pectoris among the population. Functional and morphological changes of microvascular angina and measures to prevent this disease.

**Keywords:** Ischemic heart diseases, microvascular angina, x syndrome.

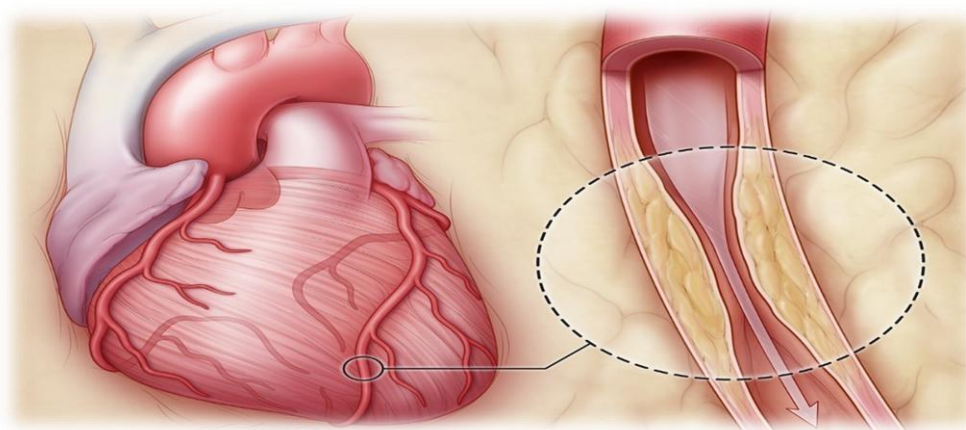
### Introduction

**Article content:** the heart is a four-chamber organ, located between the breasts. The tip of the heart is facing down and forward. Its base is slightly arched and above. The front surface of the heart would be facing the collarbone. The lower part touches the diaphragm. The divisions and ventricles of the heart, the aorta, the pulmonary artery as well as the upper and lower Caval veins, which flow into the right ventricle, and the pulmonary veins, which bring blood to the left ventricle, enter. Stenocardias are the most common form of ciliary in ischemic heart disease. Microvascular stenocardia currently occurs in 15-20% of patients with ischemic heart disease. Stenocardia is an "uncomplicated" arteriosclerosis of large crown vessels. It is manifested in the appearance of tension stenocardia and is caused by the myocardium's demand for oxygen not expanding the resistive arterioles appropriately at the time. The occurrence of stenocardias is not only physical loads ( running, climbing stairs, carrying heavy loads), but also factors that cause the heart muscle to increase its demand for oxygen ( heart failure, tachycardia, emotional tension, irritability, increased blood pressure, increased venous blood volume to the heart ) are the causative factors for stenocardia. In microvascular stenocardia, functional and morphological changes are observed in relatively small crown veins due to which no signs of confirming this disease are detected in coronagraphy. According to the results of many years of research, about 40% of men, among them, 60% of women have ischemic heart disease, starting in the form of stagnant tension stenocardia and gradually progressing. The myocardium is an aerobic muscle tissue that needs continuous consumption of oxygen-saturated blood to produce the energy needed to maintain the pumping





function of the heart. 60-70% of the necessary oxygen can be extracted from Arterial blood, so the myocardium's need for oxygen can only be met by increasing coronary blood flow. The proximal coronary duct consists of epicardial arteries up to 5-0.5 mm in diameter, leading to intramural veins. The Distal coronary canal is represented by arterioles 40 to 400 mm in diameter and capillaries less than 10 microns in diameter, forming the main system of coronary circulation. At rest, in coronary microcirculation, the tone in the canal is high. By increasing coronary blood flow, the myocardium can quickly change its oxygen needs. Capillaries and venules are important components of coronary microcirculation, so systemic and functional disorders at this level (e.g.: decreased blood pressure in the capillary network or microembolization) can lead to the development of myocardial ischemia. Depending on the clinical picture, we can see different pathogenetic mechanisms of microvascular dysfunction.



**Clinic:** the patient's main complaint is the pain syndrome in the heart area. The nature of the pain is compression or pressure, often causing a feeling of heaviness or lack of air. The localization (location) of pain is in the area of the pelvis (sternum), that is, on the left side of the sternum. Pain causes pain in the left hand, left shoulder, or both hands, in the neck area, around the lower jaw, left shovel (scapula). The duration is up to 10-12 minutes. The factors that cause pain can be physical and psycho-emotional load, windy weather, pain after eating, in addition to during rest. The end of the pain attack – with the intake of nitroglycerin, it is not always stopped (in most patients the drug worsens) on the contrary, the patient's condition can be aggravated. Microvascular stenocardia is often observed in women. In most cases, the disease is accompanied by atypical pain syndrome, which is associated with emotional tension. It is characterized by long-term pain in the heart during and after exercise, in addition, it is also often accompanied by a decrease in the pain threshold and changes in the mental state of patients at rest. The pain also appears in a calm state, but lasts 10-25 minutes. Although we give nitroglycerin to improve this condition, it does not work well. In most cases, pain syndrome is accompanied by signs of irritability, irritability, feeling dry, stress, rapid sensitivity of external impressions. In EKG, T indicates that the tooth has changed, RS-T is 0 from the interval. No more than 5-1.5 mm of depression is observed. Selective coronarography does not observe narrowing of the proximal Crown vessels.





**Treatment:** methods of treating patients with X syndrome have not been fully developed. With the help of drugs, there is no special treatment, only the main pathogenetic diseases can be eliminated - improving myocardial perfusion, facilitating the transport of nutrients and oxygen from the blood; therapy should be comprehensive. Requires active interaction of the doctor and the patient. Often, an individual treatment regimen is determined empirically, through the appointment of certain medications and subsequent observation of the dynamics of the disease. The most commonly used drug groups are:

**Beta blockers:** among the most popular antianginal drugs are atenolol, bisoprolol and other drugs. They reduce heart rate, reduce myocardial oxygen demand, improve coronary perfusion, reduce the severity of disease symptoms.

**Calcium antagonists:** from this group, preference is given to Blockers of slow calcium channels - nifedipine, verapamil - CSC. They stimulate vasodilation, increase blood flow to the heart muscle.

**Potassium channel activators:** a promising drug for the treatment of cardiac syndrome is nicorandil. It effectively eliminates hypoxic processes in the heart, helps to restore its blood supply and has a cardioprotective effect.

**Nitrates:** Sublingual antianginal drugs (nitroglycerin) are effective in only half of patients with this pathology. In addition, in 10-15% of patients, taking nitroglycerin to relieve the attack leads to increased pain and other symptoms. Therefore, such drugs should be prescribed very carefully and strictly individually.

As an auxiliary treatment, antiplatelet agents (acetylsalicylic acid), statins to reduce blood lipoproteins, and ACE inhibitors for cardioprotective and hypotensive effects are used. Much attention is paid to physiotherapy - this increases the pain threshold and the resistance of patients to physical activity.

### Conclusion:

Microvascular stenocardia is often observed in women. In most cases, the disease is accompanied by atypical pain syndrome, which is associated with emotional tension. It is characterized by long-term pain in the heart during and after exercise. Therefore, to improve the quality of life of patients, the level and duration of regular physical activity daily (walking, swimming, training on simulators, cardio simulators, the intensity of these activities is maximum 3 times a week and does not exceed 40 minutes, Gymnastics) is determined by the Attending Physician. Changing nutrition is necessary to exclude products with fatty foods, increase the consumption of vegetables, fruits, grain fish, and eliminate mental stress.



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