

"Salivary Glands"

- Three pairs of major salivary glands drain into the oral cavity:
 - Parotid gland
 - Submandibular gland
 - Sublingual gland
- Additionally, several minor salivary glands are scattered throughout the oral cavity:
 - Labial glands
 - Buccal glands
 - Palatal glands

» Parotid Gland

- The parotid gland is the largest salivary gland.
- It is composed mostly of serous acini.
- Location:
 - Lies in a deep hollow below the external auditory meatus
 - Behind the ramus of the mandible
 - In front of the sternocleidomastoid muscle

- Facial nerve divides the gland into:
 - Superficial lobe
 - Deep lobe
- Parotid duct:
 - Emerges from the anterior border of the gland
 - Passes forward over the lateral surface of the masseter
 - Pierces the buccinator muscle
 - Enters the vestibule of the mouth
 - Opens upon a small papilla opposite the upper second molar tooth

> Nerve Supply

- Glossopharyngeal nerve carries preganglionic parasympathetic secretomotor fibers
 - These fibers:
 - Pass into the tympanic nerve
 - Synapse in the otic ganglion

- Postganglionic fibers:

- Attach to the auriculotemporal nerve
 - Follow it to the gland

» Submandibular Gland

- The submandibular gland consists of a mixture of serous and mucous acini.

- Location:

- Lies beneath the lower border of the body of the mandible
- Divided into superficial and deep parts by the mylohyoid muscle

- The deep part of the gland lies:

- Beneath the mucous membrane of the mouth
 - On the side of the tongue

- Submandibular duct:

- Emerges from the anterior end of the deep part of the gland

- Runs forward beneath the mucous membrane of the mouth
- Opens into the mouth on a small papilla
Papilla is situated at the side of the frenulum of the tongue

> Nerve Supply

- The facial nerve provides the parasympathetic secretomotor supply via:
 - Its chorda tympani branch
 - The submandibular ganglion
- Postganglionic fibers pass directly to the gland

» Sublingual Gland

- The sublingual gland lies:
 - Beneath the mucous membrane (sublingual fold) of the floor of the mouth
 - Close to the frenulum of the tongue

- Acini composition:

- Has both serous and mucous acini
 - Mucous acini predominate

- Sublingual ducts:

- 8 to 20 in number
- Open into the mouth on the summit of the sublingual fold (see Fig. 12.74B)

> Nerve Supply

- The nerve supply to the sublingual gland is the same as that for the submandibular gland (see above)

"Clinical Notes"

» Parotid Duct Injury

- The parotid duct is a comparatively superficial structure on the face.
 - It may be:
 - Damaged in injuries to the face
 - Inadvertently cut during surgical operations on the face
 - The duct:
 - Is about 2 in. (5 cm) long
 - Passes forward across the masseter
 - Located about a fingerbreadth below the zygomatic arch

» Parotid Salivary Gland and Facial Nerve Lesions

- The parotid salivary gland consists of:
 - Superficial and deep parts
- The important facial nerve lies in the interval between these parts
 - A benign parotid neoplasm:
 - Rarely, if ever, causes facial palsy
 - A malignant tumor of the parotid:
 - Is usually highly invasive
 - Quickly involves the facial nerve
 - Causes unilateral facial paralysis

» Parotid Gland Infections

- The parotid gland may become acutely inflamed due to:
 - Retrograde bacterial infection from the mouth via the parotid duct
 - Infection via the bloodstream, as in mumps
- In both cases:
 - The gland is swollen
- It is painful because:
 - The fascial capsule (derived from the investing layer of deep cervical fascia) is strong and limits swelling
- The swollen glenoid process, which:
 - Extends medially behind the temporomandibular joint
 - Is responsible for the pain experienced in acute parotitis when eating

» Frey's Syndrome

- Frey's syndrome is a complication that can develop after penetrating wounds of the parotid gland.
- Characteristic symptom:
 - When the patient eats, beads of perspiration appear on the skin covering the parotid
- Cause:
 - Damage to the auriculotemporal and great auricular nerves
- Mechanism:
 - > During healing:
 - Parasympathetic secretomotor fibers in the auriculotemporal nerve grow out
 - They join the distal end of the great auricular nerve
 - These fibers eventually reach the sweat glands in the facial skin

-> Result:

- A stimulus intended for saliva production instead produces sweat secretion

» Submandibular Salivary Gland: Calculus Formation

- The submandibular salivary gland is a common site of calculus formation.
- This condition is rare in other salivary glands.
 - Diagnostic features include:
 - Tense swelling below the body of the mandible
 - Swelling is greatest before or during a meal
 - Swelling is reduced in size or absent between meals
 - On examination of the floor of the mouth:
 - There is absence of ejection of saliva from the orifice of the duct of the affected gland

- Frequently:

- The stone can be palpated in the duct, which lies below the mucous membrane of the floor of the mouth

» Submandibular Lymph Node Enlargement and Submandibular Salivary Gland Swelling

- The submandibular lymph nodes are commonly enlarged due to pathologic conditions of:

- Scalp
- Face
- Maxillary sinus
- Oral cavity

- One of the most common causes of painful enlargement of these nodes is: Acute infection of the teeth

- Important clinical distinction:

- Enlargement of submandibular lymph nodes should not be confused with pathologic swelling of the submandibular salivary gland

» Sublingual Salivary Gland and Cyst Formation

- The sublingual salivary gland lies beneath the sublingual fold of the floor of the mouth
- It opens into the mouth by numerous small ducts
- Blockage of one or more ducts is believed to be the cause of cysts under the tongue