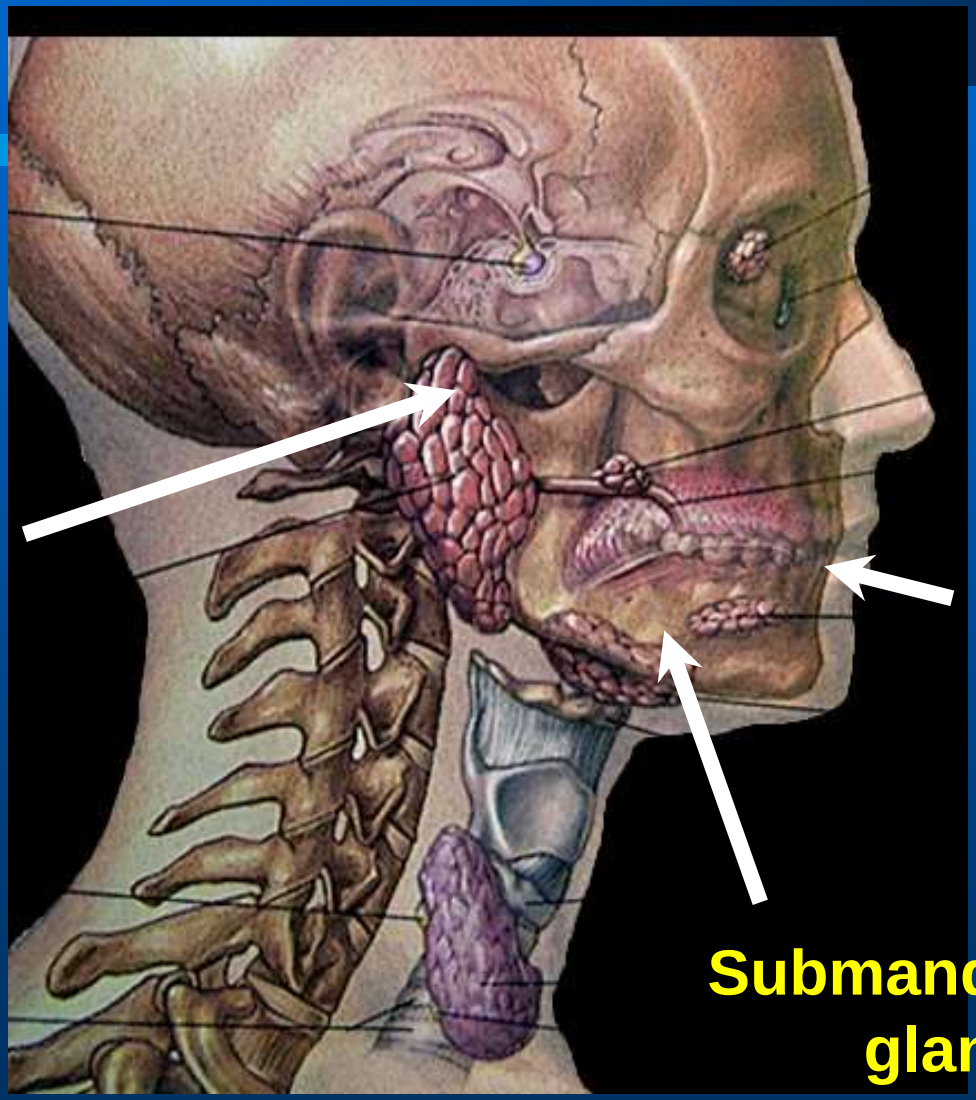
Salivary Gland Diseases

Salivary Glands Overview



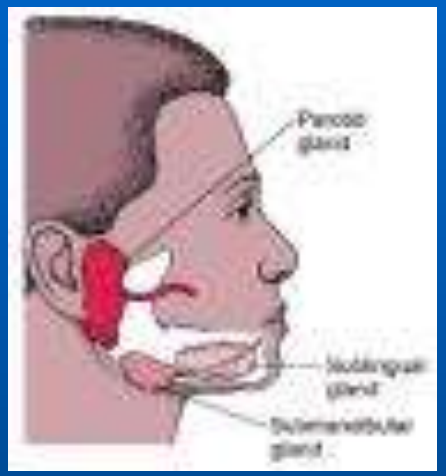
Parotid gland

Sublingual gland

Submandibular gland

Salivary glands - Types

3 Major Salivary Glands



- **Parotid**
- **Submandibular**
- **Sublingual**

Plus many **accessory glands** in the **lip and palatal mucosa**

SALIVA - Functions

PROTECTION

Epithelial lubrication

For tooth: Rinsing

Pellicle coat

ALIMENTARY

Food approval: taste, texture

Mastication

Digestion

Swallowing

OTHER

Vocalization

MATERIALS

Water

Mucins (glycoproteins)

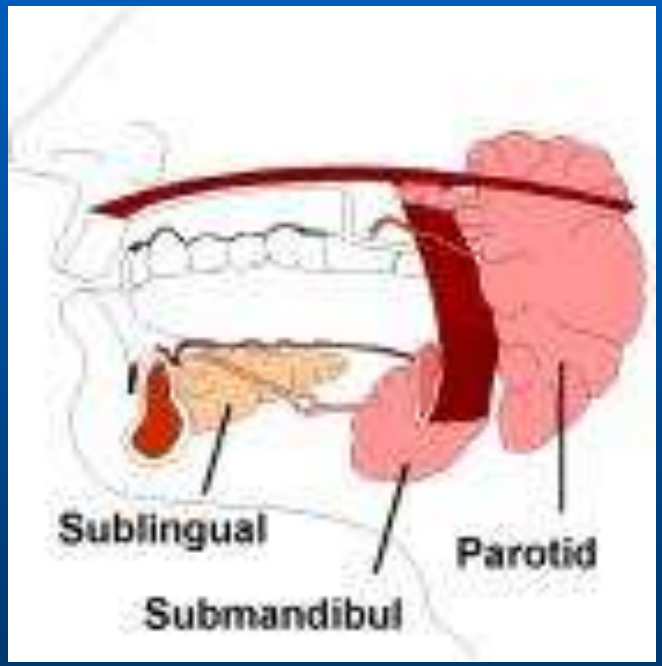
Antibodies IgAs

Lysozyme

Amylase

Salivary Gland Diseases

- Functional disorders
- Obstructive disorders
- Infectious disorders
- Neoplastic disorders



Functional Disorders of the Salivary Glands

Functional Disorders of the Salivary Glands

Sialorrhea (Increase in saliva flow)

(i) Psychosis

(ii) mental retardation

(iii) certain neurological diseases

(iv) rabies

(v) mercury poisoning

Functional Disorders of the Salivary Glands

Xerostomia (Decrease in saliva flow)

(i) Mumps
(ii) Sarcoidosis
(iii) Sjoegrens syndrome
(iv) Lupus
(v) post-irradiation

Functional Disorders of the Salivary Glands (Sjogren's Syndrome)

- Triad of dry eyes, dry mouth, dry joints
- Autoimmune disorder
- Lymphocytic infiltration of the salivary glands.

Functional Disorders of the Salivary Glands

Mucocele

- Secondary to trauma
- 70% occur in lower lip
- Excisional usually curative

Functional Disorders of the Salivary Glands

Ranula

- Sublingual salivary gland mucocele
- Treatment should include removal of Sublingual gland

Obstructive Disorders of the Salivary Glands

Obstructive Disorders of the Salivary Glands

- **Obstruction to the flow of saliva via the salivary duct can occur due to the presence of salivary gland stone (Sialolith).**

- **Obstruction can also secondary to the stricture (Narrowing) of the salivary gland duct.**

Obstructive Disorders of the Salivary Glands

Sialolithiasis (Salivary gland stone)

- 92% occur in submandibular gland
- 6% in parotid gland
- Multiple occurrence in same gland is common

Submandibular Gland - Sialolithiasis

Diagnosis

– Pain and sudden enlargement of gland while eating

- Palpation of stone in the submandibular duct
- Occlusal radiograph (80%)
- Sialogram

Submandibular Gland - Sialolithiasis

Treatment

Stone can be removed intraorally if in the duct and easily palpable


Fig 1.


Fig 2.


Fig 3.

Submandibular Gland - Sialolithiasis

Treatment

Stone can be removed intraorally if in the duct and easily palpable

Submandibular Gland - Sialolithiasis

Treatment

– If the stone is inside the gland and therefore damaging the gland, then the whole gland should be removed under G.A.

Parotid Gland - Sialolithiasis

Diagnosis

- Based on history
- Swelling during meals
- Bimanual palpation of painful gland
- Most parotid stones are multiple
- Sialogram

Sialogram

A sialogram is a dye investigation of a salivary gland. It is carried out to look in detail at the larger salivary glands, namely the parotid or submandibular glands.

Advanced Radiographic Investigations

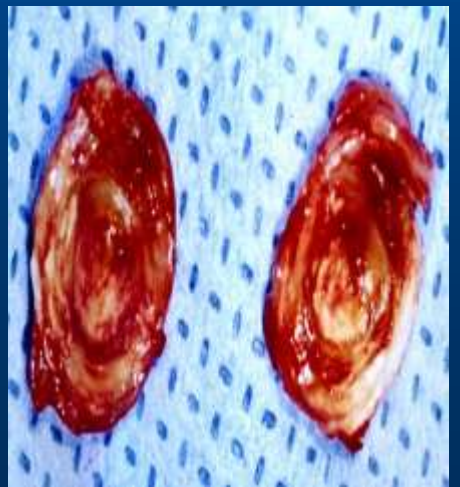
- Plain and contrast-enhanced axial CT image of parotid glands.

Parotid Gland - Sialolithiasis

Treatment

Stones in extraglandular portion of duct can be removed transorally

Intraglandular stones removed from extraoral approach by Superficial Parotidectomy.



Infectious Disorders of the Salivary Glands

Acute Sialadenitis - Infectious

Etiology

- Viral - (Mumps)
- Bacterial

Viral- Acute Sialadenitis **(Mumps)**

- **Acute painful parotitis**
- **Viral in aetiology**
- **Self limiting**

Bacterial - Acute Sialadenitis

Signs and symptoms

- Swelling, xerostomia, failure of secretion with ascending infection
  - (Staph aureus, Strep pyogenes, most common infective organism)

- Painful swelling parotid gland, overlying skin red, shiny & tense, pus from parotid duct

  (if involving the parotid gland)

Bacterial - Acute Sialadenitis

- **Treatment**
  - Culture pus for Sensitivity
  - Prescribe appropriate antibiotic
  - Supportive therapy
    - Fluids
    - Salivary stimulants

Bacterial - Chronic Sialadenitis

- **Chronic recurrent parotitis**
  - **Occurs commonly in patients of 3-6 Years age**
  - **Caused by Strep viridans**
  - **May spontaneously heal during puberty**

Necrotizing Sialometaplasia

- Benign inflammatory condition
- Usually involves the minor salivary gland of hard palate
- Will often simulate a malignant condition
- No definite etiology
- 1-3 cm ulcer heals spontaneously

Neoplastic Disorders of the Salivary Glands

Salivary Gland Tumors

- 80 % occur in parotid gland
- 5-10 % occur in the sub-mandibular gland
- 1 % occur in sublingual gland
- 10-15% occur in the minor salivary glands

Benign Salivary Gland Tumors

- **Adenomas (Epithelial)**
  - **Pleomorphic adenoma**
  - **Monomorphic adenoma**
  - **Adenolymphoma**
  - **Oxyphilic adenoma**
  - **Other types**

Pleomorphic Adenoma (Mixed Tumor)

Commonest tumour (53% - 71%) of the salivary glands

Tumor is slow growing, painless, solitary, firm, smooth, moveable without nerve involvement

Both mesenchymal/epithelial elements

Investigations include FNAC, MRI

Superficial parotidectomy is the procedure that is commonly performed.

Monomorphic adenoma

- **Characteristics**

  Consists of a single epithelial cell type with a dense fibrous connective tissue capsule.

- **Two types**

  - Basal cell adenoma
  - Canalicular adenoma

Warthins Tumor

- Warthin's tumour is also called as papillary cystadenoma lymphomatosum)
- 6% - 10%
- Benign, bilateral, parotid gland only
- Older age group
- Superficial location, therefore in most cases Superficial parotidectomy is performed.
- Malignant potential non existent

Malignant Tumours of the Salivary Glands

Malignant Tumours of the Salivary Glands

- Locally aggressive in nature
- Some grow along neural pathways, may access skull base and brain eventually
- Also lymphatic and haematogenous spread of tumor

Incidence of Salivary Gland Malignancy According to Site

- Sublingual 70%
- Submandibular 40%
- Parotid 20 %

Clinical Classification of Malignant Salivary gland Tumors

- (i) Mucoepidermoid tumor (high-grade)
- (ii) Carcinoma in pleomorphic adenoma
- (iv) Adenoid cyctic carcinoma
- (v) Acinic cell tumor
- (vi) Squamous cell carcinoma

Evaluation & Diagnosis of Malignant Salivary gland Tumors

- History & clinical examination, use TNM Classification to stage the cancer
- Sialography – of no value
- CT scans and MRI
- FNAC

Mucoepidermoid tumor

- Commonest malignant tumour
- 50% of all salivary gland malignancies
- Parotid involved in 40% - 50%
- 75% are low grade & have good prognosis
- 1 – 5 year survival 85%
- High grade mucoepidermoid carcinomas invade locally, spread regionally & distant metastasis.

Carcinoma in pleomorphic adenoma

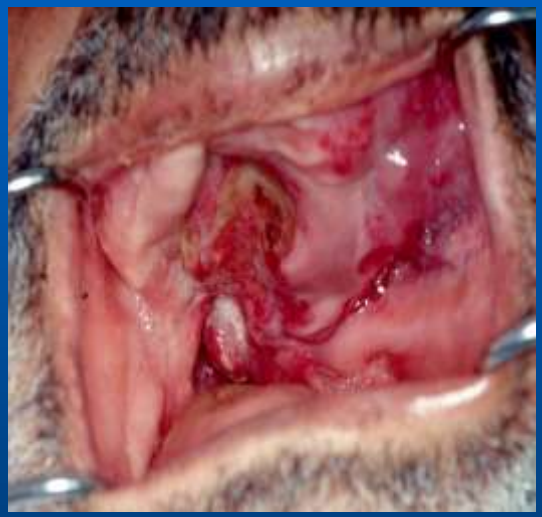
- Mixed malignant tumour
- **Long standing pleomorphic adenoma**
- **Older age group**
- **Worse prognosis**
- **Lymph node metastases 15%**
- **Distant metastases 30%**

Adenoid cystic carcinoma (Cylindroma)

- Commonly involves submandibular (35% - 40%), only 7% of parotid malignancies
- Slowly growing
- Peri-neural invasion
- 30% lymph node metastasis,
- 50% distant metastasis

Acinic cell carcinoma

- Low grade
- Slow growing
- 10% of malignant parotid tumour
- Lymph node mets 10%
- Aggressive tumours
- Radical parotidectomy is necessary if parotid gland is involved.



Squamous cell carcinoma of Salivary glands

- Infrequent occurrence 1% - 5%
- May have skin infiltration
- Total radical parotidectomy

Non-epithelial Salivary gland Tumors

- Malignant lymphoma
- Unclassified tumors