



SALIVARY GLANDS

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MAJOR GLANDS

1. Parotid: so-called watery serous saliva rich in amylase, proline-rich proteins

Acini: serous acini

Saliva Vol. 25-30%

- Stenson's duct

MAJOR SALIVARY GLANDS

2. Submandibular gland: more mucinous

Acini mixed acini, serous predominate

Saliva Vol. 60%

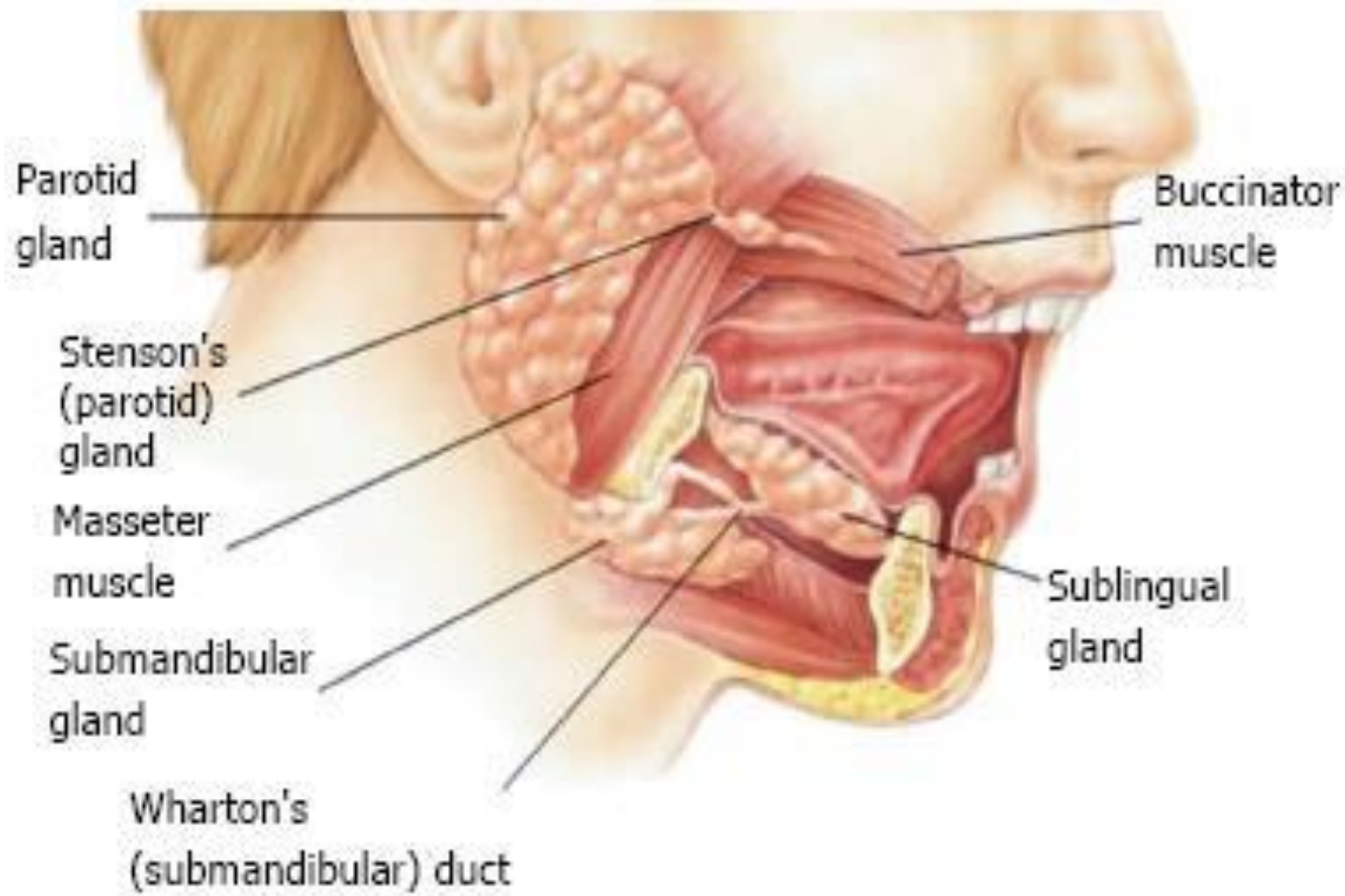
- Wharton's duct

3. Sublingual: viscous saliva

mixed acini, mucous predominate

Saliva Vol. 5%

- Bartholin's duct



FUNCTIONS OF SALIVA

1. Protection

- lubricant (glycoprotein)
- barrier against noxious stimuli; microbial toxins and minor traumas
- washing non-adherent and acellular debris

FUNCTIONS

2. Buffering (phosphate ions and bicarbonate)

3. Digestion

neutralizes esophageal contents

dilutes gastric chyme

forms food bolus

break starch

FUNCTIONS

4. Antimicrobial

- lysozyme hydrolyzes cell walls of some bacteria
- lactoferrin binds free iron and deprives bacteria of this essential element
- IgA agglutinates microorganisms

FUNCTIONS

5. Maintenance of tooth integrity

- calcium and phosphate ions
 - ionic exchange with tooth surface

FUNCTIONS

6. Tissue repair

- bleeding time of oral tissues shorter than other tissues, resulting clot less solid than normal
 - Remineralization

7. Taste

- solubilizing of food substances that can be sensed by receptors

SALIVARY GLAND CONTENTS

contain acini and duct system

Types of acini

Serous acini

Mucous acini

SALIVARY ACINI CELLS

1. **Serous cell** (characteristic feature)

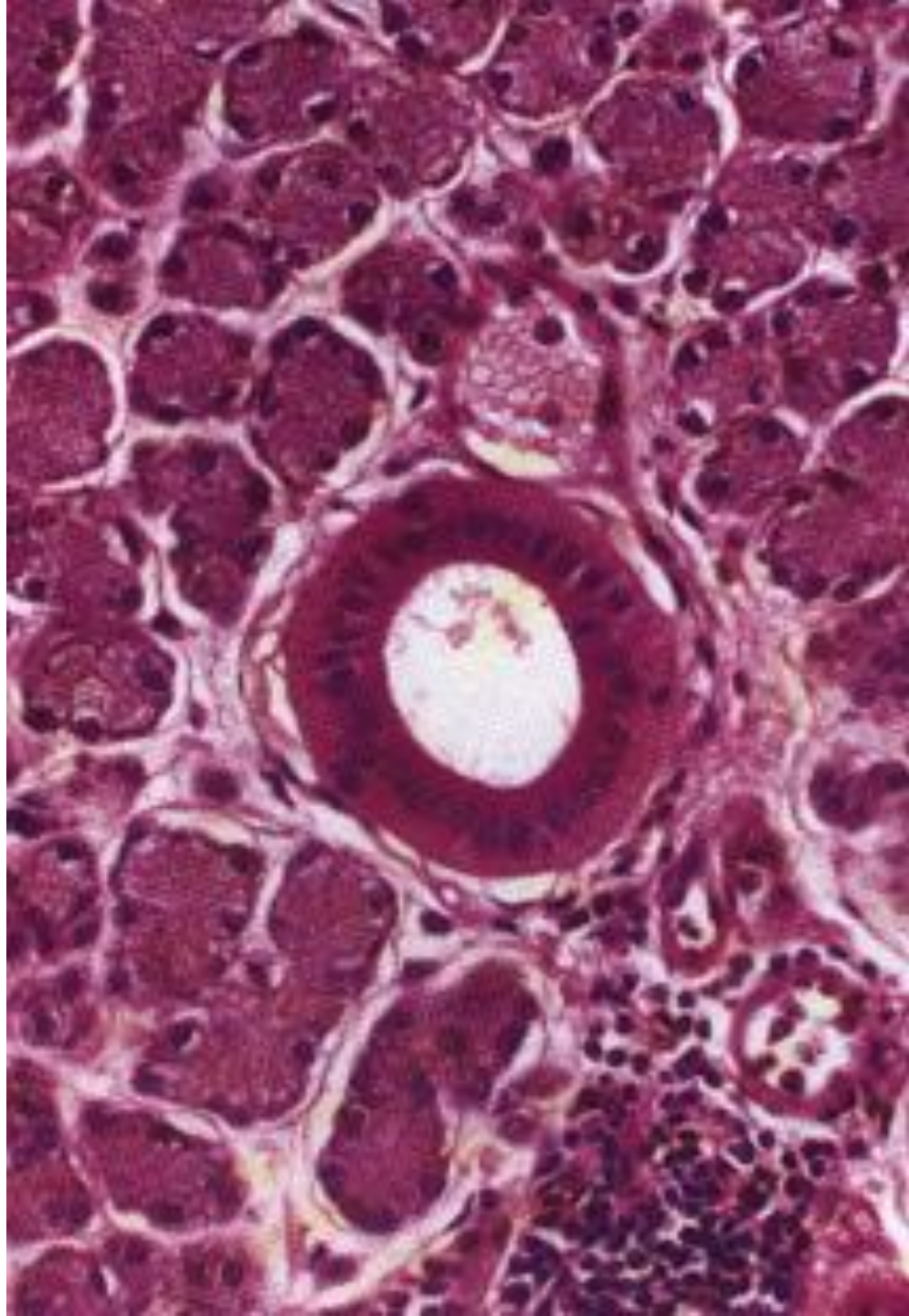
Dark stain

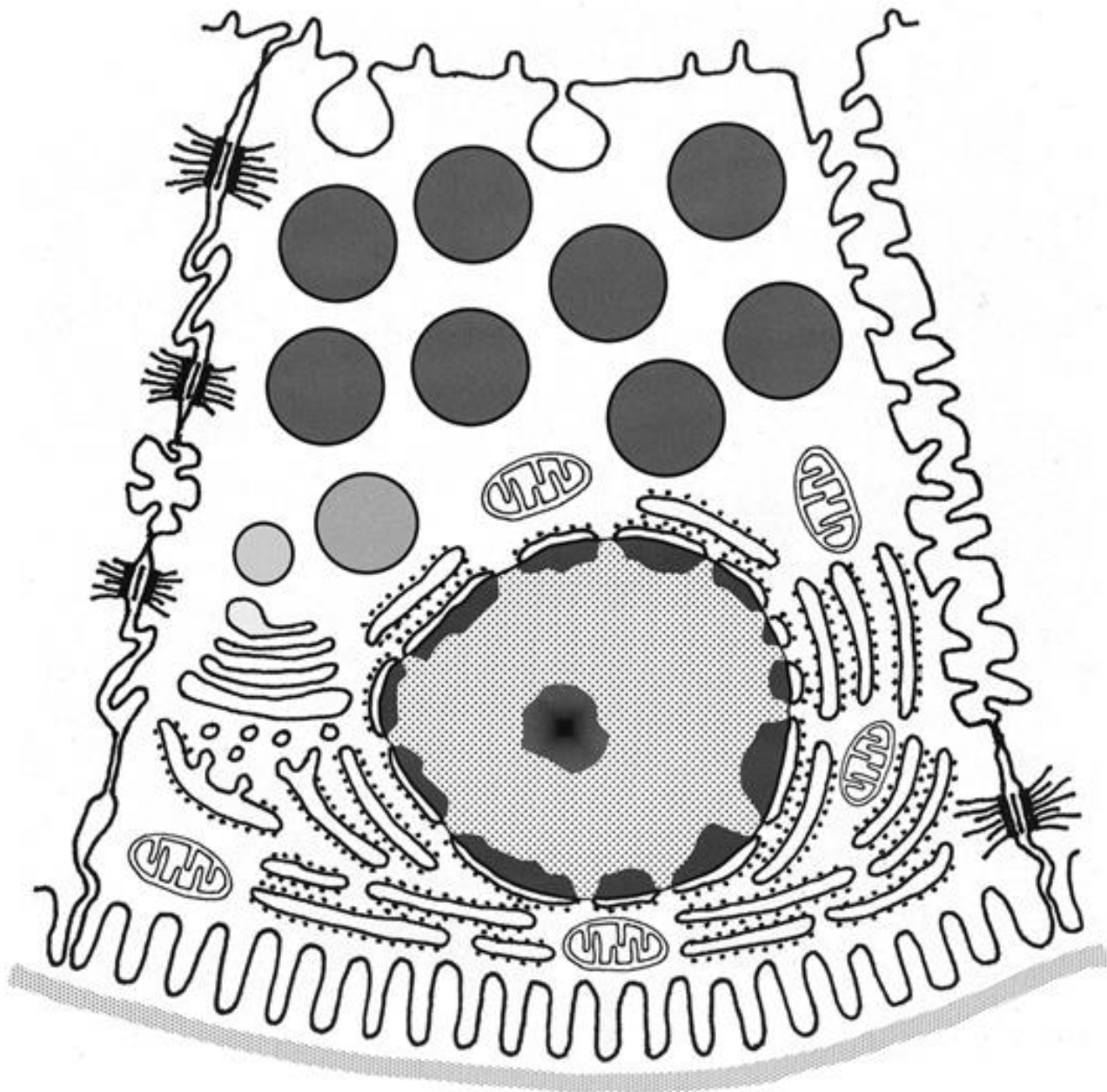
High -protein, low carbohydrate

**rER, lysosome, mitochondria, secretory granule,
zymogen granules (amylase)**

Watery consistency

Help in Digestion





2.MUCOUS CELLS

Mucous cell (characteristic feature)

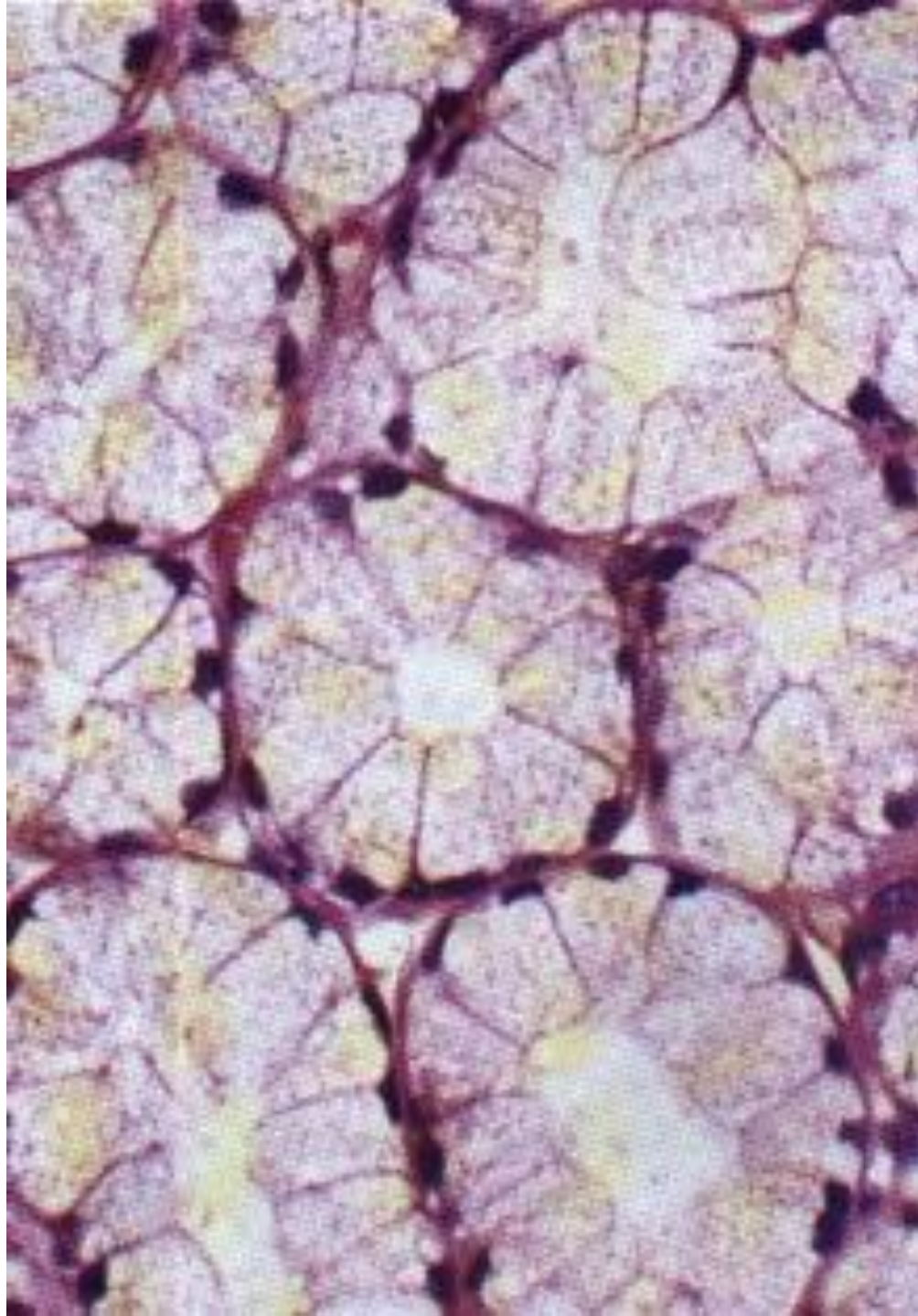
pale

Low-protein, high carbohydrate

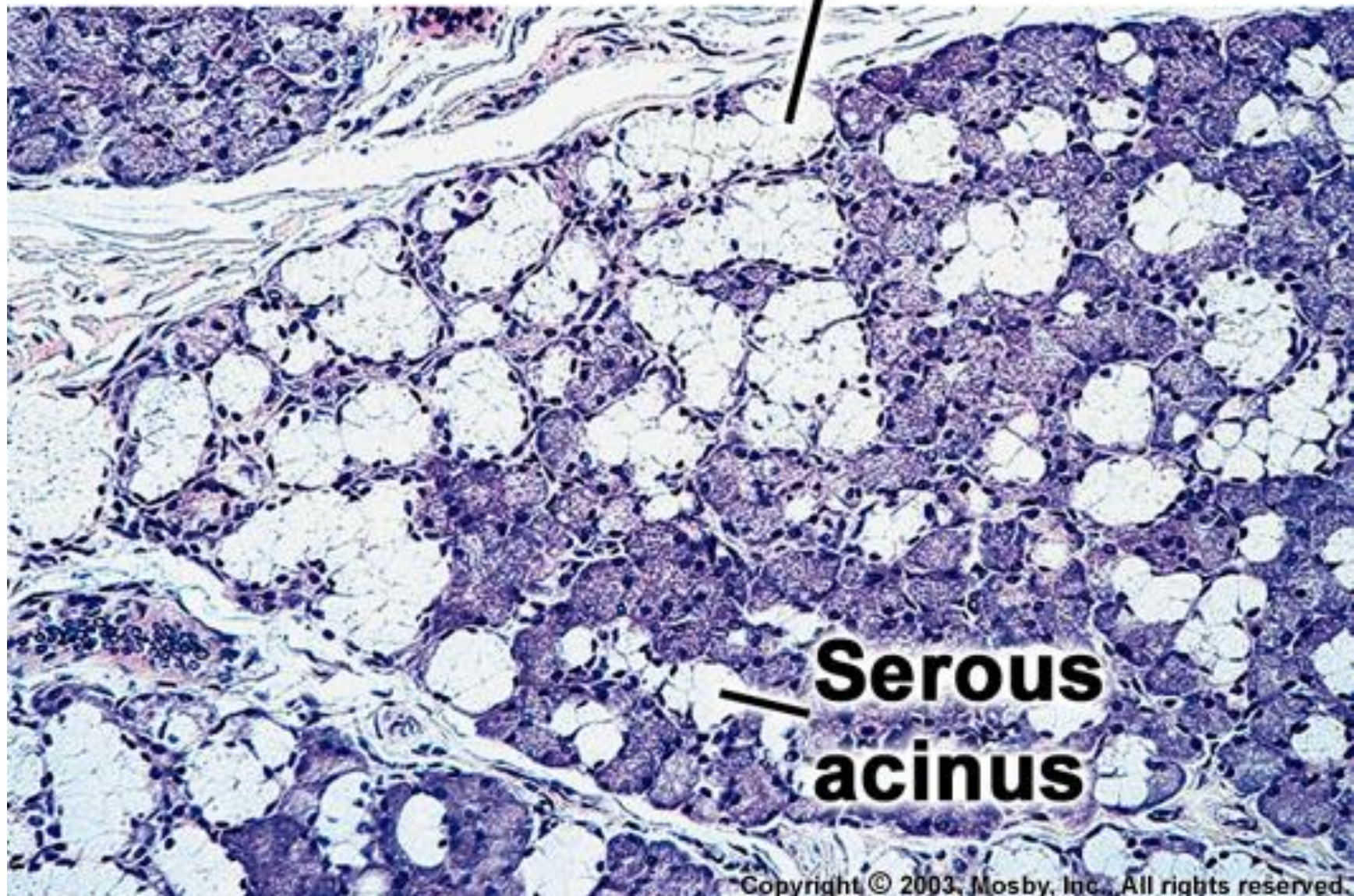
Mucin: glycoprotein, sialic acid

Viscous

Help in Lubrication



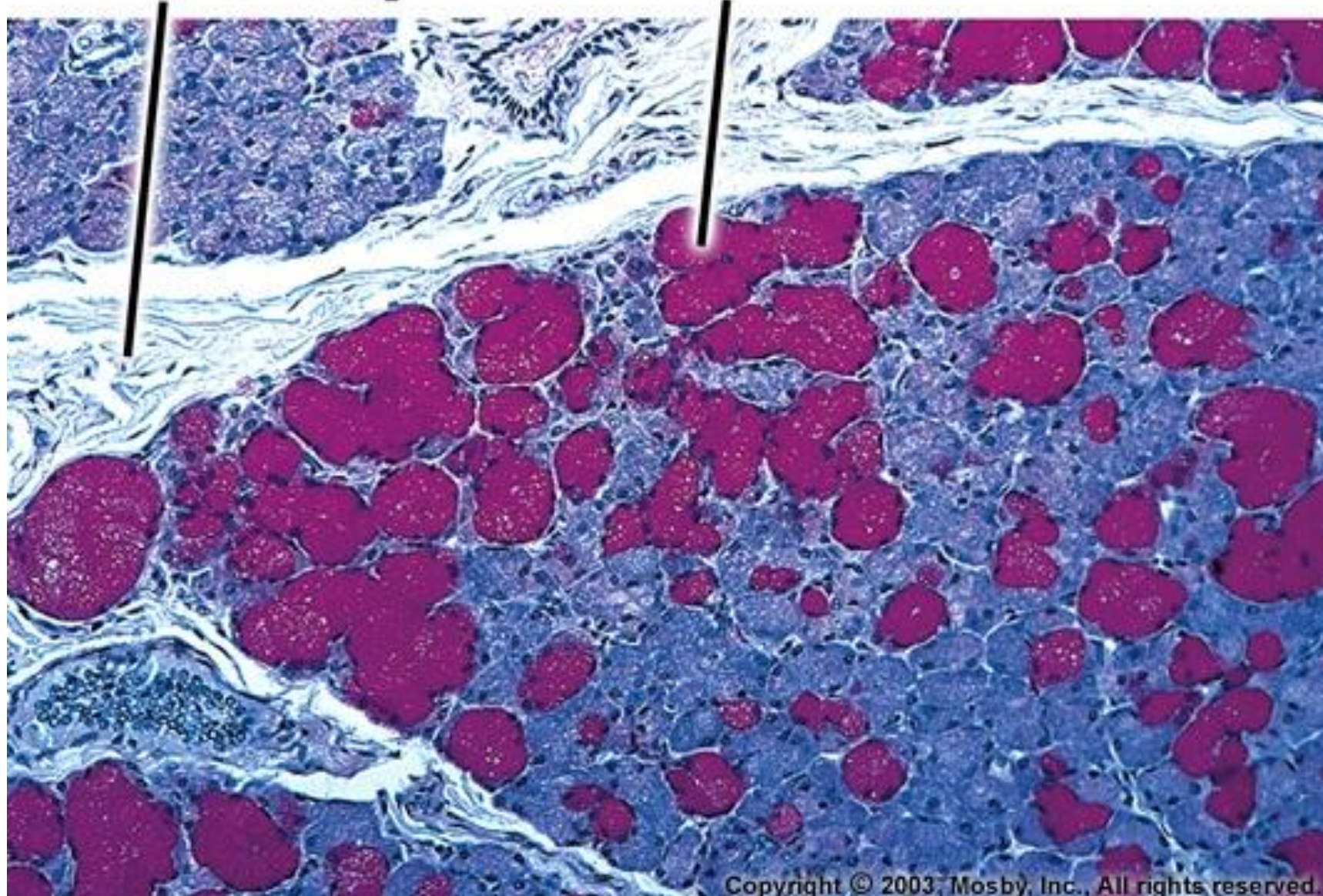
**Mucous
acinus**



**Serous
acinus**

Connective tissue septum

Mucous cells



Serous

Stain darkly
(zymogen granules)

Rounded nuclei
Towards the base

Mucous

Stains lightly
Appears empty

Cells filled with
mucoid
materials

Flattened
Nuclei towards
basements

SEROUS DEMILUNE(SDL)

In submandibular gland the ends of mucous secreting units are frequently capped by a serous Demilune which consists of several serous secreting cells

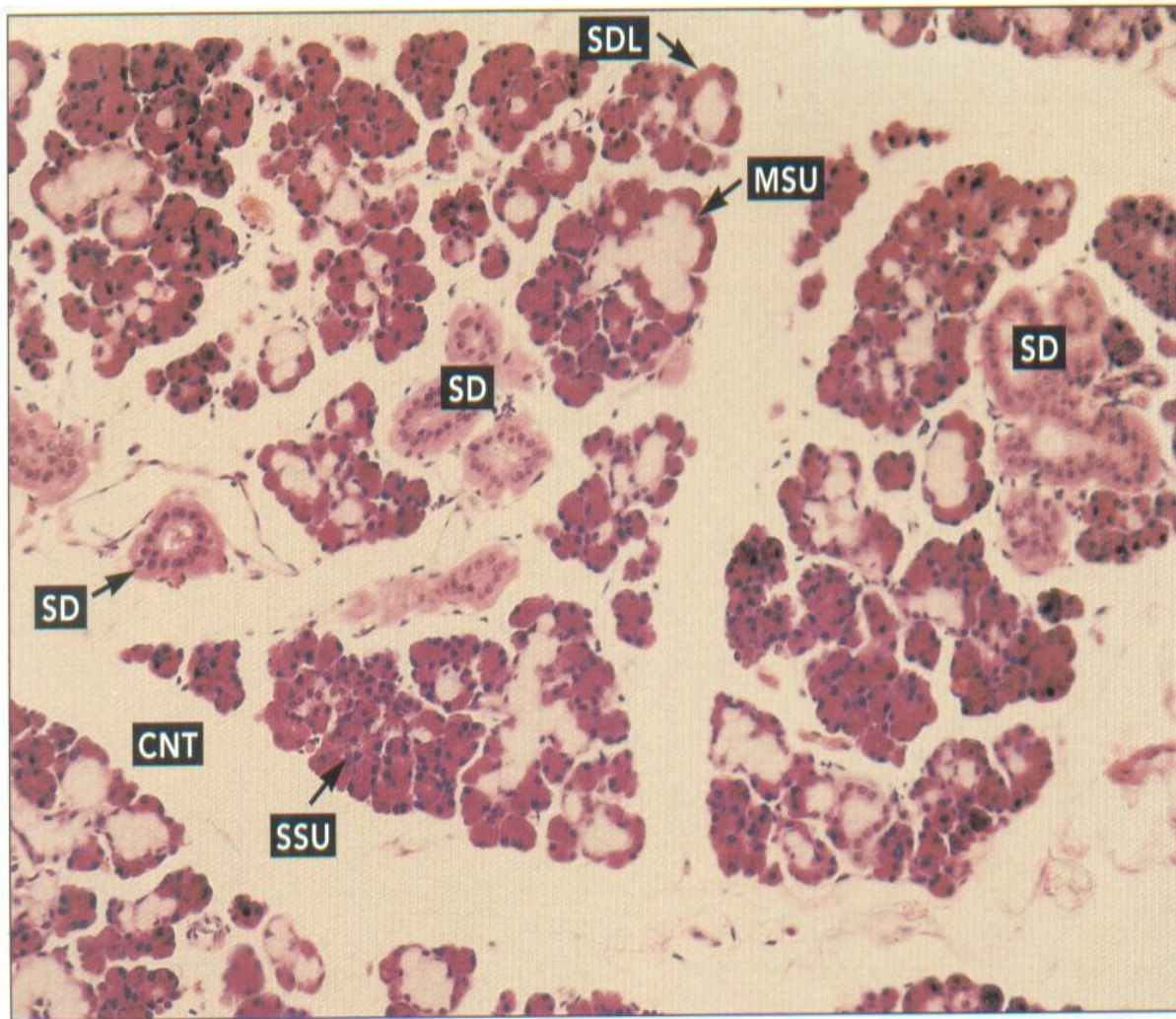
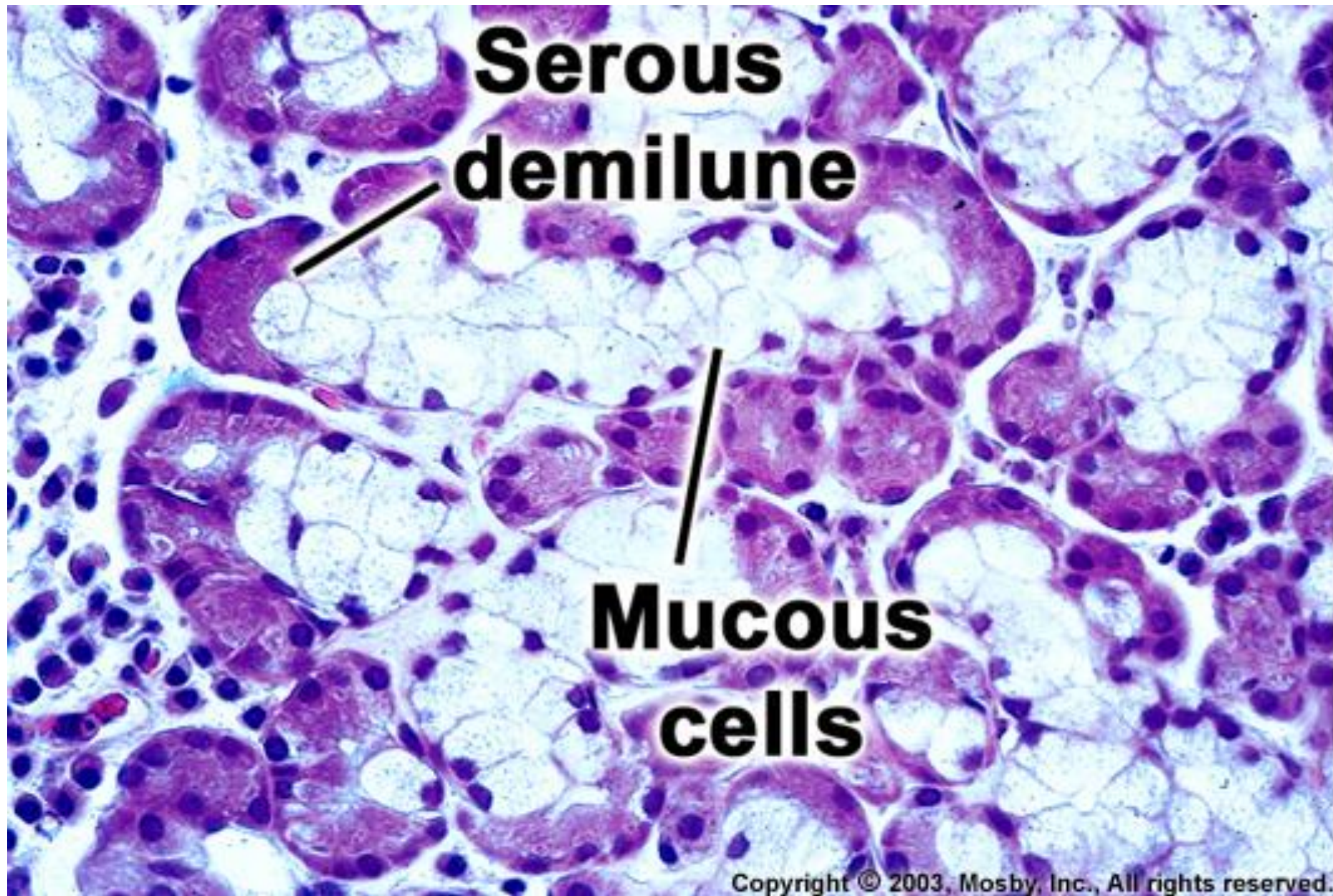


FIG 10-9

Submandibular salivary gland

Paraffin-embedded section of the submandibular salivary gland. Lightly staining mucous secretory units (MSU) and dark staining serous secretory units (SSU) are present. The ends of mucous-secreting units are frequently capped by a serous demilune (SDL), which consists of several serous secreting cells. Striated ducts (SD) are numerous. Connective tissue (CNT) divides the gland into lobes (H and E stain; $\times 160$).



**Serous
demilune**

**Mucous
cells**

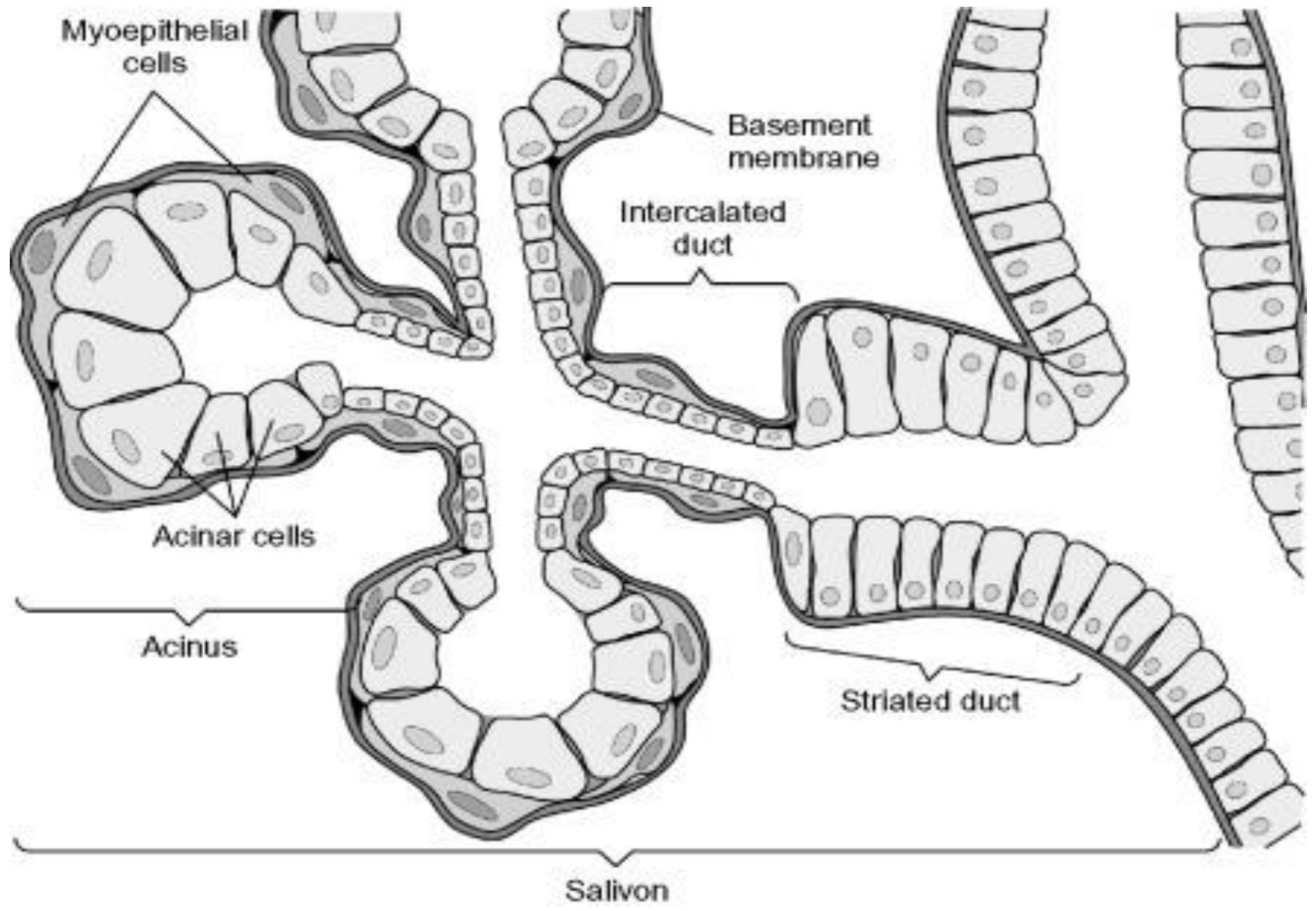
3. MYOEPITHELIAL CELLS

One, two or even three myoepithelial cells in each salivary and piece body

Surrounding the acinic cell and intercalated duct

Long process (Four to eight processes)

like smooth m. in ultrastructure



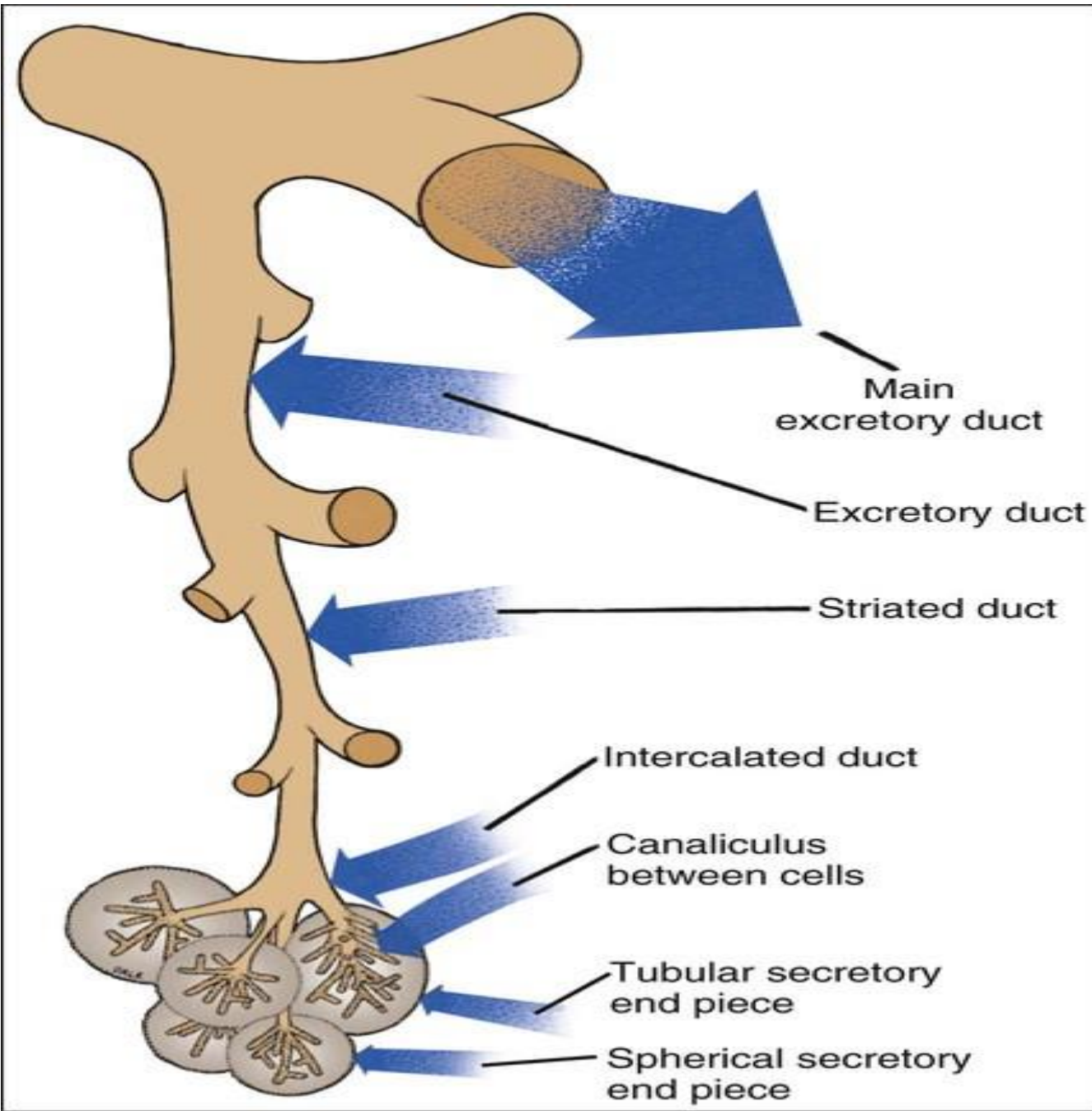
MYOEPITHELIAL CELLS

Functions of myoepithelial cells

1. Support secretory cells
 2. Contract and widen the diameter of the intercalated ducts
- Contraction may aid in the rupture of acinar cells and help in content secretion

DUCT SYSTEM

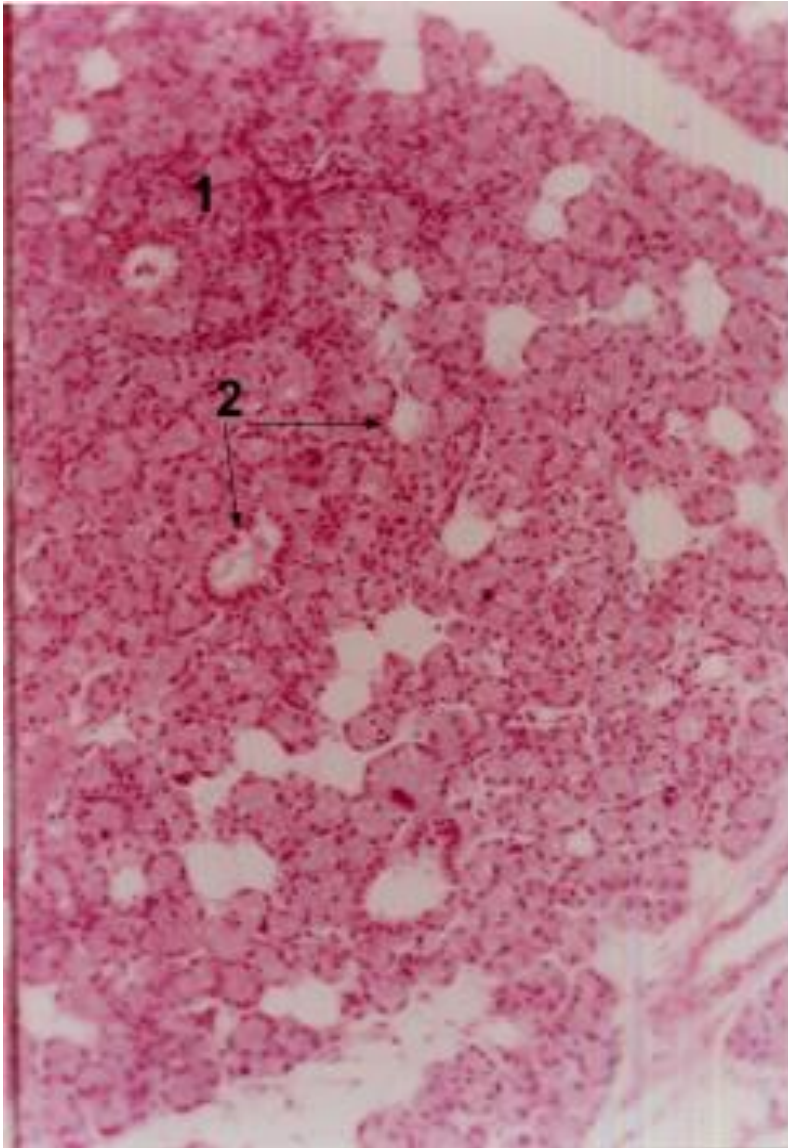
- (1) canaliculi,
- (2) intercalated duct (Lined by small cuboidal cells),
- (3) striated duct (Columnar cells, Centrally located nucleus
With Prominent striations)
- (4) excretory duct (pseudo-stratified with columnar cell with
basal cell and goblet cell)
- (5) main excretory duct (Stratified ep. As join oral ep.)



INTERCALATED DUCTS

Small diameter

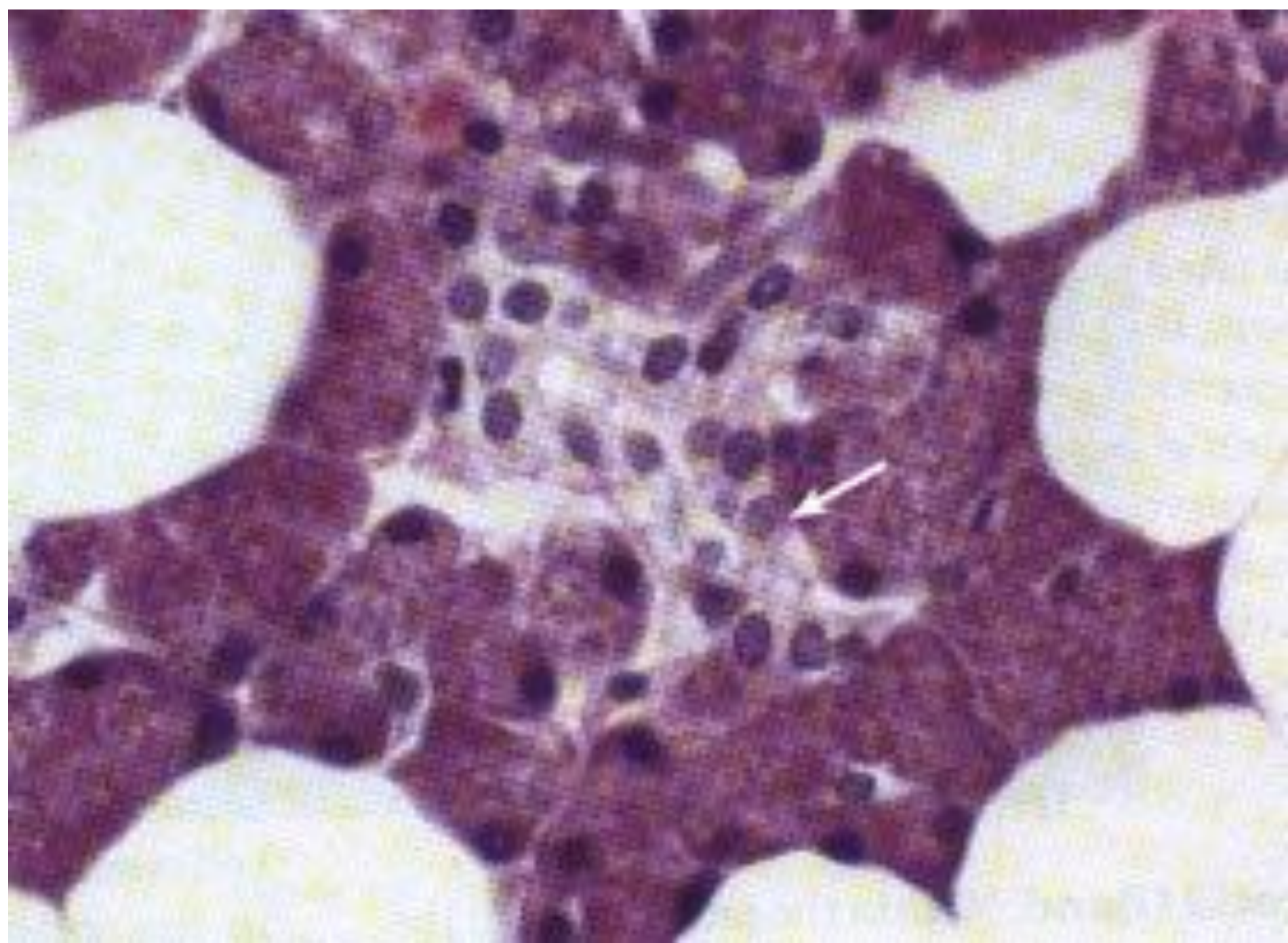
Lined by small cuboidal cells



Parotid salivary gland

1. Serous acini.

2. Intercalated duct.

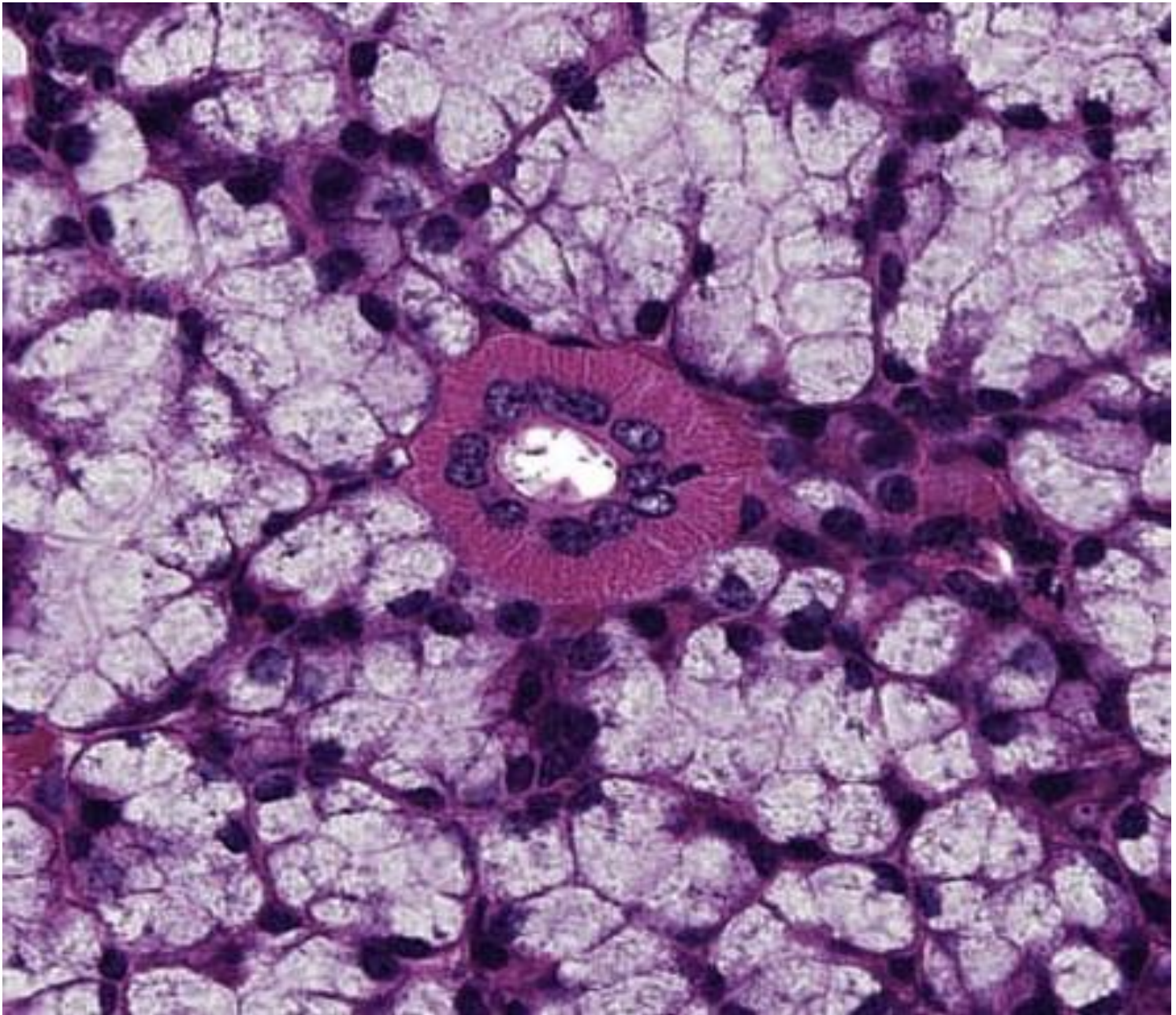


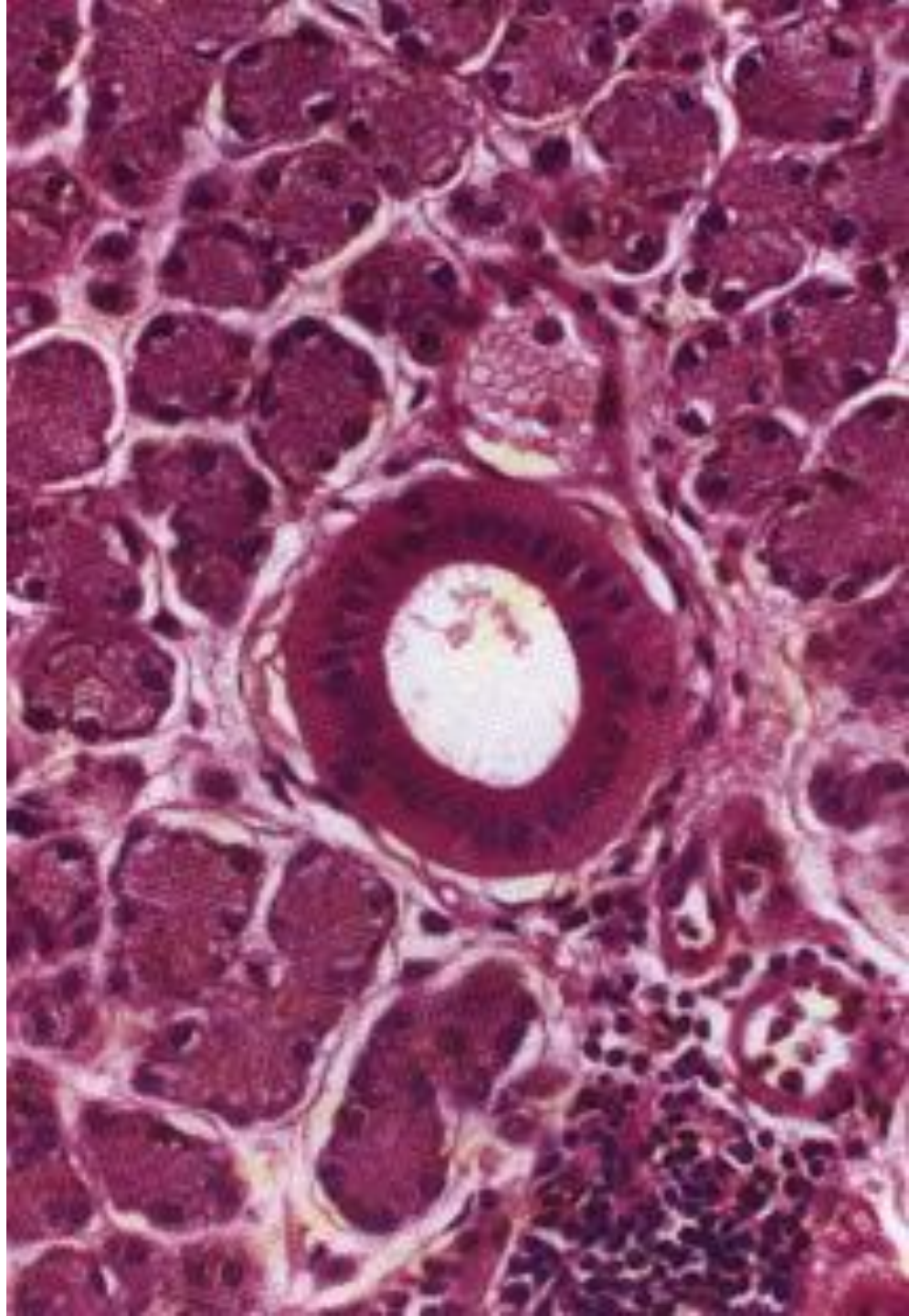
STRIATED DUCTS

Columnar cells

Centrally located nucleus

Prominent striations





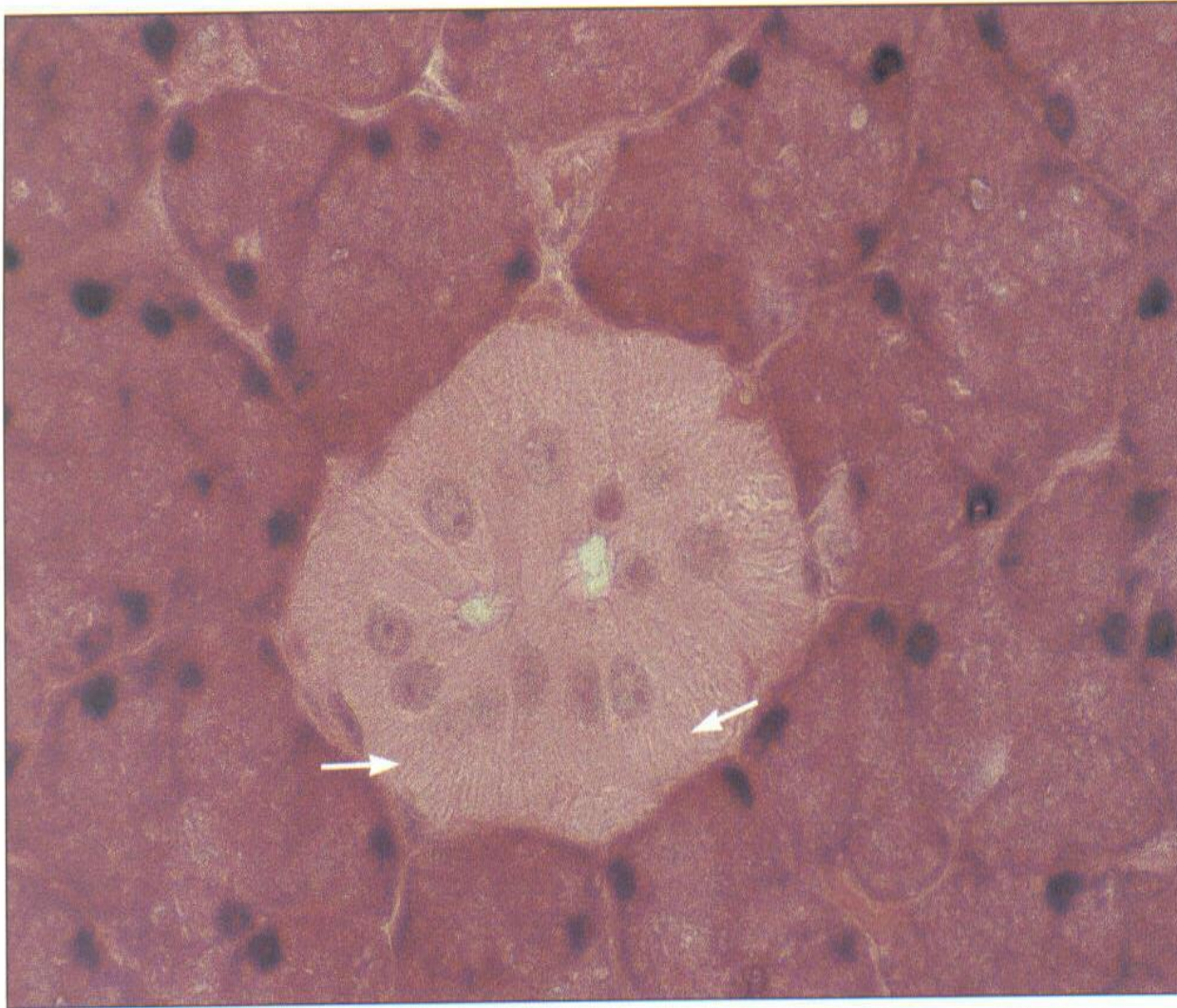
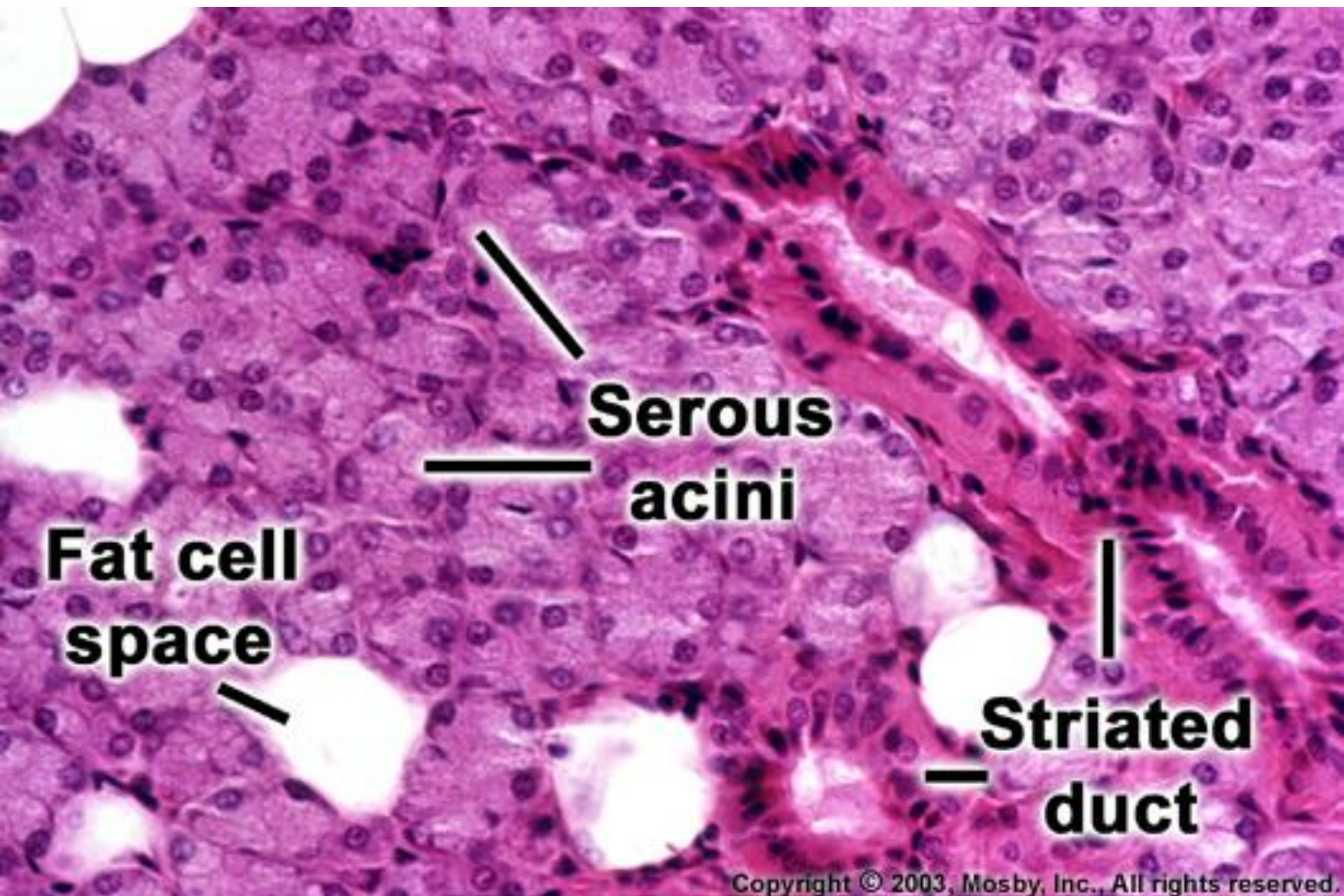


FIG 10-6

Striated duct

Striated duct in a paraffin-embedded section of parotid gland. Note prominent striations (arrows) in the basal region of the duct cells, which give rise to the name (H and E stain; $\times 640$).



**Serous
acini**

**Fat cell
space**

**Striated
duct**

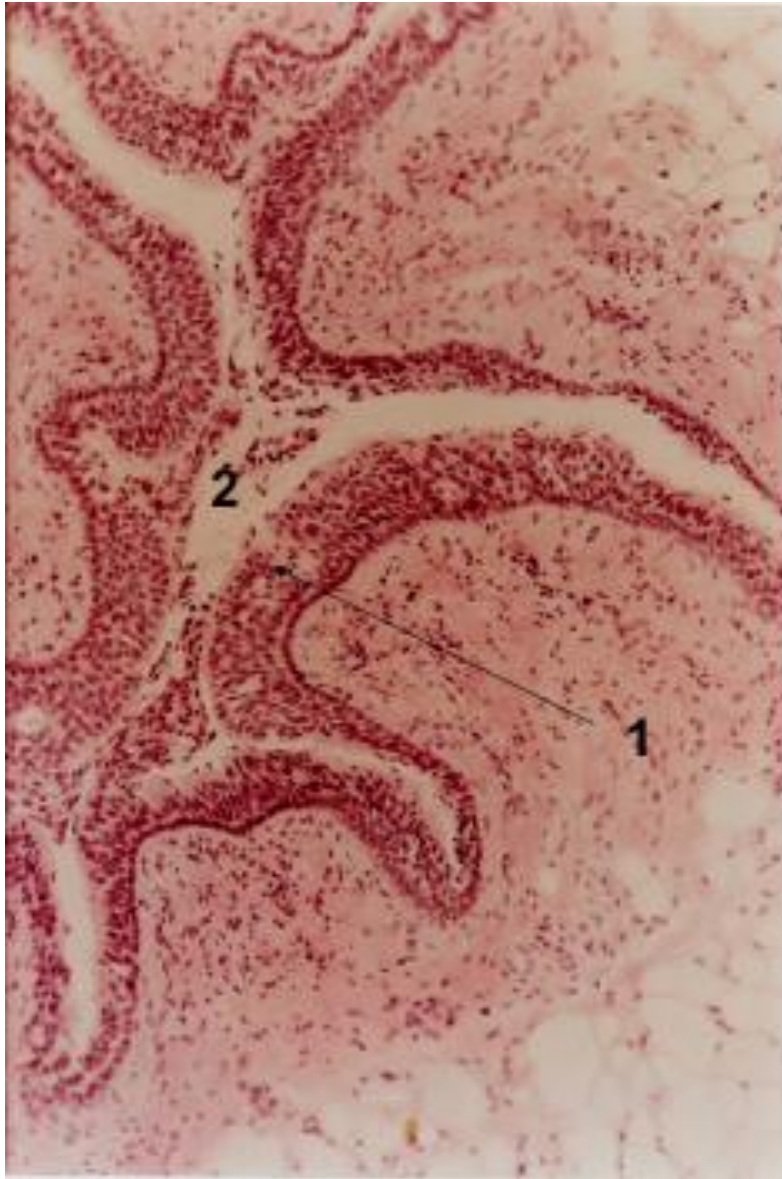
TERMINAL EXCRETORY DUCTS

As the duct reaches the oral mucosa the lining becomes stratified columnar with Goblet cells, basal cells, clear cells.



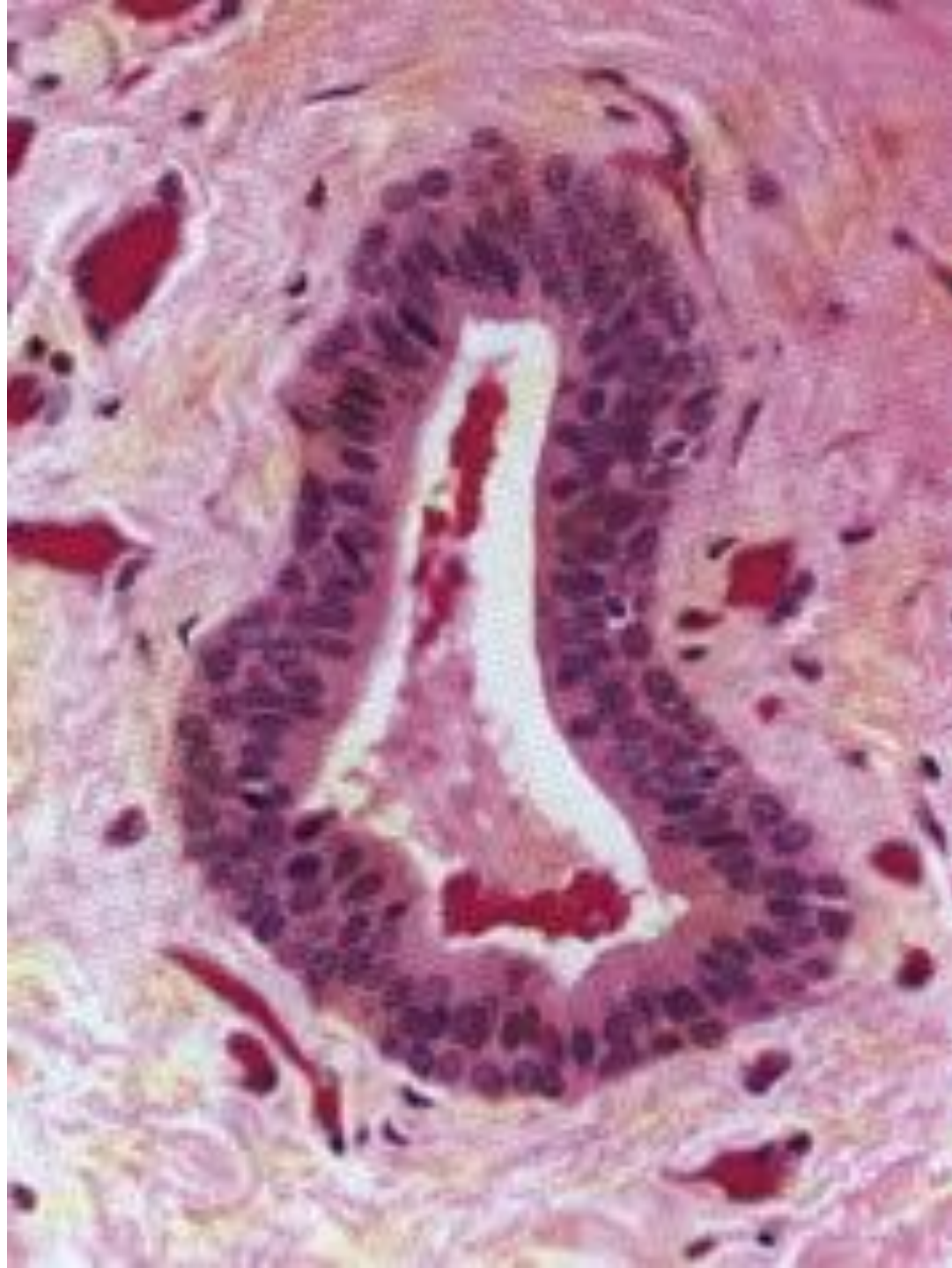
Sublingual salivary gland

- 1. Mucous acini.**
- 2. Connective tissue of capsule.**
- 3. Excretory duct.**



Excretory duct.

- **Pseudo stratified columnner epithelia.**
- **lumen. Of the duct.**



NERVE SUPPLY



Parasympathetic and sympathetic impulses

Parasympathetic are more prevalent.

Parasympathetic impulses may occur in isolation, evoke most of the fluid to be excreted, cause exocytosis, induce contraction of myoepithelial cells and cause vasodilatation.

AGE CHANGES

Fibrosis and fatty degenerative changes

The image features the words "Thank You" in a stylized, 3D-effect font. The text is rendered in a dark red or maroon color with a lighter, pinkish-red gradient and a subtle drop shadow. The word "Thank" is positioned above the word "You". The text is framed by two decorative sprigs of roses and green leaves. One sprig is located to the left of the word "Thank", and the other is to the left of the word "You". The entire graphic is set against a plain white background, which is itself centered within a solid blue rectangular border.

Thank
You