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EXOCRINE (SALIVARY) GLANDS HISTOLOGY (AN 70.1)

CLASSIFICATION BASED ON TYPE OF SECRETION

1. Mucous glands
2. Serous glands
3. Mixed glands

MICROSCOPIC STRUCTURE OF EXOCRINE GLANDS

- **Parenchyma:** It consists of secretory cells. Shape of secretory units of salivary glands is acinar (round or oval). Therefore, there are serous, mucous or mixed acini depending upon the type of salivary gland.
- **Stroma:** It consists of connective tissue dividing the gland into lobules, lobes or forming its capsule. Blood vessels pass through the connective tissue.
- **Ducts:** Intralobular, interlobular, interlobar
- Myoepithelial cells are present in close relation to the secretory elements. They are stellate or fusiform in shape and lie between the secretory cells and basement membrane.

ACINI

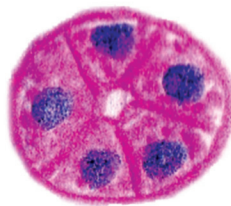
- **Mucous acini:** They contain mucopolysaccharide secretion which does not stain with H&E stain. Therefore, the cells of mucous acini appear empty. The secretions near the apices push the nuclei towards the base of cells (near the basement membrane) making them appear flattened. There is a lumen in the centre of acinus which is larger as compared to that of serous acinus, e.g. sublingual salivary gland.
- **Serous acini:** Cells are triangular with round nucleus placed centrally/basal. Secretions are proteinous, therefore, the cytoplasm is granular and stains bluish with H&E. There are basal striations present in active cells in higher magnification. Lumen is small, e.g. parotid gland.
- **Mixed acini:** Submandibular gland is a mixed salivary gland having both serous and mucous acini. Demilunes are present on mucous acini.

Demilunes of Giannuzzi

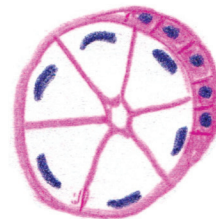
The mucous cells form tubules, but their ends are capped by serous cells, which constitute the serous demilunes. Under the light microscope the serous demilunes appear as semilunar dark stained caps on the light stained



Mucous acinus



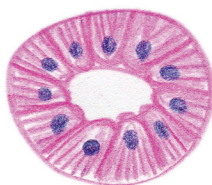
Serous acinus



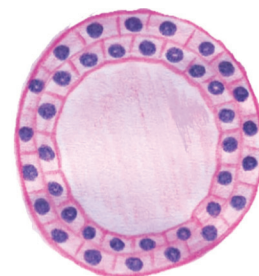
Mucous acinus with serous demilune



Intercalated duct



Striated duct



Interlobular duct

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mucous acini. The demilunes are connected with the lumen of mucous acini by microscopic canaliculi to the lumen of acini. So the serous secretion of demilunes makes the secretion of mucous acini less viscid.

Ducts

- **Intercalated ducts:** Lined by cuboidal epithelium, are present in the lobules.
- **Striated ducts:** Formed by joining of several intercalated ducts. They are lined by simple columnar cells and have basal striations formed by folding of basal cell membrane. They have a larger lumen than intercalated ducts.
- **Interlobular ducts:** The epithelium varies from low columnar in smaller ducts to pseudostratified or stratified columnar epithelium in larger ducts.