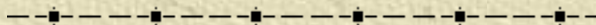


Differential diagnosis

Chest pain



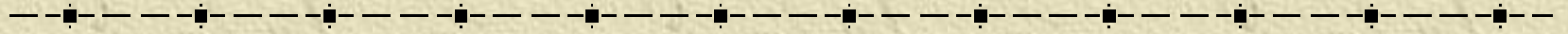
MUDr.Pavlína Piňhová



What is important

- ✦ **Definition**
- ✦ **Anatomy**
- ✦ **Pathophysiology**
- ✦ **Clinical manifestation**
- ✦ **Differential diagnosis**

Definition



✦ Discomfort in the chest area/ pain in the chest area/its origin is in tissues located in this chest area or in its surrounding

Anatomy – what can you find in this area

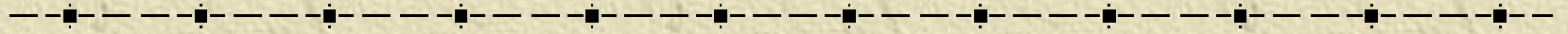
-
- ✦ Chest wall – skin, bones (ribs, sternum, clavicula), intercostal muscles and nerves
 - ✦ Pleura
 - ✦ Lungs
 - ✦ Heart
 - ✦ Mediastinum
 - ✦ Oesophagus
 - ✦ Trachea
 - ✦ Tissues in close connection to chest – stomach, liver, gallbladder

Patophysiology:

Origin and history of the pain: what is to ask about:

- ✦ How does the patient describe the pain?
- ✦ What does the pain cause?
- ✦ What does the pain quiet?
- ✦ How long does the pain last for?
- ✦ Does the pain radiate?

Chest pain



✦ Cardiac origin

✦ Extra-cardiac origin

Diff dg of the chest pain I.

- ✦ **Acute coronary syndrom (AP, IM)**
- ✦ **Cardiac causes of the pain – ischemic origin** – aortic stenosis, hypertrophic cardiomyopathy, severe systemic hypertension, aortic insufficiency, severe anemia/hypoxia
- ✦ **Cardiac causes of the pain – non-ischemic origin** – aortic dissection, perikarditis, mitral valve prolapsus

Diff dg of the chest pain II.

- ✦ **Lungs** – pulmonary embolism, pneumothorax, pneumonia, pleuritis, lung tumours
- ✦ **Gastrointestinal causes of the chest pain** – esophagitis, esophageal spasm, reflux, rupture, dysmotility, peptic ulcer disease
- ✦ **Musculoskeletal system** – thoracic outlet syndrom, degenerative arthropathies, costochondritis (Tietz's syndrom)
- ✦ **Skin** - herpes zoster
- ✦ **Psychological problems** – panic disorder, anxiety disorder

Diff dg - questions

✦ *How severe is the pain?*

✦ *What about vital signs?*

✦ Reason for the *hospital admission*?

✦ Is the pain the same as the patient's usual angina? Is the pain worse with deep breathing or coughing? Is there any associated nausea, vomiting? Is the chest pain worse with swallowing?

✦ **Immediate management:** oxygen, infusion, ECG, sublingual NTG if BP > 90mmHg, ASA

Major threat to life

- ✦ Myocardial ischemia or MI
- ✦ Aortic dissection
- ✦ Pulmonary embolism
- ✦ Tension pneumothorax
- ✦ Mediastinitis

Bedside:

- ✦ **Quick look test** – does the patient look well (comfortable), sick (uncomfortable or distressed) or critical (about to die)?
- ✦ **Vital signs** (breath/blood pressure/heart frequency)
 - ✓ *Hypotension BP < 90 mmHg (IM, PE, PNO)*
 - ✓ *Hypertension (IM, Ao dissection), ↑ pulse pressure*
 - ✓ *Tachycardia – FiS, SVT, VT – urgent cardioversion in case of profound hypotension could be required*
 - ✓ *Bradycardia – ischemia of heart conduction system, β-blocker treatment*
 - ✓ *Breathing – tachypnea, dyspnea*
- ✦ **Look at the ECG !!**

Cardiac cause of the chest pain

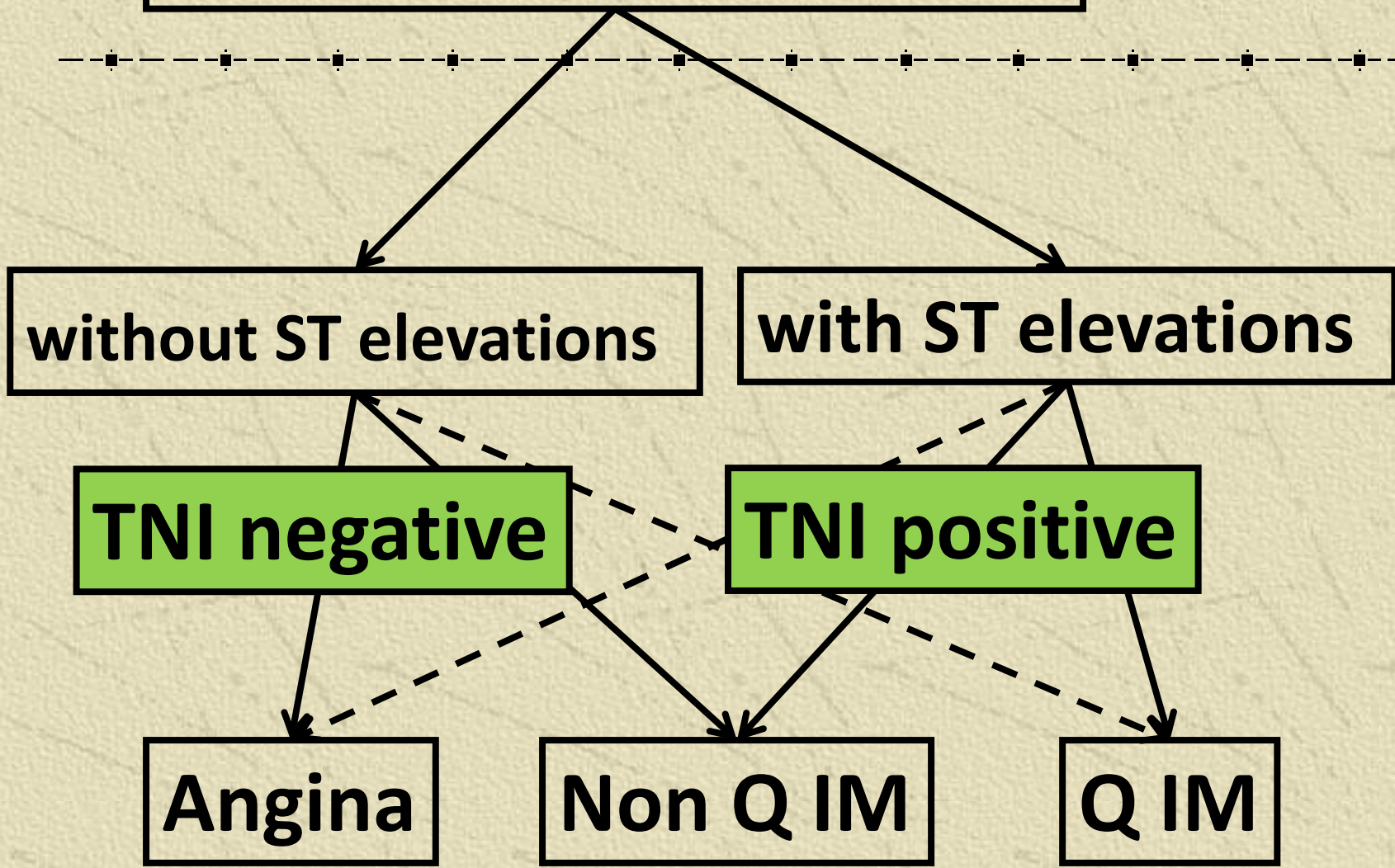
✦ Angina:

- ✓ Pain duration > 2 a < 10 min,
- ✓ pressure, crushing, squeezing, constricting pain behind sternum with radiation to the jaw, shoulders or arms
- ✓ Activation by effort, exercising, cold, psychological stress

✦ Myocard infarction:

- ✓ Pain duration often > 30 min,
- ✓ Pain is more urgent, doesn't quite down after sublingual tablets of NTG, could be connected to the CHF or dysrhythmias

Acute coronary syndrom



Cardiac causes of the chest pain

✦ Ao stenosis:

- ✓ Angina episodes, sudden death
- ✓ Systolic murmur, radiation to carotid arteries

✦ Perikarditis:

- ✓ Pain lasts for hours/days
- ✓ Sharp pain character, retrosternal location, radiates to heart apex or right shoulder, worsen in sitting upright and bending position
- ✓ Pericardial rubs

✦ Aortic dissection:

- ✓ Tearing or ripping pain, in the back chest
- ✓ hypertension, marfanoid body habitus
- ✓ Diastolic murmur, pericardial rub, cardiac tamponade, lost of peripheral pulses

Extracardial causes of the chest pain:

- ✦ **Pulmonary embolism**: pleural pain character, one-sided, dyspnea, tachycardia, hypotension
- ✦ **Pneumothorax**: sudden, one-sided, dyspnea, diminished breathing sounds
- ✦ **Esofageal reflux**: 10 – 60min, burning sensation, retrosternal, in the lying position, radiates to the neck, accompanied by an acid taste in the mouth
- ✦ **Esophageal spasm**: 2 – 30min, pressure, burning sensation, retrosternal, very similar to angina
- ✦ **Peptic ulcer**: burning, long-lasting epigastric pain, mainly follows the food intake

Extracardial causes of the chest pain:

- ✦ **Muskuloskeletal pains:** various presentation, various location, causes by movement, reproducible by pressure during examination
- ✦ **Herpes zoster:** burning or sharp pain, distribution according to dermatomas, herpes eruptions - vesicles
- ✦ **Psychological causes:** various charakter, various location, anxiety, depression, diagnosis per exclusionem