Pathology of the orofacial region

MUDr.P.Janega
MUDr.A. Janegová

Dentistry

Prof. MUDr. Ľudovít Danihel, CSc.
I. Developmental disturbances of the oral cavity

- **Cleft diseases** *(cheilo-gnatho-palato-urano-schisis)*
  defect resulting from fusion failure of parts of the lips and/or palate during embryotic development

- **Atypical structures** *(lingual thyroid)*

- **Morbus Fordyce** *(atypical sebaceous glands position)*

- **Ankyloglossia** *(abnormal fibrous attachment between ventral part of the tongue and floor of the mouth)*

- **Congenital macroglossia** *(Down synd.)* / **acquired** *(Tu, hypothyreoidism...)*

- **Developmental cysts**
Cleft diseases

- 1:600, ♂, multifactorial etiology
- prevention – folic acid
- suction problems, infections, developmental disturbances of teeth and jaw...
- should be repaired surgically
Cleft diseases

• 1.) typical
  – primary (lip, caudal septum nasi, premaxilla, alveol. processes)
  – secondary (hard and soft palate, uvula)

• 2.) atypical (different regions of the face...)


Cleft diseases

• unilateral

• bilateral
Cleft diseases

• partial

• complete
Cleft diseases

- **submucosal** (skin/mucosa remains intact)
Lingual thyroid

- atypical structure
- in the midline of the tongue
Morbus Fordyce (269)

- sebaceous glands in the oral mucosa
- small (1 – 2 mm), yellowish bodies beneath surface
- 80 % of adults
Ankyloglossia

- abnormal fibrous attachment between ventral part of the tongue and floor of the mouth
- decrease mobility of the tongue
- Th: surgery (frenotomy)
Macroglossia

- **congenital macroglossia** (Down synd.)
- **acquired** (Tu, hypothyreoidism...)


Tongue - *amyloidosis* (2)

- extracellular deposition of fibrillar proteinaceous material (amyloid)
I. Developmental disturbances of the oral cavity

- Nasopalatine duct cyst
- Nasolabial cyst
- Lymfoepithelial cysts (oral, cervical)
- Thyroglossal tract cyst
- Dermoid cyst
Nasopalatine duct cyst

- **medial cyst** in the midline of the anterior palate, intraosseal
- connection between oral and nasal cavity

- lining: different types of epithelium (stratified squamous, ciliated columnar with goblet cells, cuboidal...)
- capsule: fibrous tissue with blood vessels, nerves, lymphocytes
Nasolabial cyst

- in the soft tissue of the anterior mucobuccal fold
- from remnants of ductus nasolacrimalis

- lining: different types of epithelium (pseudostratified columnar with goblet cells, cuboidal...)
- capsule: fibrous tissue with blood vessels, nerves
Lymfoepithelial cysts (321)

- cysts lined by keratinizing squamous epithelium and a capsule containing normal lymphocytes and lymphoid follicles

-oral (extratonsillar lymphoid tissue) and cervical (remnants of branchial clefts)
- oral: anterior floor of mouth, posterolateral tongue
- cervical: lateral aspect of neck

- lining: squamous epithelium
- filled with desquamated keratin
- capsule: lymphoid follicles
Lymfoepithelial cysts (321)
Cervical cyst

Oral cyst
Lymfoepithelial cysts (321)
Ductus thyreoglossus cyst (322)

- **medial cyst** located above the thyroid gland and beneath the tongue
- connection between tongue (foramen caecum) and thyroid gland

- lining: different types of epithelium, mostly squamous
- capsule: thyroid tissue
Ductus thyreoglossus cyst (322)
Dermoid cyst

- **benign cystic teratoma**, also **mature cystic teratoma**
- **originate from aberrant primordial tissue**
- nonmalignant tumor containing a cyst lined by epidermal cells
- it can contain all the elements of the dermis, including skin, hair follicles and sweat glands, and the cyst often contains sebum, hair and calcified bone or teeth
- other cell types may be present as derivatives of the germ layers; ectoderm, mesoderm, or endoderm

Approximately 50% of these tumors that involve the head are found in or adjacent to the orbit
II. Inflammatory diseases of the oral cavity

Cheilitis, gingivitis, glossitis

- Physical reasons - trauma, dental prosthesis, sun radiation, X-rays
- Chemicals - acids, bases, toxins
- Bacterial and viral infections
- Mycotic (candidosis) infections in immunosuppressed patients, antibiotic therapy
- Allergic diseases
- Autoimmune diseases
- Avitaminosis – C, B
II. Inflammatory diseases of the oral cavity

1. **Inflammatory erythema – stomatitis simplex**

   - poor oral hygiene, irritation, medications, allergic reactions, infections, diseases - leukemia, and lack of vitamin C
   - **stomatitis nicotina** (cigars)
   - **angular cheilitis** - iron deficiency anemia, folate or vitamin B deficiency
II. Inflammatory diseases of the oral cavity

2. **Vesicular stomatitis**
   - herpes labialis, zoster, herpangina
II. Inflammatory diseases of the oral cavity

3. **Aphthous stomatitis**
   - white fibrinopurulent membranes surrounded by erythematous halos increased keratinisation
   - extremely painful
II. Inflammatory diseases of the oral cavity

4. Ulcerous stomatitis (Plaut-Vincent)

5. Pseudomembranous stomatitis (diphtheria)

6. Gangrenous stomatitis
II. Inflammatory diseases of the oral cavity

HIV
- candidiasis (oral, esophageal)
- hairy leukoplakia
- HSV, VZV, CMV
- Kaposi sarcoma
- NHL
- chronic non-healing ulcers...
Chronic tongue ulcer
III. Reactive connective tissue lesions

- hyperplastic lesions
- reaction to irritation
- pseudotumors

1. FIBROUS
   - hyperplasia — focal (epulides), generalised

2. OTHER
   - neural, muscle, adipose, vascular, osseous, cartilaginous...
Epulis

= reactive focal connective tissue proliferation of the gingiva

- **fibrous epulis**
- **vascular epulis** (pyogenic granuloma, pregnancy epulis)
- **epulis gigantocellularis** = peripheral giant cell granuloma

- cause: chronic irritation
- mostly on the anterior parts of the maxilla
- may recur unless predisposing factors removed
peripheral fibroma, irritation fibroma, focal fibrous hyperplasia

- overgrowth of fibroblasts with overproduction of collagen bundles as reaction to chronic irritation
- pedunculated or sessile mass, firm, colour of gingiva
- granulation tissue – fibroblasts, collagen fibers
- deposits of calcification or metaplastic bone
Fibrous epulis (20)
Vascular epulis (319)

Pyogenic granuloma

- soft, reddish-purple swelling
- often ulcerations, bleeding
- vascular proliferation forming solid sheets of endothelial cells or numerous small vessels or large dilatated vascular spaces
Giant cell epulis (138)

- hyperplasia of perist
- pedunculated or sessile swelling, dark red, often ulcerated
- multinucleated osteoclast-like giant cells in a rich vascular stroma
Epulis gigantocellularis (138)
Epulis gigantocellularis (138)
III. Reactive connective tissue lesions

**Hyperplastic gingivitis** (243)

- focal or generalised fibrous hyperplasia of marginal gingiva with an associated inflammatory response
- response to hormonal changes (♀ puberty, pregnancy)
- epithelial hyperplasia, fibrous connective tissue with chronic inflammatory cells
Hyperplastic gingivitis (243)
Hyperplastic gingivitis (243)
III. Reactive connective tissue lesions

**Drug-induced gingival hyperplasia**

- drugs (phenytoin, cyclosporine, nifedipine...)

III. Reactive connective tissue lesions

**Granuloma fissuratum** (280)
(epulis fissurata, *inflammatory fibrous hyperplasia*)

- focal proliferation of vestibular connective tissue with an associated inflammatory response to chronic irritation or injury
  (ill-fitting dentures → stimulate proliferation of fibroblasts and collagen synthesis)
- soft, movable, erythematous, lobulated, fissured, exulcerated
- epithelial hyperplasia, hypocellular fibrous connective tissue with inflammatory cells, acanthosis
Granuloma fissuratum (280)
Granuloma fissuratum (280)
IV. Tumors of the oral cavity

- benign
- malignant

1. EPITHELIAL

2. MESENCHELIAL (connective tissue)
   - fibrous, neural, muscle, adipose, vascular, osseous, cartilaginous...

leukoplakia – precancerous lesion
Leukoplakia (271)

- "white patch on the oral mucosa that can neither be scraped off nor classified as any other diagnosable disease"

- reactive, infections (hairy leukoplakia), neoplastic (dysplasia - PRECANCEROSIS!!!, CIS, squamous cell carcinoma)
- SMOKING!!!

- **homogeneous** – flat, uniform, white
- **non- homogeneous** – irregular nodular, thickened surface, with areas of erythroplakia

- clinical diagnosis, wide range of histological appearance!!!
- **acanthosis** = thickening of the spinous layer of the epithelium
- **hyperkeratosis** = thickening of stratum corneum of the epithelium
- **atrophy**
- **dysplasia**
- **CIS, invasive carcinoma**
Progressive leukoplakia (271)
Squamous cell carcinoma (epidermoid carcinoma) (272)

- malignant tumor of epithelial origin
- localization - mostly tongue and lips
- tongue high metastatic potential – lymph nodes, distant organs - lungs
- older patients – alcohol, tobacco, actinic radiation, HPV other infections, mutations in the p53 gene...

- white plaques in the beginning, erythroplasia … ulcer, tumourous mass
- exophytic growth, palpable masses (endophytic form possible)
- elevation above the normal surface is accompanied by deeper invasion and infiltration, and fixation to the „normal“ tissue

- keratinizing epithelial cells - presence of keratin or “keratin pearls” on histologic evaluation
Well differentiated squamos cell carcinoma - GI
Well differentiated squamos cell Ca -GI
Moderately differentiated squamous cell Ca - GII
Moderately differentiated squamous cell Ca with monocellular keratinisation - GII
Poorly differentiated squamous cell Ca - GIII
Hemangioma (25)

- benign tumor of blood vessels
- congenital type - birthmark – hamartoma (90% spontaneously involves)
- flat or raised lesions, reddish/blue/purple
- hemorrhage and bleeding after traumatization

- cavernous and capillary type
- capillary - numerous, small, densely packed capillaries
- cavernous - large, thin-walled blood vessels filled with erythrocytes
Capillary hemangioma (25)
Cavernous hemangioma (320)