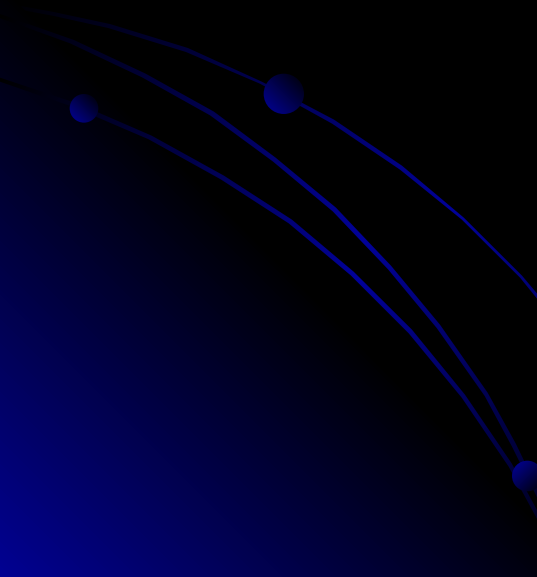
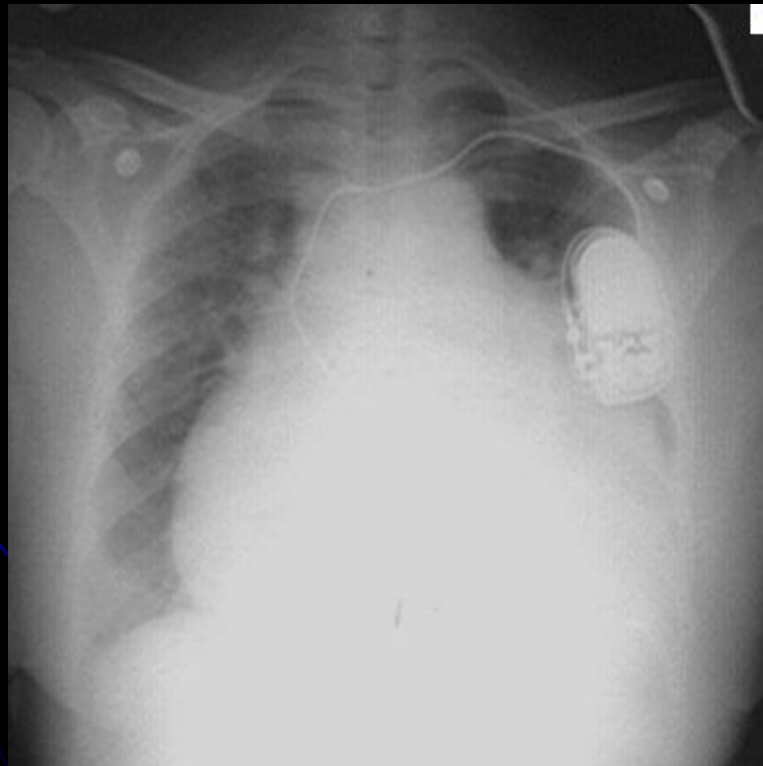
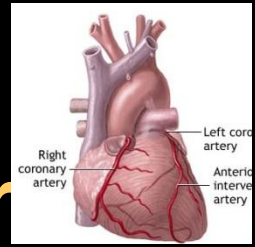


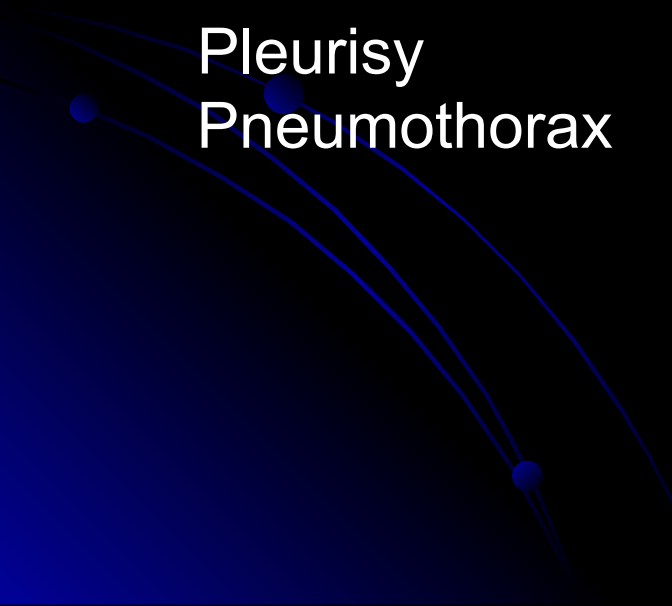
Symptoms in cardiovascular diseases



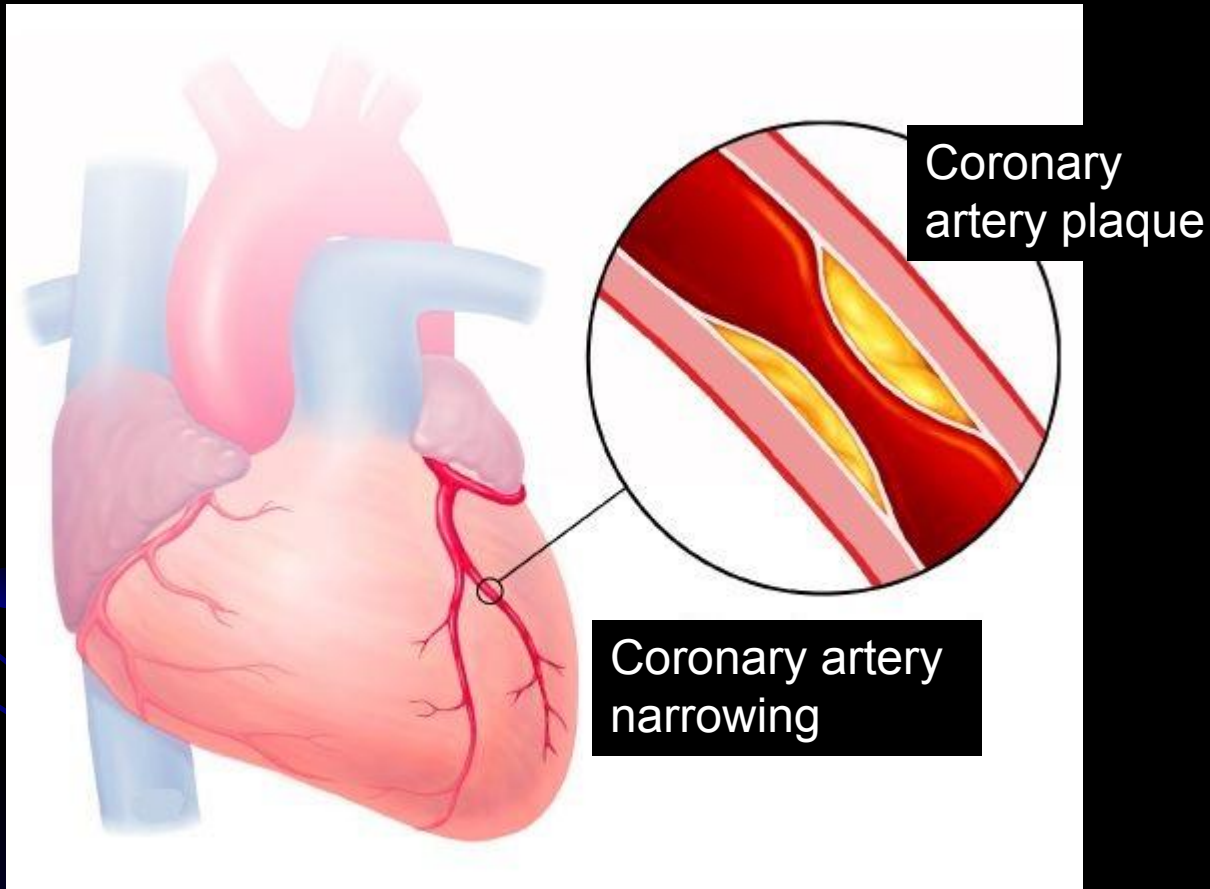
Heart complaints

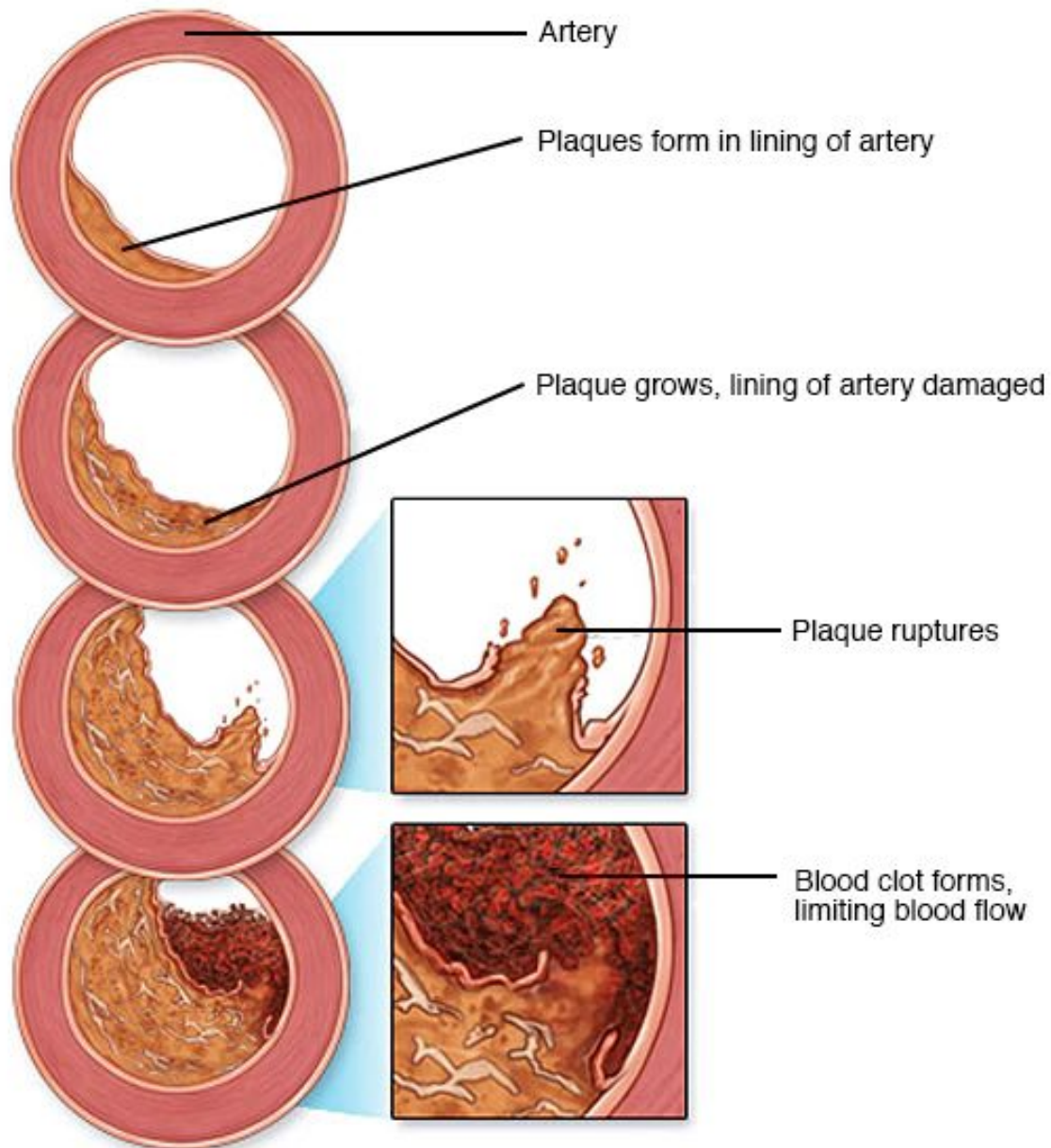
- Chest pain
 - Angina pectoris
 - Heart attack pain
 - Cardialgia (non-coronary pain)
- Palpitations and interruptions in the work of the heart
- Fainting (loss of consciousness, syncope)
- Dyspnea (shortness of breath)
- Cough
- Weakness and fatigue
- Edema

Causes of chest pain

- **Heart disease**
 - Ischemic heart disease
 - Pericarditis
 - **Vascular disease**
 - Aortic dissecting aneurysm
 - PE
 - **Diseases of the lungs**
 - Pleurisy
 - Pneumothorax
 - **Diseases of the gastrointestinal tract**
 - Esophagitis
 - Peptic ulcer
 - Cholecystitis
 - Pancreatitis
 - **Diseases of the musculoskeletal system**
 - **Psychogenic pain**
 - Fibromyalgia
- 

Angina pectoris





Pathogenesis of angina pectoris

The lumen of the artery is narrowed by plaque by 60-70%



Inability to increase coronary blood flow with an increase in myocardial demand for O₂ (increased heart rate, blood pressure, contractility)



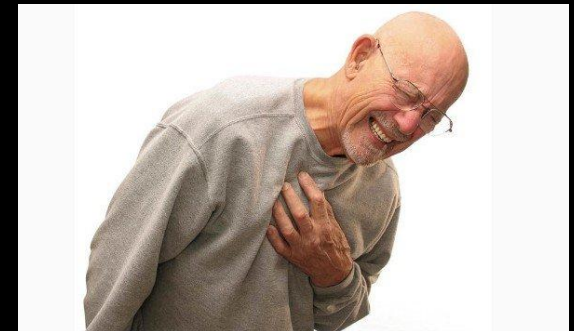
Supply of the O₂ does not meet the O₂ demand




Myocardial Ischemia



Angina pectoris



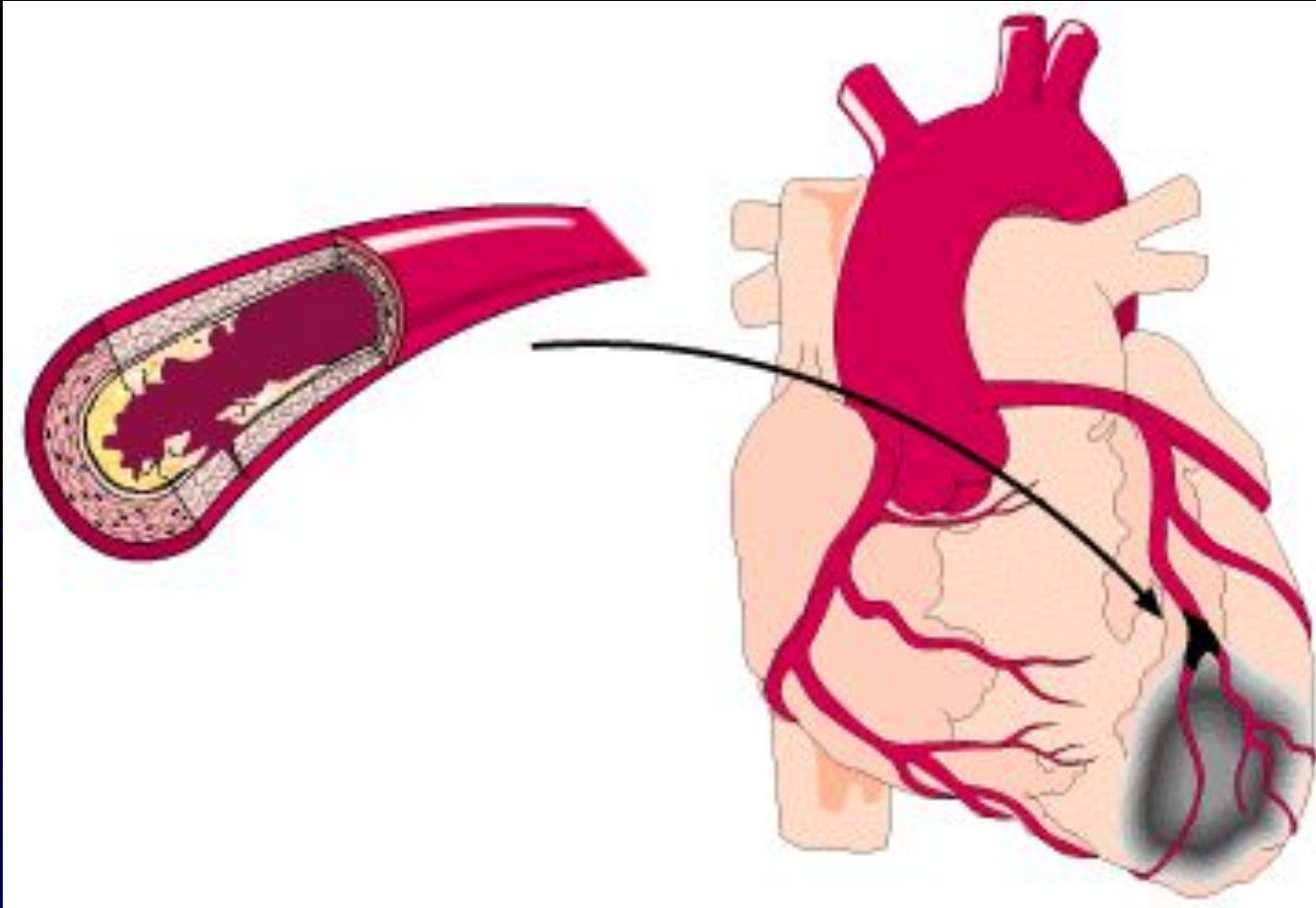
Clinical features of angina pectoris

- Discomfort or pain of a pressing, squeezing character, a feeling of heaviness
 - Typical localization - behind the breastbone
 - Irradiation - to the neck, jaw, epigastrium, or arms
 - Duration of an angina attack - minutes
- 

- Provoked by physical or psycho-emotional stress
- The pain goes away at rest, s/l nitrates relieve the pain in 30 seconds or a few minutes
- Associated symptoms: fear, sweating, palpitations, arrhythmias, shortness of breath



Heart attack pain



Pathogenesis

Plaque rupture with thrombus formation at the rupture site



CA occlusion



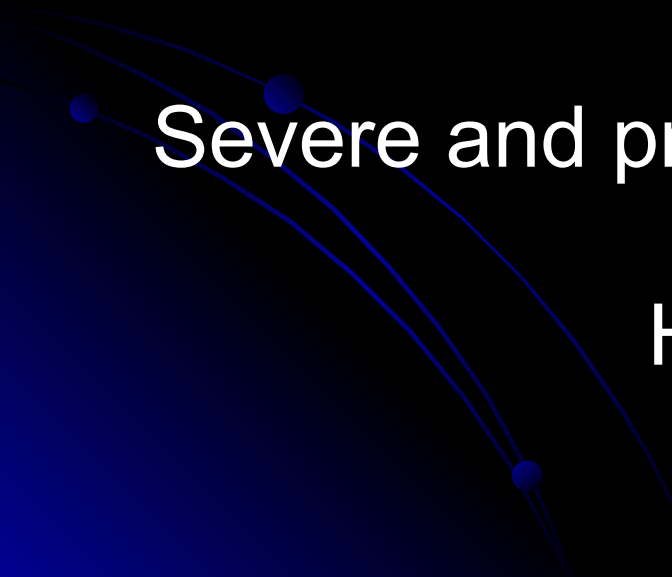
No flow and O₂ delivery



Severe and prolonged myocardial ischemia

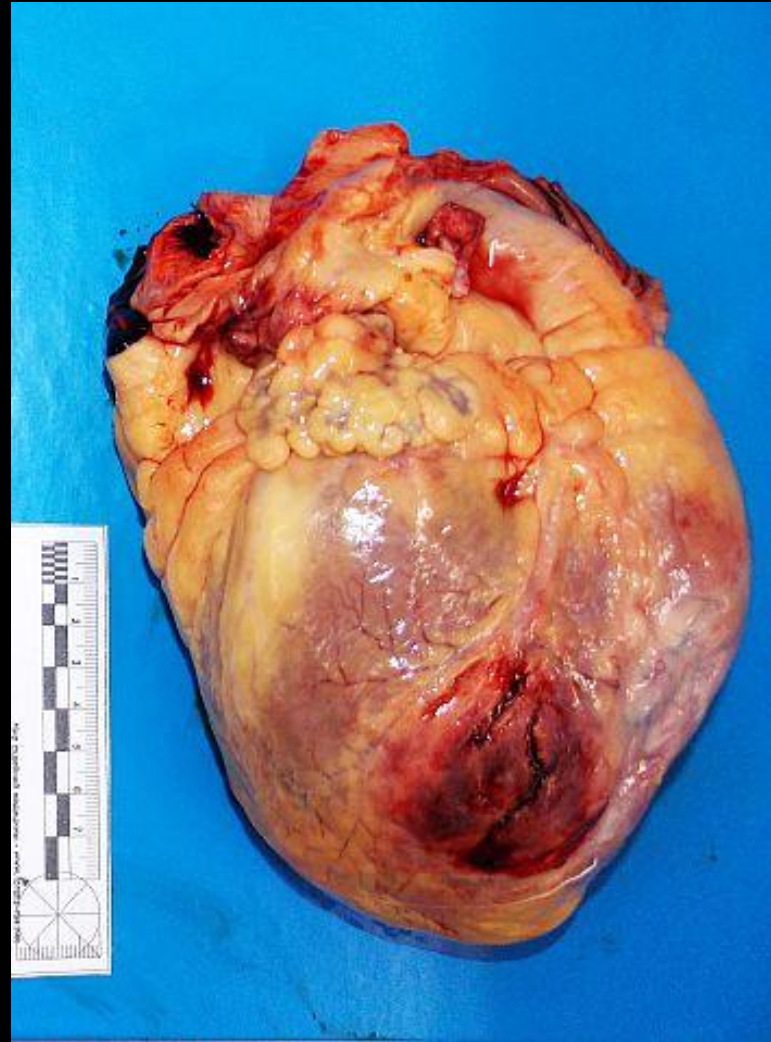


Heart attack pain



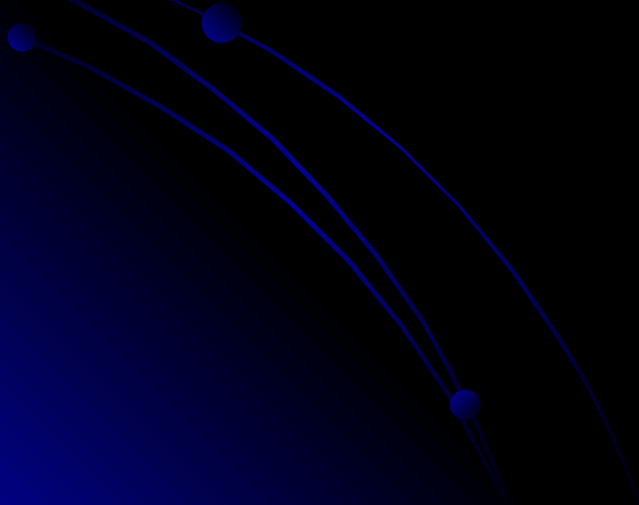
Feature

- The pain is similar in character to angina pectoris
- Stronger and longer lasting (> 30 min)
- Does not go away at rest and after taking nitroglycerin
- Can be stopped with narcotic analgetics
- Often accompanying symptoms: cold sweat, palpitations, shortness of breath, fear of death



NonCoronary pain

- **NCP** - nonspecific chest pains of various nature
- Are established by excluding all other causes of chest pain, primarily angina pectoris



Palpitation

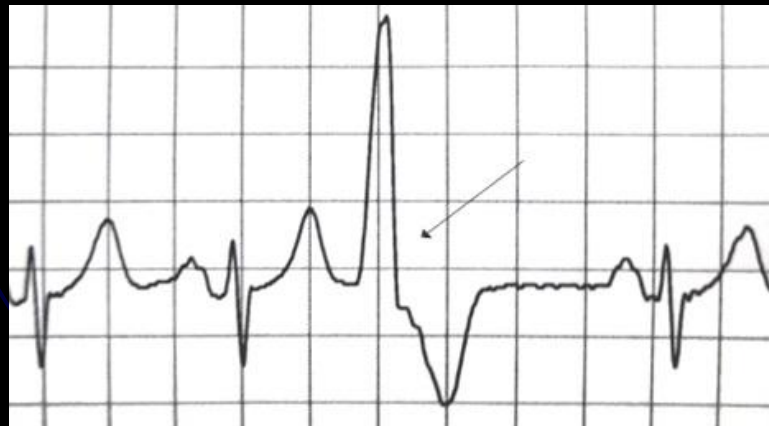
- The sensation of P occurs with an increase in heart rate and / or an increase in the work of the heart
- Constant heartbeats (sinus tachycardia with HF or with thyroid hyperfunction)
- Sudden heartbeats
 - Rhythmic (paroxysmal tachycardia) or irregular heartbeat (atrial fibrillation)
- Ask patient: how attacks are provoked and stopped?
- Duration and frequency of attacks?
- Concomitant symptoms (severe heart rhythm disturbances cause: a decrease in cardiac output - presyncope and syncope, ALVF - dyspnea, ischemia - angina pectoris)

Interruptions of heart beats

- Feeling of extra beats or pause
- Causes: extrasystoles, atrial fibrillation

Ask patient:

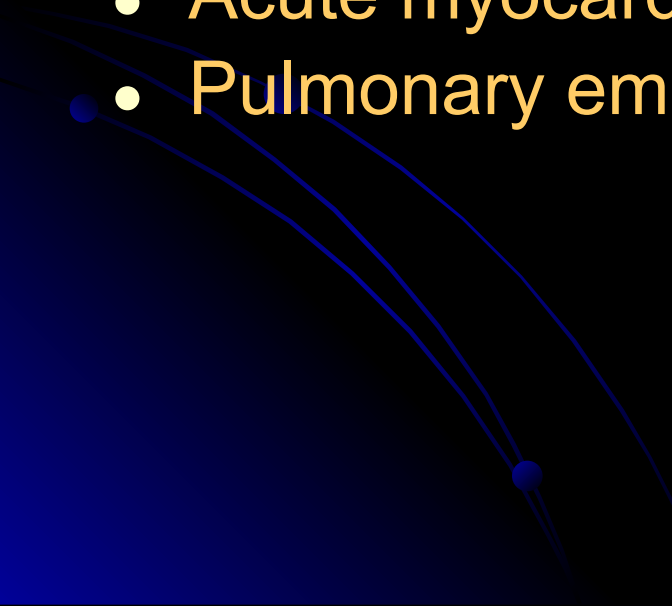
- About provocation and relief
- How often there are happened ?



Syncope (fainting)

The main reason of cardiogenic fainting – sudden decrease of the cardiac output and brain arterial flow deficiency.

Causes:

- **Cardiac arrhythmias** – bradycardia HR < 35-40, tachycardia HR > 150
 - **Acute myocardial infarction**
 - **Pulmonary embolism**
- 

Shortness of breath

- Shortness of breath - a painful sensation difficulty breathing
- The degree of shortness of breath is determined by the level of physical activity
- Cardiac dyspnea is a manifestation of LV HF

Pathogenesis of dyspnea

LV disease



Decreased contractility and / or impaired LV relaxation



Congestion of the blood in the pulmonary circulation



Violation of gas exchange



Excessive activation of the breathing drive center (brain)



Overload of breath muscles



Dyspnea



- In severe LV HF, dyspnea appears when lying down - ortopnea

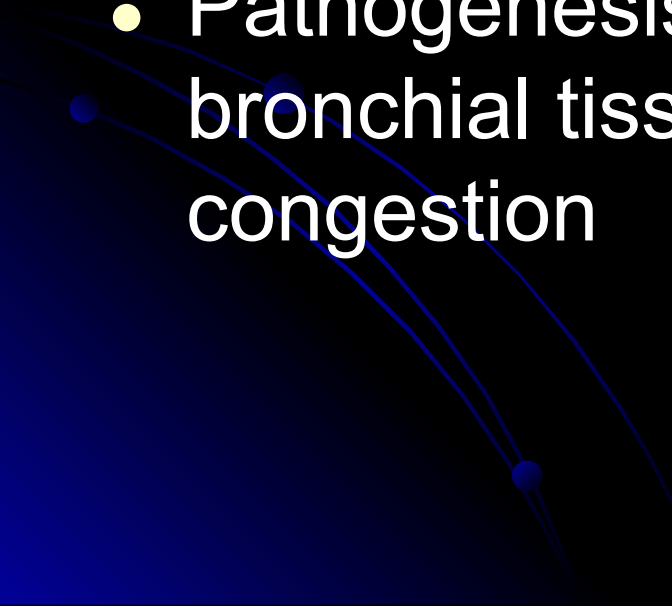


- Pathogenesis : in the supine position
↑ P hydrostatic in the lungs due to the redistribution of fluid from the veins of the LE to the vessels of the chest → increased pulmonary congestion

Nocturnal attacks of cardiac asthma

- Attacks of severe shortness of breath and coughing at night (in the 1st half), which cause the patient to awaken
- Pathogenesis
 - ↓ adrenergic myocardial stimulation
 - Increased blood volume ("resorption" of edema) and venous return
 - ↓
 - A sharp increase in pulmonary congestion

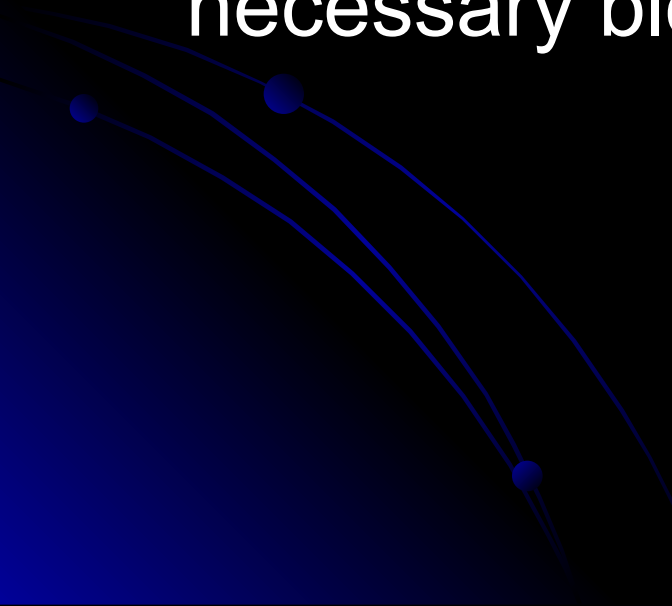
Cough

- Cough is common in LV HF
 - Characterized by the appearance of a dry cough with exertion or lying down (often with shortness of breath)
 - Pathogenesis - edema of interstitial and bronchial tissue with pulmonary congestion
- 

Fatigue and weakness

- Frequent and earliest but nonspecific symptoms of LV HF
- Pathogenesis

Inability of the heart to provide the necessary blood flow for muscle function



Life history

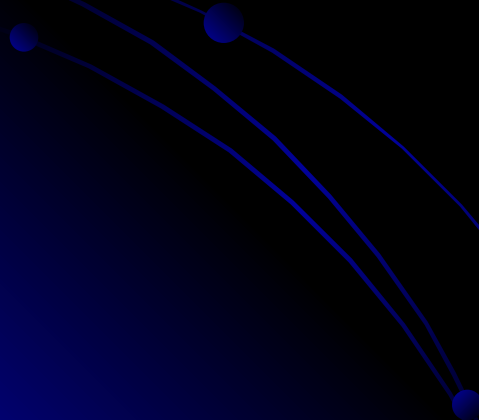
- Age - an increase in the prevalence of arterial hypertension and the likelihood of CHD with age (men > 55 years, women > 65 years - CVD RF)
- Gender - male gender is a risk factor for CVD
- Childhood period:
 - frequent sore throats – rheumatic fever
 - frequent acute respiratory infections, pneumonias, stunting – CHD
- Lifestyle and dietary habits
 - sports loads
 - hypodynamia - lack of exercise (RF CVD)
 - food rich in animal fats and cholesterol
 - occupation (stress, hypodynamia, night job)

- Bad habits
 - smoking (RF CVD)



alcohol abuse

- Gynecological history - postmenopause (RF CVD)
- Family history (hypertension, diabetes mellitus, ischemic heart disease, MI, SD, strokes; early onset of CVD in close relatives)



Smoking accelerates the aging of blood vessels
and heart !!!



General examination

- The severity of the condition is determined
 - by the severity of heart failure,
 - by presence of the coronary syndrome, or high blood pressure
- Consciousness can be impaired with a sharp increase in blood pressure or a fall in CO (cardiogenic shock)
- Ortopnea position - with severe LV heart failure



- Anthropometry
BMI (20-25 kg/m² and waist (80/94 sm)

Obesity and overweight - RF CVD (hypertension, ischemic heart disease, diabetes mellitus)



Skin

- Acrocyanosis (peripheral cyanosis)
↓ cardiac output → slowing blood flow → ↑ O₂ extraction from blood → ↑ concentration of deoxyhemoglobin
- Central (diffuse) cyanosis (right-to-left shunt with CHD or lack of the oxygenation of blood in the lungs)
- Joundice of the skin (cardiac fibrosis of the liver)
- Cold, moist skin (vasoconstriction in severe LV HF)
- Xanthomas and xanthelasms (deposition of cholesterol in the skin with dyslipidemia)



Other symptoms



Edema

- Pathogenesis

RV HF

↓
↑ P in veins

↓
↑ P in capillars

↓
Fluid transudation to the interstitium

↓
Edema

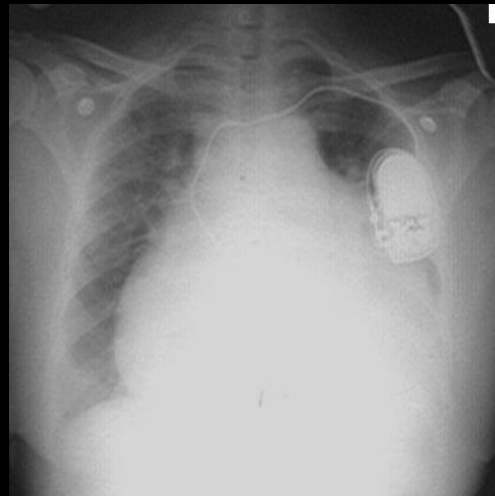


Features of cardiac edema

- Symmetrical, cold, cyanotic
- Distributed by gravity
- Strengthen in the evening, decrease in the morning
- When pressed, a fossa remains
- Visible swelling occurs when > 3 L of fluid has accumulated

Investigation of the lungs in cardiac patient

- Percussion dull sound - sign of hydrothorax
- Fine crackles (late inspiratory) in lower lobes bilaterally – pulmonary congestion



Examination and palpation of the heart area

- Apex beat

Localization (left or left and downward displacement in LV hypertrophy and dilation)

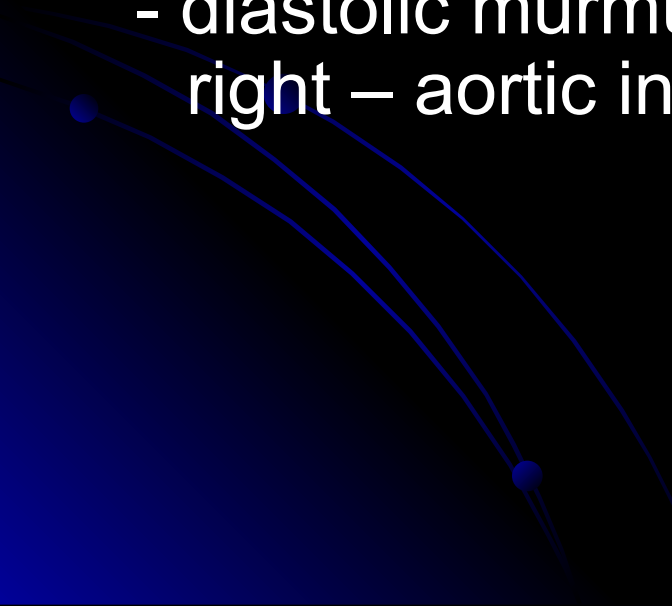
Area (an increase of more than 2 cm – LV dilation)

- Duration (long-term AB reflects LV pressure overload in hypertension or AS)



- **Pathological pulsations (beats)**

- Precardiac beat - 3-4-5th i/s to the left of the sternum (dilation and hypertrophy of the RV)
- Epigastric pulsation (dilation and hypertrophy of the RV)
- In the 2nd i/s on the left - pulsation of the PA (PAH, increased pulmonary blood flow)
- In the 2nd i/s on the right - aortic pulsation (aneurysm of the ascending part of the aorta)

- **Heart murmur** over the region of the heart - palpable low-frequency vibration of the chest wall, caused by a heart noise (appears with an intense noise)
 - **Apex** systolic murmur – mitral insufficiency
 - Systolic murmur at the **base** of the heart:
 - on the right - AS (performed on the vessels of the neck)
 - diastolic murmur at the base of the heart on the right – aortic insufficiency
- 

Acrocyanosis

