Aurobindo College of Dentistry

Indore, Madhya Pradesh

INDIA

Module plan

- Topic : SALIVARY GLANDS-I
- Subject: Oral Pathology
- Target Group: Undergraduate Dentistry
- Mode: Powerpoint – Webinar
- Platform: Institutional LMS
- Presenter: **Dr. Bhupesh Bagulkar**

INTRODUCTION

- Secretes saliva, which is a complex fluid & forms a thin film coating the teeth & mucosa, creating & regulating a healthy environment in the oral cavity.

CLASSIFICATION & STRUCTURE

- According to size
- According to location
- According to histochemical nature of secretory product

MAJOR SALIVARY GLANDS

- Three pairs of major salivary glands located outside the oral cavity & through extended duct system secrete their secretion into the mouth.
- Parotid
- Submandibular
- Sublingual

MINOR SALIVARY GLANDS

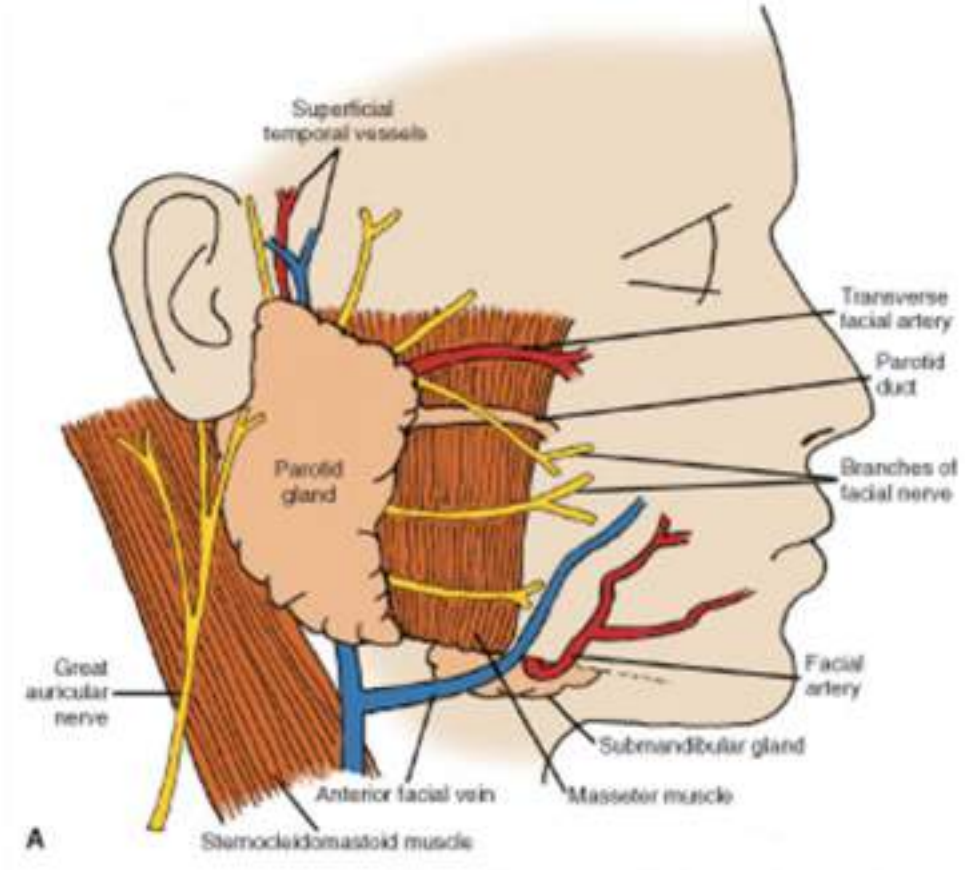
- These glands exist as small ,discrete aggregates of secretory tissue present in the submucosa throughout most of the oral cavity.

- Major salivary glands

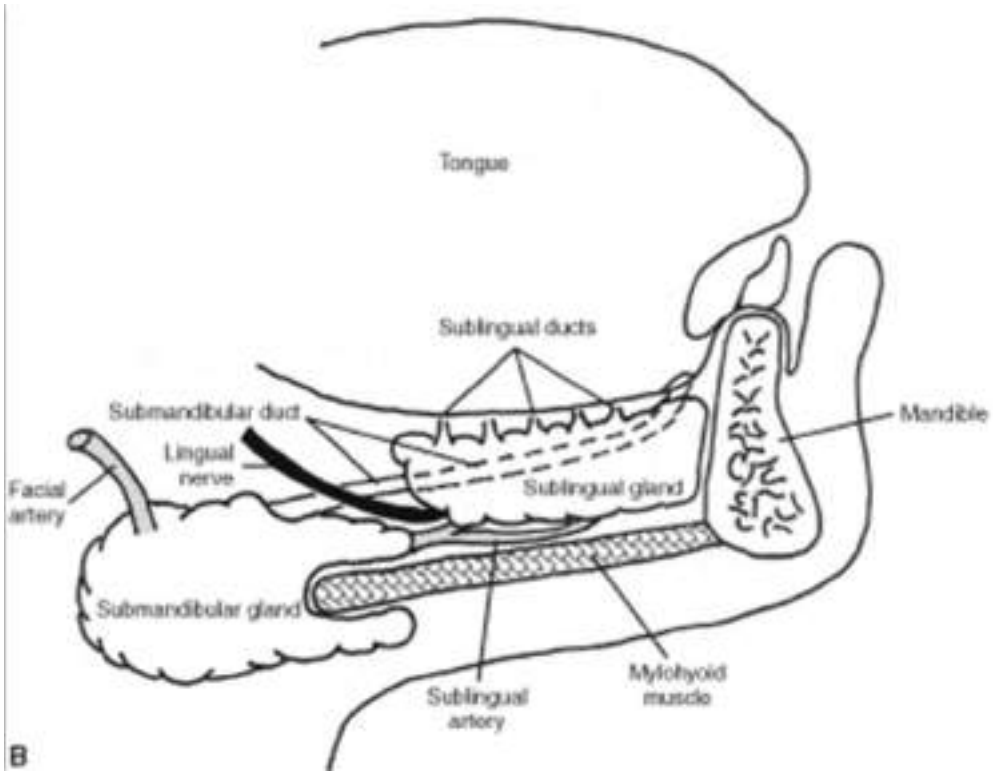
PAROTID GLAND

- The glands are pyramidal in shape and engulfed by a dense fibrous capsule.
- Largest major salivary gland.
- Purely serous gland. (infants-few mucous)

PAROTID GLAND



SUBMANDIBULAR GLAND

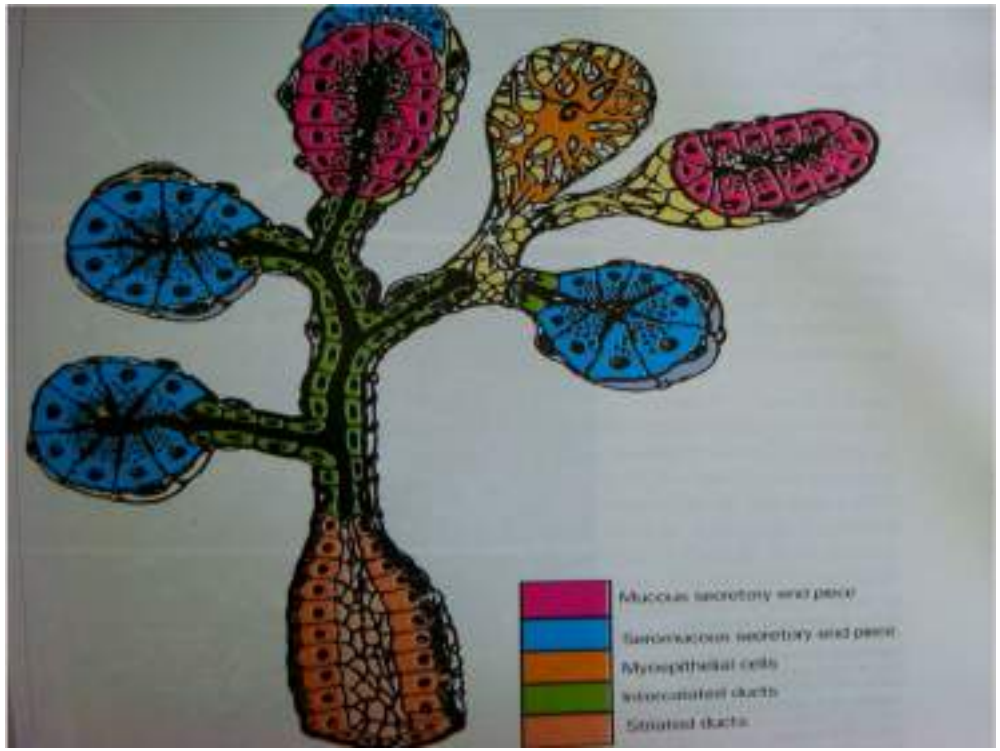


- The glands are irregular ,walnut in shape .
- The superficial inferior surface is in contact with the skin and platysma muscle .

SUBLINGUAL GLAND

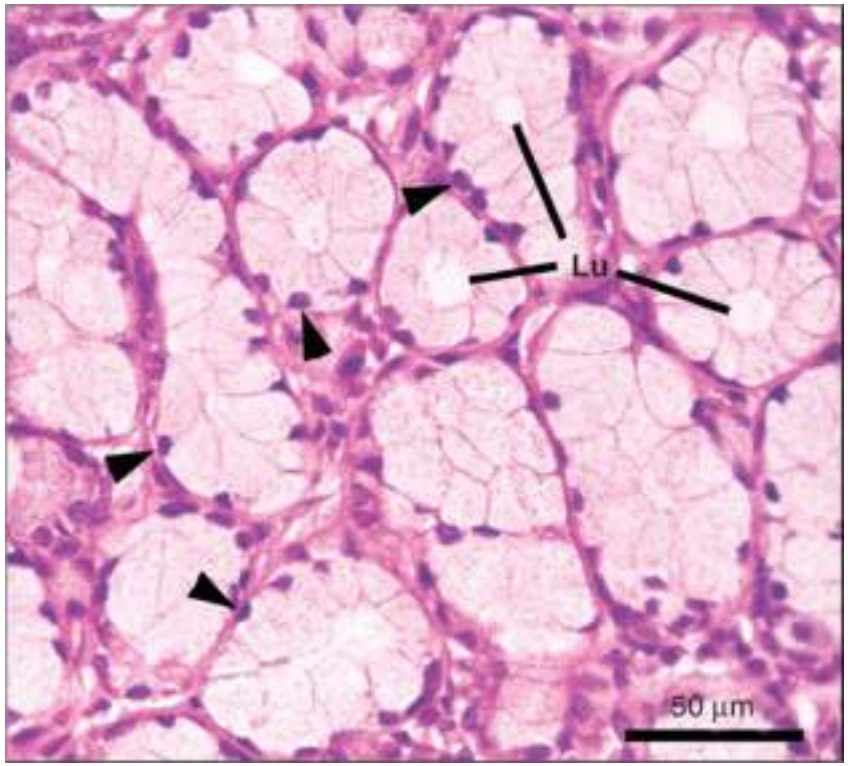
- The glands lie immediately beneath the oral mucosal lining of floor of mouth, raising a small fold on either side of tongue.
- The gland rest on mylohyoid muscle, with the mandible lateral and the genioglossus muscle medial to it.

MICROSCOPIC STRUCTURE OF SALIVARY GLANDS



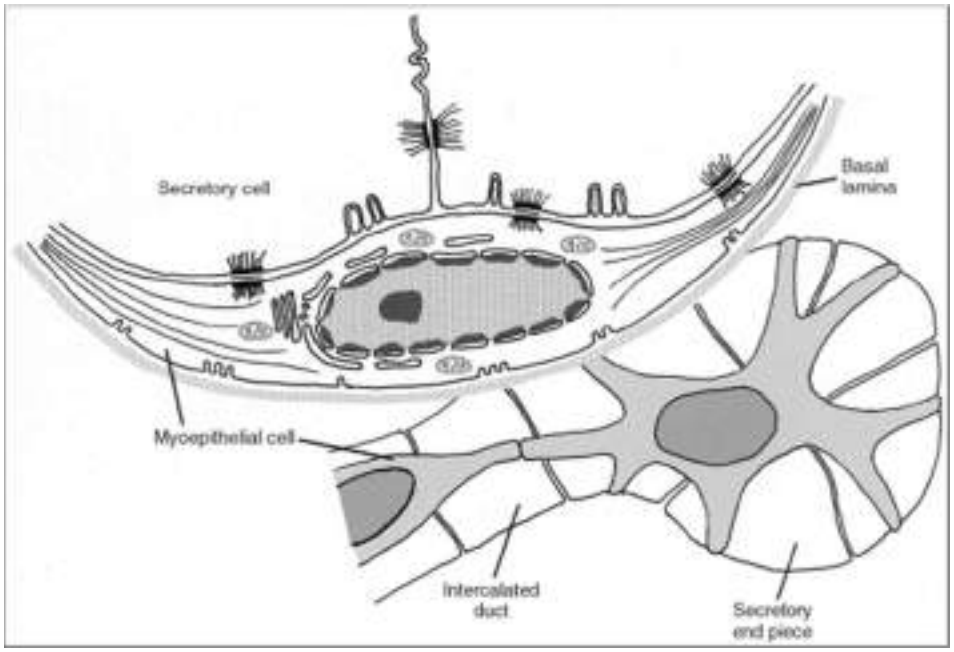
- The general structure of salivary glands is often compared to a bunch of grapes ,with the grapes representing the secretory acini while the stalks represents the ductal system.

- In the acini in addition to *serous* and *mucous* cells, another family of cells called as *myoepithelial* cells are also present.



1. They have little or no enzymatic activity & probably serve mainly for lubrication & protection of oral tissues.
2. The ratio of carbohydrate to protein is greater, & larger amount of sialic acid & occasionally sulfated sugar residues are present.

MYOEPITHELIAL CELLS



- Closely related to secretory & intercalated duct cells
- Present between basal lamina & the secretory or duct cells & joined to the cells by desmosomes.

- Stellate or spiderlike, with flattened nucleus, scanty perinuclear cytoplasm & numerous branching cytoplasmic processes that embrace the secretory & duct cells.

- Also called as ***Basket cell.***
- Considered to have a contractile function.

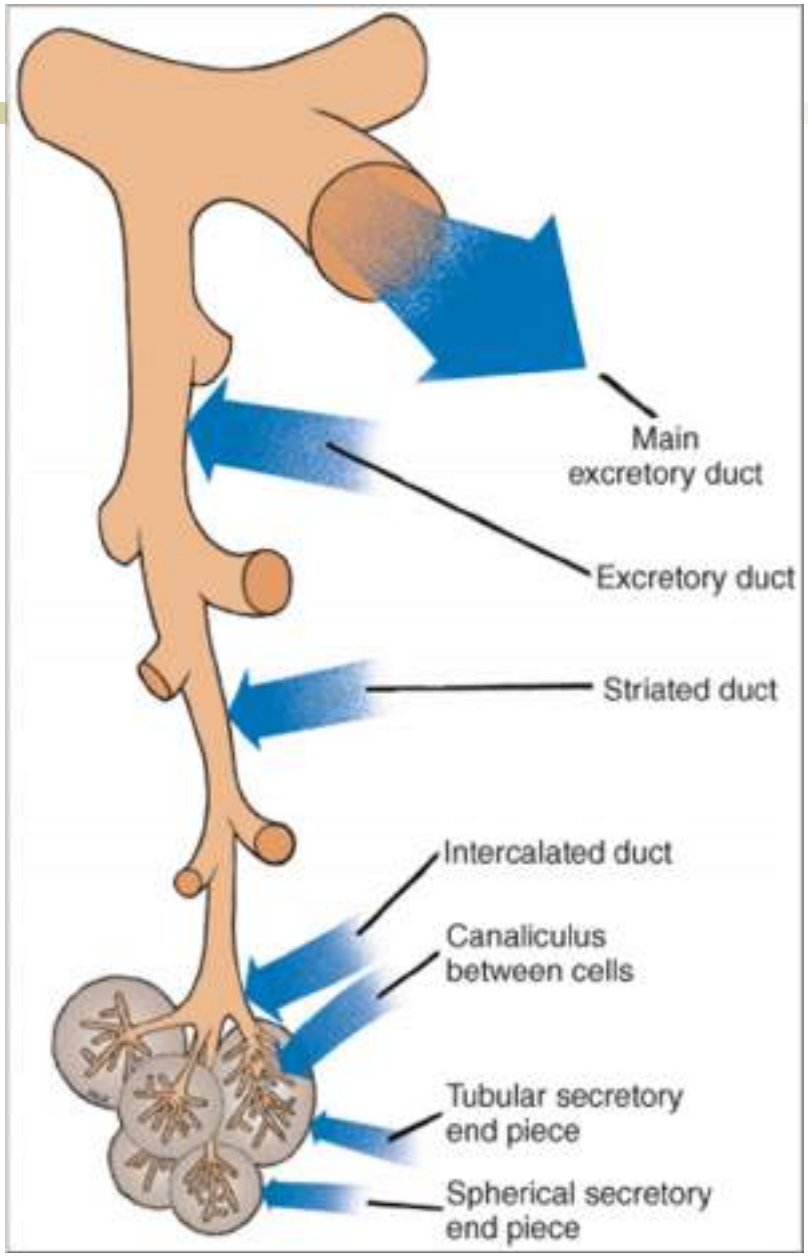
DEMILUNE

- ***Demilune*** -Some mucous end pieces have serous cells associated with them in the form of crescent shaped covering.

THE DUCT SYSTEM

- Intercalated ducts
- Striated ducts
- Excretory ducts

DUCT SYSTEM


Main excretory duct
Excretory duct
Striated duct
Intercalated duct
Canaliculus between cells
Tubular secretory end piece
Spherical secretory end piece

FUNCTIONS OF DUCTS

1. To convey the primary saliva secreted by the terminal secretory units to the oral cavity.
2. To modify the primary saliva by secretion & reabsorption of electrolytes & secretion of proteins.
3. Presence of Undifferentiated cells (Salivary gland stem cell) & antibacterial proteins(lactoferrin & lysozyme) in the intercalated ducts.
4. Apical cytoplasm of striated ducts contains secretory granules consisting of kallikrein (salivary glycoprotein)

COMPOSITION OF SALIVA

- Electrolytes (Na+,K+,Cl+,HCO3-,Ca, Mg, etc.)
- Secretory proteins (Amylase, Mucins, Lysozyme,Peroxidase,Lactoferrin,Defensins, etc.
- Immunoglobulins (IgA, IgG)
- Organic (glucose, urea, amino acids etc.)
- Others (EGF,insulin etc.)

FUNCTIONS OF SALIVA

- Digestion
- Taste
- Lubrication
- Water balance
- Soft tissue repair
- Maintenance of ecological balance
- Direct antimicrobial
- Maintenance of ph
- Maintenance of tooth integrity
- Excretory function
- Maintenance of mucous membrane integrity

CONNECTIVE TISSUE

- Cells –fibroblasts, macrophages, mast cells,leukocytes,plasma cells,& fat cells.
- Collagen & reticular fibers.
- Ground substance.
- Vascular supply
- Nerve supply

Nerve supply

- The secretory cells receive their innervation by two patterns

1. Subepithelial
2. Intraepithelial

- Autonomic nervous system

1. Sympathetic (Adrenergic)
2. Parasympathetic (Cholinergic)

CLINICAL CONSIDERATIONS

- Age changes
- Diseases
- Xerostomia (dry mouth)

Thank You