Cardiovascular system. Atherosclerosis. Respiratory diseases.

Dentistry

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Endocarditis

1. Non-rheumatic endocarditis

   non-infectious

   atypical verrucous (Libman-Sacks) – „collagen disorders“; SLE

   non-bacterial thrombotic (marantic, cachectic)

   infectious

   infective bacterial (BE)

   acute – ulcerous- highly virulent bacteria (S.aureus, S.pyogenes)

   subacute – polypous – less virulent bacteria (S.viridans, epidermidis)

Komplikácie: cardiac – valve insufficiency, perforation / rupture of valve leaflets, abscesses formation

   systemic – hematogenous spreading of the infection, septic embolisation, Löhlein nephritis, toxemia

2. Rheumatic endocarditis (rheumatic fever) - verrucous
Endocarditis

• Ao, Mi, (Tri – drugs)

• clinics: fever (often spiking), septic emboli (causing circulatory problems such as stroke or gangrene of fingers), Janeway lesions (painless hemorrhagic cutaneous lesions on the palms and soles), intracranial hemorrhage, conjunctival hemorrhage, splinter hemorrhages, glomerulonephritis, Osler's nodes (painful subcutaneous lesions in the distal fingers),

• DG: blood culture!!!

  lab (CRP, Leu, FW)
  ECHO, EKG

• TH: ATB
Ulcerative acute
Polyposis subacute
**Cardiomyopathy (255)**

- prim. (intrinsic) or sec. (extrinsic) chronic. heart muscle disease with deterioration of myocardial function
- gen., inflammation, ischemia, tox. (alcohol, cytostatics, As, Co, Pb), endocr. and metabol. diseases (amyloidosis)...

**Dilated CMP**
- most common form
- heart (especially the LV) is enlarged and the pumping function is diminished

**Hypertrophic CMP**
- heart muscle (especially of the septum) is thickened
- without or with obstruction of Ao valve
- diastol. dysfunction
Atherosclerosis
- intimal disease of elastic and muscular arteries.
- **chronic inflammatory response** in the walls of arteries, in large part to the endothelial damage and to the deposition of lipoproteins (plasma proteins that carry cholesterol and triglycerides).

**Risk factors**
- **old age**
- **male gender**: premenopausal women 1/5 IM in comparison with men. In postmenopausal women incidens equals.
- **genetical factors**: positive family history
- **hypercholesterolemia**: (↑LDL)
- **hypertension**
- **smoking**
- **obesity**
- **inactivity**
- **stress**
- **alcohol**
- **diabetes mellitus**

...
Atherosclerosis – clinical manifestation

- asymptomatic...angina, claudication
- complications according to organ – IM, aneurysm, ischemia, thrombosis, embolism...

Atherosclerosis - pathogenesis

- chronic endothelial damage (↑permeability for lipids, monocytes, ↑thrombosis)
- deposition of lipids in artery wall (LDL, VLDL, oxidized forms)
- adhesion of monocytes, leukocytes → migration and change to Ma → foam cells → lysis and release of enzymes
- adhesion of thrombocytes
- release of cytokines from Tr, Leu → migration of smooth muscle cells (SMC) from media to intima → proliferation of SMC and collagen deposition
Atherosclerosis – morphology

1) **fatty streaks, plaques** (lipid-laden foam cell accumulation in intima)
2) **atheromas**
central core – cholesterol, foam cells
fibrous cap
   - complication: thrombus formation, embolism, ulceration/rupture, calcification, aneurysm...
3) **fibrous lesions** (scaring of atheromatous plaque)
↑ air volume in aleoli - **emphysema**
↓ air volume in aleoli – **colaps, atelectasis**

**Emphysema of the lungs (141)**

- irreversible dilatation of alveoli because of loss of elasticity and destruction of terminal bronchioli
- included in chronic obstructive pulmonary disease (COPD)
- unbalance between proteases and anti-proteases (↓ α1-antitrypsin – smoking)

**Forms** : centrolobular, panlobular, paraseptal, irregular
**Microscopy** : alveolar wall destruction
**Complications**: PNO (bullous emphysema), chronic bronchitis, cor pulmonale
Pneumonias (86)

Forms:
1. Lobar pneumonia / 2. Bronchopneumonia (lobular)
2. Interstitial pneumonia
   - A. Bacterial pneumonia / B. Primary atypical pneumonia (viral, chlamydiases, mycoplasmal pneumonia)
   - C. Special types (aspirative, hypostatic, ...)

Nosocomial - staphylococcus, G- (Klebsiella, Pseudomonas, Proteus...)

Community acquired - pneumococcus, streptococci, hemophilus, mycoplasma, chlamydia, legionella, viral...

Pathogenesis: inhalation pathway, aspirative, hematogenis dissemination,

Complication: pneumonia with abscess formation
Lobar pneumonia (83)
- *Pneumococcus*
- 4 stages: congestion (intra-alveolar fluid), red hepatisation (Er, fibrin, Neu), grey hepatisation (fibrin, Neu), resolution

Complications: organisation (repair) - lung carnification, empyema, abscess formation, hematogenous dissemination of the infection

Bronchopneumonia (86)
- bacteria (*S.aureus, S.pyogenes, H.influenzae*)

Forms: aspirative, hypostatic, post-operative, dystelectatic, bronchostenotic,

Complications: abscesses, empyema, sepsis
- often bilateral, multilobar
- Neu, exudate extends from bronchi into adjacent alveoli

Interstitial pneumonitis, primary atypical pneumonia
- viruses, mycoplamsa, chlamydia
Tumors of lungs

Classification:

I. Epithelial tumors
   - Benign
     - Papilloma
     - Adenoma
   - Malignant

II. Soft tissue tumors (chondroma, myoepithelioma, ...)

III. Lymphohistiocytic tumors (lymphoma, ...)

IV. Tumors of ectopic origin (malignant melanoma, teratoma, ...)

V. Secondary tumors
Malignant epithelial tumors

a) Adenocarcinoma (lepidic adenocarcinoma, ...)
b) Squamous cell carcinoma
c) Neuroendocrine tumors (small cell carcinoma, ...)
d) Large cell carcinoma
e) Adenosquamous carcinoma
f) Carcinosarcoma
g) ...

Localisation: central (often hilous), peripheral, „Pancoast tumor“ in apex of lungs

Etiology: smokers

Komplikácie : rapid lympho- and hematogenous dissemination
Lung carcinoma

1) **Small cell** - poor prognosis, neuroendocrine activity, small round basophilic cells

2) Non-small cell – more favourable prognosis, different therapy
   - squamous
   - adenocarcinoma
   - large cell

• central (hilus)
• peripheral, specific type – Pancoast tumor in pulmonary apex
Lung carcinoma

clinics:
• coughed, hemoptysis, dyspnoe, chest pain, recurrent pneumonia
• Horner synd., vena cava synd., paresis of n.reccurens, phrenicus, dysphagia
• mts
• paraneoplastic sy.: migrating thrombophlebitis, Lambert-Eaton sy., polymyositis, Cushing sy.(↑ACTH), hyperkalcaemia (↑parathormon)