

# Therapy of head and neck cysts

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# Definition

- **A cyst is defined generally as an epithelium-lined sac filled with fluid with a connective tissue wall**
- **Cysts are tumour like formation arising from developmental anomalies or inflamatory origin**



# Classification

- **Bone cyst**

**Odontogen** Perinatal cysts, Adult gingival cysts, Primordial cysts, Eruptional cysts, Follicular cysts, Lateral periodontal cysts, Keratocysts

**Non odontogen** Nasopalatine duct cysts, Median palatal cysts, Globulomaxillary cysts, Median mandibular cysts

**Inflammatory** Radicular cyst, Residual cyst, Paradental cyst, Collateral cyst

**Pseudocysts** Simple bone cyst, Aneurismatic cysts, Latent bone cysts

- **Soft tissue cysts**

- Nasolabial cyst
- Lymphoepithelial cyst (branchial or lateral neck cyst)
- Lateral cervical fistula
- Thyreoglossal duct cysts
- Dermoid and epidermoid cysts
- Heterotopic gastrointestinal cysts



# Treatment

- **Surgical treatment**
- **Pathologic examination**
- **Types- depends on the size and location of the cyst**
- **Partsch type I.- cystostomy-marsupialisation**
- **Partsch type II.- cystectomy- enucleation**



# Cystostomy

- Marsupialization refer to creating a surgical window of the wall of the cyst, evacuating the contents of the cyst, and maintaining continuity between the cyst and the oral cavity, maxillary sinus or nasal cavity
- Conversion into an accessorial cavity
- This process decreases intracystic pressure and promotes shrinkage of the cyst and bone fill
- The regeneration of bone cavity takes place slowly after epithelisation, and requires longer time than in the case of enucleation



# Cystostomy

- **The original anatomic conditions are generally not restored, but a satisfactory result could be achieved morphologically and functionally**
- **Advantages – easy technic, we can avoid recurrence**
- **Disadvantages - Considerable aftercare is needed , difficulty in oral hygiene, pathological tissue left without histologic examination**



# Oral cystostomy

- **Partial removal of the cyst lining with insertion of the mucosal flap**
- **Classical Partsch I- marsupialization**
- **Lower jaw**
- **The cyst is opened essentially as for enucleation but the lining is sutured to the mucous membrane at the margins of the opening**
- **The initial incision is usually circular or elliptic and creates a large (1 cm or larger) window into the cystic cavity**
- **The initial incision should follow the line of the edge of the planned opening**



# Oral cystostomy

- **Remove the overlying bone with burs**
- **The cyst is then incised to remove a window of the lining, which is submitted for pathological examination**
- **The contents of the cyst are evacuated and if possible visual examination of the residual lining of the cyst is undertaken.**
- **The cystic wall around the window can be sutured to the oral mucosa.**
- **The cavity should be packed with iodoformic gauze (must be left in 7-10 days)**





# Oral cystostomy

- The mucosal flap is inserted after the maximum possible removal of the cyst wall
- Usually it is a modification of the intention of cystectomy – infected cysts, total removal of cyst wall cannot be performed with certainty (fragile epithelium in consequence of inflammation, danger of damage to the adjacent anatomical structures)



# Oral cystostomy

- In both type- Considerable aftercare is needed
- Full epithelial coverage has to be formed in the bone cavity
- The cavity is initially packed with iodoformic gauze
- After epithelisation a plug (obturator) or extension of a denture is made to fill the cavity and close the opening
- Bony regeneration- cavity fill up from the base and sides



# Decompression

- **Modification of cystostomy with the aim of preparation for secondary cystectomy**
- **The main application of marsupialisation is for temporary decompression of exceptionally large cysts. E.g. where fracture of the jaw is a risk**
- **When enough new bone has formed, the cyst can be enucleated**
- **We open the cyst and we put into the opening a small tube or obturator - decreases the internal pressure , regeneration of bone could happen**
- **Correction of obturator**



# Cysto-rhinostomy

- **Cysts which are situated in the anterior part of maxilla we can maintain continuity between the cyst and nasal cavity**
- **We make a bony window in the lower nasal passage and we close the oral wound primary**
- **Cystic cavity become lined with respiratory epithelium from nasal cavity**



# Cysto-antro-rhinostomy

- Large cyst of the maxilla may be converted to the maxillary sinus
- L or trapezoid shaped flap
- Removal of the cyst wall partially or totally
- Making connection between the two cavity
- Making bony window in the lower nasal passage
- The wound of the oral cavity is tightly closed



# Cystectomy

- **Partsch II- enucleation**
- **Total removal of cystic lesion, shelling out the entire cystic lesion without rupture**
- **Contraindications:**
- **The **size** of the cyst- retraction of clot, may be infected from oral cavity, clot breaks up, 2 cm!**
- **Injury of the surrounding anatomical structures** create oronasal or oroantral fistulae or cause injury to major neurovascular structures or devitalization of healthy tooth



# Cystectomy

- **Infected** cysts - periapical abscess present, primer closure is not recommended
- **Retention of the tooth in follicular cysts**  
marsupialisation may allow its continued eruption into the oral cavity



# Cystectomy

- **L, trapezoid shaped mucoperiosteal flap**
- **Planning the incision- the replaced flap has to cover the bone cavity and sutures has to be in a bony surface**
- **Window is opened in the bone to give adequate access.**
- **The cyst is then carefully separated from its bony wall**





# Cystectomy

- **The entire cyst is removed intact and should be sent histological examination**
- **Apicectomy and root-canal filling if needed**
- **Filling the bony cavity- technical variations**
- **Primary closure with appropriately positioned sutures**



# Cystectomy

- Foreign material is usually not used
- The bone cavity fills with blood clot which then organizes over time- osseous healing will progress- size of a cherry
- Larger cysts-centrifuged blood plasma (PRP)
- Holes are drilled postoperatively into the compact bone
- Autogenous bone



# Cystectomy

- **Using biomaterials**
- **Synthetic bone substituting materials**
- **gelatine-fibrin sponge prevent the retraction of the clot**
- **Bone subs - hidroxil-apatit, beta-trikalcium phosphate**



# Enucleation of cysts

- **Advantages**
- **The cavity usually heals without complications**
- **Little aftercare is necessary**
- **The complete lining is available for histological examination**



# Enucleation of cysts

- Possible disadvantages
- Infection of the clot filling the cavity
- Recurrence due to incomplete removal of the lining
- Serious haemorrhage (primary or secondary)
- Damage to the inferior dental nerve
- Damage to apices of vital teeth projecting into the cyst cavity
- Opening the antrum- maxilla
- Fracture of the jaw- mandibular



**The pictures in the lecture are the own property of University of Debrecen, Oral and Maxillofacial Department of the Faculty of Dentistry .**



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