🤤 Gastrointestinal Pathology

Salivary Glands

I. 💧 Basic Principles

📌 Definition

Salivary glands are exocrine glands that produce and secrete saliva.

📊 Classification of Salivary Glands

Type	Glands Included

Major glands	Parotid, submandibular, sublingual
Minor glands	Numerous microscopic glands throughout oral mucosa

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🧠 Concept Insight

Functions of saliva 💧

- Lubrication of food
- Initiation of digestion
- Protection against microbes
- Maintenance of oral hygiene

II. 🦠 Mumps

📌 Definition

- Viral infection causing bilateral parotid gland inflammation

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⚙️ Pathogenesis (Flowchart)

Mumps virus infection → Viral spread to salivary glands → Parotid gland inflammation → Painful parotid swelling

Possible systemic spread

- Testes → Orchitis
- Pancreas → Pancreatitis
- CNS → Aseptic meningitis

🔍 Clinical Features

- Bilateral parotid swelling
- Fever

- Pain while chewing/swallowing

📊 Important Complications

Complication	Significance
Orchitis	Risk of sterility ⚠️
Pancreatitis	↑ Serum amylase
Aseptic meningitis	Viral CNS involvement

🧠 Concept Insight

Why is serum amylase increased? 🧪

Because amylase is produced by:

- Salivary glands
- Pancreas

👉 Therefore, inflammation of either organ increases serum amylase.

🎯 Exam Focus

- Bilateral parotid swelling = classic clue
- Orchitis in teenage boys = highly tested
- Increased serum amylase does not always mean pancreatitis

III. 🔥 Sialadenitis

📌 Definition

- Inflammation of a salivary gland

⚙️ Pathogenesis (Flowchart)

Salivary stone (sialolithiasis) → Obstruction of salivary flow → Saliva stasis → Secondary bacterial infection → Inflammation of gland → Sialadenitis

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🦠 Most Common Organism

- Staphylococcus aureus

🔍 Clinical Features

- Usually unilateral
- Painful swollen gland

- Fever may occur

🧠 Concept Insight

Saliva normally has:

- Antibacterial action
- Continuous flushing effect

👉 Obstruction removes this protection, allowing infection.

🎯 Exam Focus

- Stone obstruction = most common cause
- Usually unilateral (important distinction from mumps)

IV. 🧩 Pleomorphic Adenoma

📌 Definition

- Most common salivary gland tumor
- Benign mixed tumor composed of:
  - Epithelial tissue
  - Stromal tissue (e.g., cartilage)

🧠 Why "Pleomorphic"?

"Pleomorphic" refers to the mixed histologic appearance:

- Glandular epithelial elements
- Mesenchymal-like stromal components

📍 Common Site

- Parotid gland

🔍 Clinical Features

- Mobile
- Painless
- Slow-growing
- Circumscribed mass near angle of jaw

⚙️ Recurrence Mechanism

Tumor develops pseudocapsule → Small microscopic tumor projections extend beyond capsule → Incomplete surgical removal → Residual tumor remains → Recurrence

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⚠️ Malignant Transformation

Rarely:

Pleomorphic adenoma → Malignant transformation →

Facial nerve involvement → Facial weakness/paralysis 😟

🧠 Concept Insight

Why facial nerve signs occur?

The facial nerve passes through the parotid gland.

👉 Any malignant invasion may damage the nerve.

🎯 Exam Focus

- Most common salivary tumor ⭐
- Benign but recurrent

- Facial nerve involvement suggests malignant transformation

V. 🧪 Warthin Tumor

📌 Definition

- Benign cystic salivary gland tumor with:
  - Lymphoid stroma
  - Germinal centers

📍 Common Site

- Almost always in parotid gland

🔍 Histologic Features

- Cystic spaces
- Abundant lymphocytes
- "Lymph node-like" appearance

📊 Key Facts

Feature	Warthin Tumor
Nature	Benign
Rank	2nd most common salivary tumor
Site	Parotid
Histology	Lymphoid stroma + cysts

🧠 Concept Insight

The lymphoid-rich background gives the tumor its characteristic microscopic appearance.

🎯 Exam Focus

- Second most common salivary tumor
- Strong association with parotid gland

VI. ⚠️ Mucoepidermoid Carcinoma

📌 Definition

- Most common malignant salivary gland tumor
- Composed of:
    - Mucinous cells

- Squamous cells

📍 Common Site

- Parotid gland

⚙️ Pathogenesis (Flowchart)

Malignant transformation of salivary gland epithelium → Formation of mucin-producing cells + squamous cells → Invasive growth → Facial nerve involvement → Malignant salivary tumor

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🔍 Clinical Features

- Painful or painless mass

- Facial nerve weakness may occur ⚠️

🧠 Concept Insight

Facial nerve involvement in a salivary gland mass strongly suggests:

👉 Malignancy

⚖️ Important Salivary Tumor Comparison Table

Feature	Pleomorphic Adenoma	Warthin Tumor	Mucoepidermoid Carcinoma
Nature	Benign	Benign	Malignant
Frequency	Most common overall	2nd most common	Most common malignant

Site	Parotid	Parotid	Parotid
Histology	Mixed stromal + epithelial	Lymphoid stroma	Mucinous + squamous cells
Facial nerve involvement	Rare (if malignant transformation)	No	Common ⚠️

🗒️ Revision Summary

- Mumps → bilateral parotitis + orchitis + ↑ amylase
- Sialadenitis → obstruction + Staph aureus
- Pleomorphic adenoma → most common benign tumor
- Warthin tumor → cystic + lymphoid stroma
- Mucoepidermoid carcinoma → most common malignant tumor

-> The End <-