Lec 1
oral pathology

- ***Pathology = the study of diseases.***

- It explains the cause (etiology), development (pathogenesis), structural changes (morphology), and effects (clinical features) of disease.

- **Oral Pathology is a specialized branch of pathology that studies diseases of:**

- **Teeth**
- **Oral cavity**
- **Jaw bones**
- **Salivary glands**
- **Associated structures**

- **Why Study Oral Pathology?**

- To recognize early changes in the mouth.

- To differentiate between normal and abnormal tissues.


Oral Cancer

- To diagnose oral diseases.

- To understand how systemic diseases show signs in the mouth.

- To help in prevention and treatment planning.

- **Tools Used in Oral Pathology**

- Clinical examination (visual + palpation).

- Radiographs (X-rays, CT, MRI).

- Biopsy & Histopathology (gold standard).

- Laboratory tests (blood, microbiology, immunology).

- **Slide preparation**: preparation of the tissue section for microscopic examination and interpretation the structure, function of the tissue.

Slide preparation

- ***There are four methods of preparation of oral tissue for microscopic examination which are commonly used:***
- 1_specimen may be embedded in paraffin-sectioned this is the most common method used for preparation of soft tissue which is usually embedded in paraffin and then cutting to 4-10 µm thick.
- 2_specimen may be embedded in paraffin-sectioned used for bone or teeth such specimen must be decalcified (removal of mineral structure).
- 3_ specimen of calcified tissue, section of undecalcified tooth or bone (ground section)
- 4_specimen of soft tissue may be frozen and sectioned without embedding in paraffin because embedding would destroy the tissue.

- ***Steps of the slide preparation:***
- 1_Obtaining the specimen: specimen taken from human or animal must be removed carefully .
- 2_Fixation of the specimen: should be placed immediately in about 400mm of 10% neutral formalin.
- 3_Dehydration of the specimen: is placement successively in increasing % of alcohol 40%,60%,80%,95% then to xylene.
- 4_Embedding the specimen: completely in the center of a block of paraffin.
- 5_Cutting the section of the specimen: thickness 4-10 μm on a microtome knife.
- 6_Mounting the cut sections on slides, suitable length of the paraffin ribbon are then mounted on prepared microscope slide.
- 7_Staining the sections: staining depend on the kind of tissue, stain used for routine microscope study is hematoxylin & eosin.

- **Ground sections of teeth or bone:**
- 1_Decalcification of bone and teeth, structures of teeth are damaged because tooth enamel about 96% mineral substance and completely destroyed by ordinary methods of decalcification.
- 2_ teeth and bone may be studied by making ground sections of specimens.