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Exam Preparatory Manual for Undergraduates

ORAL PATHOLOGY

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CHAPTER

Diseases of Salivary Glands

Q 1. What is a gland?

Ans. A gland is a unit of structure and function, involved in the manufacture and discharge of a secretion.

Q 2. What are salivary glands?

Ans. These are exocrine glands, which continuously secrete saliva to keep the mouth moist and healthy.

Q 3. What are the different types of salivary glands present?

Ans. Salivary glands are mainly of two types—major and minor glands.

Q 4. What are the major salivary glands?

Ans. There are three paired major glands namely—the parotids, the submandibular and the sublingual glands.

Q 5. What are minor salivary glands?

Ans. Besides the major glands, there are numerous minor salivary glands (their number may be up to 300) present in almost every part of the oral cavity.

Q 6. Name the areas in the oral cavity, where there are no minor salivary glands present.

Ans. Gingiva and the anterior part of the hard palate.

Q 7. Name the extra-oral area where minor salivary glands are also present?

Ans. Paranasal sinuses.

Q 8. What are the different salivary gland diseases commonly seen?

Ans. Salivary gland diseases are broadly divided into two categories:

- Non-neoplastic diseases
- Neoplastic diseases.

Q 9. What are the common non-neoplastic disorders of the salivary gland seen?

Ans. The non-neoplastic disorders of the salivary gland include developmental, inflammatory, immunological or metabolic types, etc.

Q 10. Name the common developmental disorders of salivary glands.

Ans.

- Aplasia (agenesis) of the salivary gland
- Hypoplasia

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- Aberrant salivary gland
- Atresia (absence of duct in the gland)
- Accessory ducts
- Diverticuli
- Lingual mandibular salivary gland depression.

Q 11. Name the common reactive lesions of the salivary glands.

Ans.

- Mucus retention cyst
- Mucus extravasation cyst
- Sialolithiasis
- Post-radiation sialadenitis
- Chronic sclerosing sialometaplasia.

Q 12. What are the common infective lesions of the salivary glands?

Ans.

- Bacterial sialadenitis
  - Acute
  - Chronic
  - Recurrant
- Viral sialadenitis
  - Mumps
  - Cytomegalic inclusion disease.

Q 13. Name the common immune-mediated disorders of salivary glands.

Ans. Immune-mediated disorders are:

- Mikulicz's disease
- Sjogren's syndrome.

Q 14. Name the miscellaneous disorders of salivary glands.

Ans.

- Heerfordt's syndrome
- Sialosis
- Ptyalism and aptyalism
- HIV the associated salivary gland disease.

Q 15. What are the special investigations done for confirmatory diagnosis of salivary gland disorders?

Ans. Biopsy, sialometry, sialography, sialochemistry, CT scan, scintigraphy and ultrasonography, etc.

Q 16. Name the benign epithelial tissue neoplasms of salivary glands.

Ans.

- Pleomorphic adenoma (mixed tumor)
- Monomorphic adenoma
- Adenolymphoma (Warthin's tumor)
- Oxyphil adenoma.

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Q 17. Name the malignant epithelial tissue neoplasms of salivary glands.

Ans.

- Mucoepidermoid tumor
- Acinic cell tumor
- Carcinomas
- Adenoid cystic carcinoma
- Adenocarcinoma
- Epidermoid carcinoma
- Undifferentiated carcinoma
- Carcinoma in pleomorphic adenoma (malignant mixed tumor).

Q 18. Name the benign mesenchymal tissue neoplasms of salivary glands.

Ans.

- Fibroma
- Fibrosarcoma
- Lipoma
- Neurilemmoma
- Hemangioma
- Lymphoma.

Q 18a. What is salivary gland aplasia?

Ans. Congenital absence of the salivary glands (both major and minor glands) due to complete failure of their development or genesis is called salivary gland aplasia.

Q 19. What is the effect of salivary gland aplasia in patients?

Ans. Aplasia of the major salivary gland commonly produces xerostomia (dryness of mouth) due to lack of production of saliva in the oral cavity.

Q 20. Name the conditions which may be associated with salivary gland aplasia.

Ans. Congenital aplasia of the salivary glands may be associated with the following diseases:

- Hereditary ectodermal dysplasia
- Mandibulofacial dysostosis
- Congenital aplasia of the lacrimal glands
- Hemi-facial microstomia.

Q 21. What is hypoplasia of the salivary glands?

Ans. Relative underdevelopment of the salivary gland is known as salivary gland hypoplasia.

Q 22. Why hypoplasia of the salivary glands occur?

Ans. Hypoplasia of the salivary glands may occur either due to congenital absence of some part of the gland or due to atrophy of the gland secondary to lack of neuromuscular stimulations.

Q 23. Name one condition which may be associated with hypoplasia of the salivary glands.

Ans. Salivary gland hypoplasia is often associated with Melkersson-Rosenthal syndrome; which is characterized by cheilitis granulomatosa, facial paralysis and fissured tongue.

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Q 24. What is ectopic salivary gland?

Ans. The occurrence of normal salivary gland tissue in anatomically unusual locations is known as salivary gland ectopia and such glands are known as ectopic salivary glands.

Q 25. Name the common locations where ectopic salivary glands are often found.

Ans.

- Mandibular body
- Gingiva
- Masseter muscle
- Upper portion of neck near the branchial cleft.

Q 26. What is gingival salivary gland choristoma (choristoma is a mass of histologically normal tissue in an abnormal location)?

Ans. Normally minor salivary glands are not present in gingiva. however sometimes ectopic salivary gland tissues may be found in gingiva, which produce a tumor-like mass called gingival salivary gland choristoma.

Q 27. What are the congenital defects seen in salivary gland ducts?

Ans.

- Atresia
- Absence of duct orifice
- Accessory ducts.

Q 28. What is salivary gland duct atresia?

Ans. Atresia is a rare congenital anomaly characterized by absence or narrowing of the duct system of salivary gland.

Q 29. What can be the possible effect of atresia?

Ans. It can cause xerostomia and development of retention cyst (mucoceles).

Q 30. Accessory ducts are often present in relation to which salivary gland?

Ans. These are present often in relation to the parotid gland (either above or below the normal Stensen's duct).

Q 31. What are salivary gland diverticuli?

Ans. Diverticuli refer to the small pouches or out-pocketings in the ductal system of major salivary glands.

Q 32. Diverticuli are generally seen in relation to which gland?

Ans. These are predominantly found in relation to parotids.

Q 33. What problem diverticuli can cause?

Ans. Diverticuli may produce recurrent swellings and acute sialadenitis due to retention of saliva in those areas where the pouches are present along the course of the duct.

Q 34. How the salivary gland diverticuli can be detected?

Ans. Diverticuli can be diagnosed or detected by sialography. (Radiographic demonstration of the salivary ducts by means of the injection of substances opaque to X-rays).

Q 35. What is lingual mandibular salivary gland depression?

Ans. It is a developmental concavity in the lingual cortex of mandible usually in the third molar area; which forms around an accessory salivary gland.

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Q 36. What are the other names given to lingual mandibular salivary gland depression?
Ans. The condition also has several other names such as Stafne's bone cyst, static bone cyst or latent bone cyst, etc.

Q 37. What clinical symptom lingual mandibular salivary gland depression produces?
Ans. It is clinically asymptomatic.

Q 38. Describe the radiographic appearance of lingual mandibular salivary gland depression.
Ans. It radiographically presents a distinct, localized, deep concavity on the lingual aspect of mandible, in the third molar region in between the mandibular canal and the lower border of mandible.

Q 39. Name the lesion, which often creates confusion with lingual mandibular salivary gland depression?
Ans. Hemorrhagic bone cyst, this cyst almost always lies above the mandibular canal while the lingual mandibular salivary gland depression lies below the canal.

Q 40. What is sialolithiasis?
Ans. Sialolithiasis is a pathological condition characterized by the presence of one or more calcified stones (sialoliths) within the salivary gland itself or within its duct.

Q 41. Sialoliths develop more often in relation to which gland?
Ans. Submandibular salivary gland (70–90 percent cases).

Q 42. Name the duct system of submandibular salivary gland.
Ans. Wharton's duct.

Q 43. Why sialoliths develop more often in relation to submandibular gland?
Ans.

- Multiple sharp bends or curvatures in the Wharton's duct
- More viscous nature of saliva of this gland
- Higher calcium levels in saliva of this gland
- Dependent position of the gland often increases the chance of stasis of saliva.

Q 44. Can sialoliths form in relation to minor salivary glands?
Ans. Yes.

Q 45. What are the symptoms of sialolithiasis?
Ans.

- Intermittent pain
- Discomfort
- Recurrent swelling of the affected gland.

Q 46. When actually the pain starts in sialolithiasis?
Ans. When size of the sialolith is large enough to cause occlusion of the salivary gland duct (resulting in retention of saliva), then only pain starts.

Q 47. During what time, pain and discomfort become more severe in sialolithiasis?
Ans. Pain and discomfort become more severe during meals (as the taste and smell of food increase the rate and volume of salivary secretion). Moreover, the symptoms become

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severe particularly when the patient takes sour foods or beverages; or when direct stimulation of salivary secretion is done with a lemon drop candy.

Q 48. What will be the clinical feature of sialolithiasis in submandibular gland?

Ans. It will produce a unilateral swelling on the floor of mouth medial to the inferior border of the mandible; the swelling is often firm and tendered on palpation.

Q 49. What will be the clinical feature of sialolithiasis in parotid gland?

Ans. Sialolithiasis of the parotid often causes firm swelling over the ramus of the mandible; the swelling also increases during meals.

Q 50. Minor salivary gland sialolithiasis can often be seen in which areas of mouth?

Ans. Upper lip and buccal mucosa.

Q 51. Why xerostomia does not occur in sialolithiasis?

Ans. Sialoliths do not cause xerostomia since they involve only one or two glands.

Q 52. During clinical examination of sialolith, what type of palpation is done?

Ans. Bidigital palpation using both hands.

Q 53. Name different X-rays often advised for detection of sialoliths at different locations.

Ans.

Table 4.1: Different X-rays often advised for detection of sialoliths at different locations.

X-ray	Location of Sialolith
Mandibular standard occlusal X-ray	For sialolith in submandibular duct.
Mandibular lateral jaw X-ray	For sialolith within submandibular gland itself.
Panoramic radiograph	For sialolith in parotid
Posterior occlusal film	For sialolith in branch of submandibular duct
Submento-vertex view	For sialolith in branch of submandibular duct
Lateral jaw film	for sialolith in branch of submandibular duct

Q 54. Name the situations where X-rays fail to detect the sialolith.

Ans.

- In case of superimposition of sialolith with the mandibular bone
- If the sialolith is not fully calcified.

Q 55. What is sialography?

Ans. Sialography is a method of detection of salivary stones within a gland or its duct by prior retrograde injection of a radiopaque dye within the duct system and subsequently obtaining a radiograph of the said gland or duct.

Q 56. What investigations are done in case the conventional imaging techniques fail to detect the sialolith?

Ans. Ultrasonography and CT scan.

Q 57. Describe the macroscopic appearance of sialolith.

Ans. Sialolith appears as a hard, round or oval, rough or smooth solid mass; often having yellowish or yellowish-white color.

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Q 58. Describe the composition of a sialolith.

Ans.

Table 4.2: Composition of a Sialolith

Components	Percentage
Calcium phosphate	75%
Calcium carbonates	12%
Soluble salt	5%
Organic matter	5%
Water	3%

Q 59. What is the histological appearance of a sialolith?

Ans. Microscopically the salivary stone is acellular and amorphous and when decalcified it presents the following—

- Concentric laminations of amorphous basophilic matrix
- The outer margin may exhibit aggregates of microbial colonies
- The ductal lining surrounding the stone shows oncocytic, squamous and/or mucous metaplasia of varying degrees.

Q 60. Name the conditions which may simulate sialolithiasis.

Ans.

- Endemic parotitis
- Salivary gland neoplasm
- Mesenchymal neoplasms
- Hypervitaminosis-A
- Calcification of lymph node in chronic long-standing tuberculosis.

Q 61. Name the different treatment modalities for sialoliths.

Ans.

- Small stones in the distal parts of the duct—removal through the orifice by digital manipulation only.
- Surgical removal of the stone
- Lithotripsy
- Sialoadenectomy.

Q 62. What is lithotripsy?

Ans. It is a non-invasive technique for the treatment of a large sialolith, in which the large stone is first disintegrated and then the powdered particles are carried out of the duct via saliva.

Q 63. What is sialoadenectomy?

Ans. It is the surgical removal of sialolith along with the involved gland.

Q 64. What is the indication of sialoadenectomy?

Ans. It is indicated in situations where conventional and conservative techniques for removal of sialolith fail; for example:

- Intraglandular stones
- Multiple stones in a single gland
- Diffuse glandular calcifications.

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Q 65. What is the common mistake made during the removal of a sialolith?

Ans. Due to improper handling at the time of surgery, the stone may be pushed from duct into the gland mass.

Q 66. What is the treatment of minor salivary stones?

Ans. Minor salivary gland stones are treated by simple surgical excision of the stone along with the surrounding minor salivary gland tissue.

Q 67. What is post radiation sialadenitis?

Ans. It the inflammation of the salivary glands, which are damaged due to radiation therapy.

Q 68. What is chronic sclerosing sialadenitis?

Ans. Chronic sclerosing sialadenitis is the chronic inflammation of the salivary gland resulting in degeneration and subsequent replacement of acini by fibrous tissue.

Q 69. What are the causes of chronic sclerosing sialadenitis?

Ans.

- Autoimmune disease
- Systemic and metabolic disorders
- Direct trauma
- Infection
- Occlusion of the duct by calculi
- Compression of the gland or duct by any neoplasm
- Salivary glands cysts
- Radiation therapy
- Medication and drugs.

Q 70. What are the clinical features of chronic sclerosing sialadenitis?

Ans. Nonspecific, firm, painless swelling of the gland; with occasional stagnation in the salivary flow.

Q 71. Describe the histological features of chronic sclerosing sialadenitis.

Ans.

- There will be progressive destruction of the salivary gland acinar cells with chronic inflammatory cell infiltration in the gland
- Once the acini are lost, the gland parenchyma undergoes progressive sclerosis or fibrosis
- Even after the gland acini are completely degenerated, the ductal elements often remain unaffected
- Sometimes there can be retrograde bacterial infection in the damaged gland.

Q 72. What is the treatment of chronic sclerosing sialadenitis?

Ans.

- Etiologic factors should be removed
- Sialoadenectomy in case of irreversible damage to the gland
- Use of artificial saliva
- Administration of pilocarpine to stimulate salivary flow
- Use of electro-stimulatory aid to stimulate the salivary flow.

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- Can be helpful for preparation in the PG entrance examinations too.



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Dr Purkait is an excellent orator and presented many scientific papers at many international and national level conferences. This is the second book of Dr Purkait and he is already a nationally acclaimed author for his exceptionally popular book *Essentials of Oral Pathology* also published by 'M/s Jaypee Brothers Medical Publishers' the top international medical publication house.

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