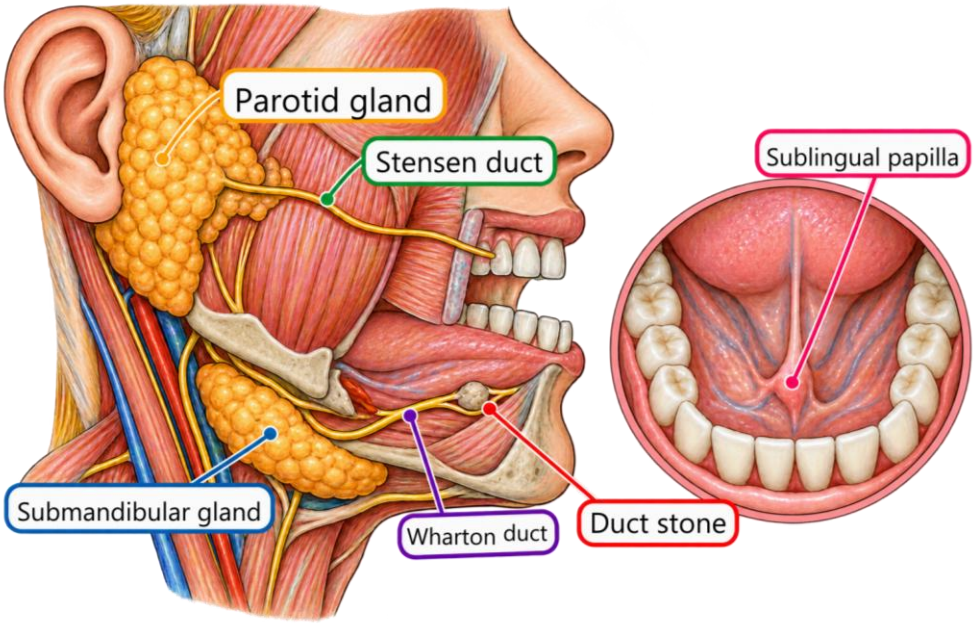
General Surgery - Topic 21 - Disorders of salivary glands

Disorders of the Salivary Glands

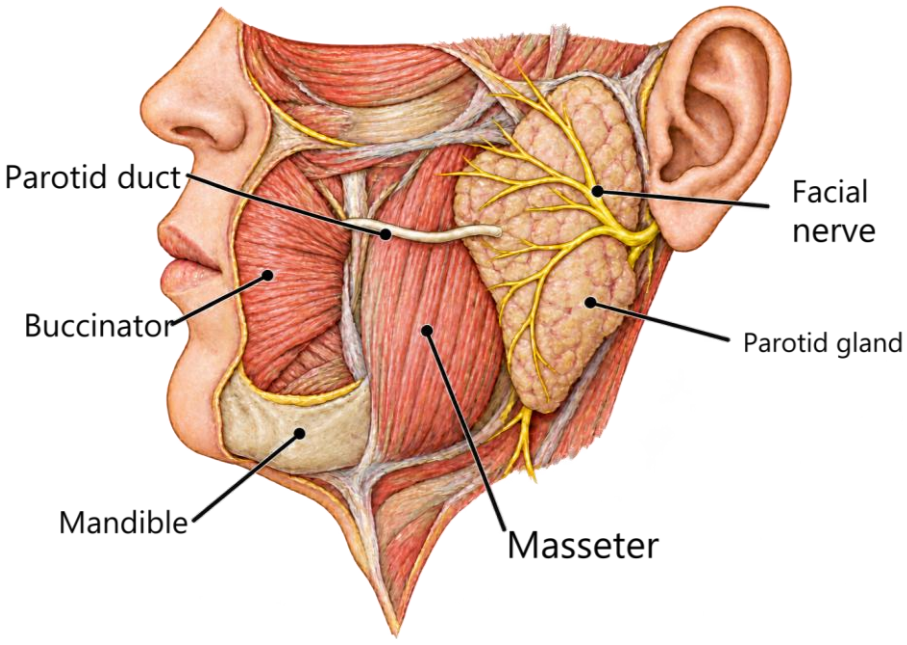
Surgical Anatomy and Function



The major salivary glands and ducts are shown with a stone in the submandibular duct

- The major paired salivary glands are the parotid, submandibular and sublingual glands.
- Many minor glands lie within the mucosa of the mouth and upper aerodigestive tract.
- Saliva lubricates food, supports swallowing and speech, protects oral tissues and begins digestion.
- Reduced flow encourages oral infection and can contribute to ascending duct infection.

1. Parotid Gland



The parotid duct crosses masseter, while the facial nerve branches pass through the parotid region

Copyright by Engacy Learning Private Limited. All rights reserved. Reproduction or distribution without written consent is strictly prohibited.

Position, Duct and Relations

- The parotid lies mainly in front of and below the ear, around the posterior border of the mandibular ramus.
- Its duct crosses the masseter, turns medially and pierces buccinator before opening opposite the upper second molar.
- The facial nerve passes through the gland and divides into branches that supply the facial muscles.
- The nerve provides a useful surgical division between superficial and deep parts of the gland but does not supply its secretory function.
- Within the gland, the facial nerve is generally superficial to the retromandibular vein, with the external carotid artery deeper.

Innervation and Deep Extension

- Parasympathetic secretomotor fibres reach the gland through the glossopharyngeal pathway, otic ganglion and auriculotemporal nerve.
- The deep part of the gland can extend towards the parapharyngeal space, so a tumour may produce an intraoral bulge.

2. Submandibular and Sublingual Glands

A. Submandibular Gland

- The submandibular gland wraps around the posterior border of mylohyoid, with superficial and deep parts.
- Wharton's duct runs forwards in the floor of mouth and opens on the sublingual papilla beside the lingual frenulum.
- The lingual nerve is closely related to the duct and loops beneath it as it passes towards the tongue.
- The marginal mandibular facial-nerve branch, lingual nerve and hypoglossal nerve are important during submandibular surgery.

B. Sublingual Gland

- The sublingual gland lies above mylohyoid beneath the floor-of-mouth mucosa and drains through several small ducts.
- Its relation to the floor of mouth and mylohyoid explains the oral and cervical patterns of a ranula.
- The submandibular and sublingual glands receive parasympathetic fibres through the chorda tympani, lingual nerve and submandibular ganglion.

Causes and Clinical Patterns of Salivary Swelling

Copyright by Engacy Learning Private Limited. All rights reserved. Reproduction or distribution without written consent is strictly prohibited.

Pattern	Important possibilities
Meal-related pain and swelling	A stone or duct narrowing may obstruct flow.
Tender swelling with pus	Bacterial sialadenitis or an abscess is possible.
Dry mouth with bilateral swelling	Autoimmune or other systemic disease may be present.
Persistent focal mass	A benign or malignant tumour requires assessment.
Mass with facial weakness	Malignant nerve involvement must be considered.

History

- Ask whether the swelling is painful, sudden, recurrent or steadily enlarging.
- Pain and swelling triggered by meals suggest obstruction, especially a duct stone.
- Fever, redness and pus suggest infection, while a persistent focal mass requires assessment for a tumour.
- Ask about dry mouth, dry eyes, dehydration, medicines that reduce salivation, previous irradiation and autoimmune disease.
- Record facial weakness, numbness, trismus, weight loss and previous skin cancer of the scalp or face.
- Bilateral enlargement has a broader differential than a solitary unilateral mass.

Examination

Gland and Duct Examination

- Explain the examination, obtain consent and inspect both sides of the face and neck.
- Define the gland involved and assess tenderness, warmth, consistency, mobility and fixation.
- Examine the oral cavity and duct openings for swelling, a visible stone, reduced saliva or pus.
- Palpate the submandibular gland and duct bimanually using a gloved finger in the floor of mouth and the other hand beneath the jaw.

Nerve Function and Malignancy Clues

- Assess facial movement before any parotid intervention and document the findings.
- Examine cervical nodes and the overlying and nearby skin.
- A painful hard mass with fixation, facial weakness or cervical nodes raises concern for malignancy.
- Absence of these warning signs does not prove that a tumour is benign.

Copyright by Engacy Learning Private Limited. All rights reserved. Reproduction or distribution without written consent is strictly prohibited.

Inflammation, Obstruction and Cysts

Clinical Groups

1. Acute Bacterial Sialadenitis

Mechanism and Recognition

- Reduced salivary flow allows organisms to ascend the duct and infect the gland.
- Dehydration, poor oral intake, postoperative illness and duct obstruction are common contributing factors.
- The gland becomes painful, swollen and tender, and pus may appear at the duct opening.
- Assess systemic illness and obtain a suitable culture of purulent material when available.

Treatment and Reassessment

- Treatment includes hydration, oral hygiene, analgesia, gentle gland massage and an appropriate antibiotic guided by severity and local policy.
- Hospital treatment is needed for sepsis, inability to maintain intake, deep extension or airway concern.
- Ultrasound or other imaging can identify a stone or a drainable abscess.
- A significant abscess needs specialist drainage, with care to protect nearby nerves.
- Persistent symptoms require reassessment for obstruction, resistant infection or an alternative diagnosis.

2. Viral and Autoimmune Disease

A. Viral Parotitis

- Viral parotitis can cause tender gland enlargement, often affecting both sides.
- Mumps requires appropriate infection-control and public-health measures according to local guidance.
- Antibiotics do not treat an uncomplicated viral infection.

B. Autoimmune and Other Enlargement

- Sjogren disease commonly causes dry mouth and dry eyes and may produce gland enlargement.
- Persistent asymmetric swelling in an autoimmune setting needs assessment because other disease, including lymphoma, may coexist.
- IgG4-related disease and other inflammatory disorders are additional specialist differentials.
- Sialadenosis is a non-neoplastic, non-inflammatory enlargement associated with several metabolic, nutritional or medicine-related conditions.

Copyright by Engacy Learning Private Limited. All rights reserved. Reproduction or distribution without written consent is strictly prohibited.

3. Salivary Stones

Presentation and Investigation

- A salivary stone obstructs flow and causes recurrent painful swelling, especially during meals.
- Stones occur most often in the submandibular system, where the saliva and long ascending duct favour stone formation.
- A distal duct stone may be palpable or visible in the floor of mouth.
- Ultrasound is often an initial investigation, while CT can help locate a stone that is deep or uncertain.
- Selected duct disease can be assessed with sialendoscopy or other specialist imaging.

Conservative and Procedural Treatment

- Small uncomplicated stones may pass with hydration, gentle massage and measures that stimulate saliva.
- Do not probe the duct with a sharp object or attempt forceful blind extraction.
- Persistent obstruction may be treated by endoscopic extraction, fragmentation, a combined approach or removal through the mouth.
- Preserve the functioning gland where feasible, while selected recurrent or inaccessible disease may require gland excision.
- Treat an associated infection and reassess after it settles.

4. Ranula and Mucocele

A. Mucocele

- A mucocele is usually caused by mucus escaping from an injured minor salivary duct into surrounding tissue.
- It often presents as a soft fluctuant lesion, commonly after minor trauma to a lower-lip gland.

B. Ranula

Definition, Extension and Imaging

- A ranula is a mucus collection associated with the sublingual gland and appears as a soft bluish swelling in the floor of mouth.
- A plunging ranula extends into the neck through or around mylohyoid.
- Ultrasound or cross-sectional imaging helps define a deep or uncertain lesion.

Treatment Options and Recurrence

- Treatment is selected by the specialist according to size, recurrence and the gland of origin.

Copyright by Engacy Learning Private Limited. All rights reserved. Reproduction or distribution without written consent is strictly prohibited.

FREE PREVIEW

Click here to visit our website

MBBS PREMIUM NOTES

Complete MBBS notes for every subject and year are available only in the FirstHope app.

Scan or click here

Click here to get the app >

Available on Google Play

Browse MBBS notes by year

firsthope.co.in/mbbs

Click here to explore MBBS >

Scan or click here

FirstHope Medical on Instagram

@firsthope.medical

Click here to follow

App and notes help

Find answers about access and downloads

Click here for help

YEAR 1 / YEAR 2 / YEAR 3 / YEAR 4