



Clinical Examination

Careful history taking should be followed by a thorough and systematic clinical examination,

Diagnostic instruments include:

generally the instruments used in clinical examination are:-

- 1. Dental Mirror.**
- 2. Dental Probe.**
- 3. Dental Tweezer.**



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Methods of Clinical Examination:

In Clinical practice, examination of patients involves FOUR ROUTINE PROCEDURES:

1. Inspection.

2. Palpation.

3. Percussion.

4. Auscultation.

1-**Inspection (Visual):**

At the start of every examination you must begin by looking at the patient **as a whole** before looking at the region in question for signs that may provide clues for a Diagnosis.

Any changes in the **color**, or **asymmetry** of the face, any **growth, ulceration, Scar, Defect**, Loss of tissue should be inspected with your eyes



2- Palpation:

Next, use your **fingertips** to feel for **tender spots, Lump, Fluctuant Swelling, & Mobile teeth**. Palpation gives information about texture Dimension, consistency, Temperature, & Functional Events.

Probing:

(Is a sort of palpation) is one of **the most important** diagnostic techniques used in Dentistry. in which the teeth are probed for caries with the ***dental probe*** & ***periodontal probe*** is used to measure the periodontal sulcus depth. ***Lacrimal probe*** is used for the examination of parotid & submandibular salivary gland ducts. **Fistulous tracts** can be probed with Gutta Percha points to determine the origin of the Fistula.



Dental probe:

- If the probe sticks in its place, roughness in the surface and a lesion may be possible.
- Advanced smooth surface caries and root caries feels soft upon penetration of the probe.





3- Percussion:

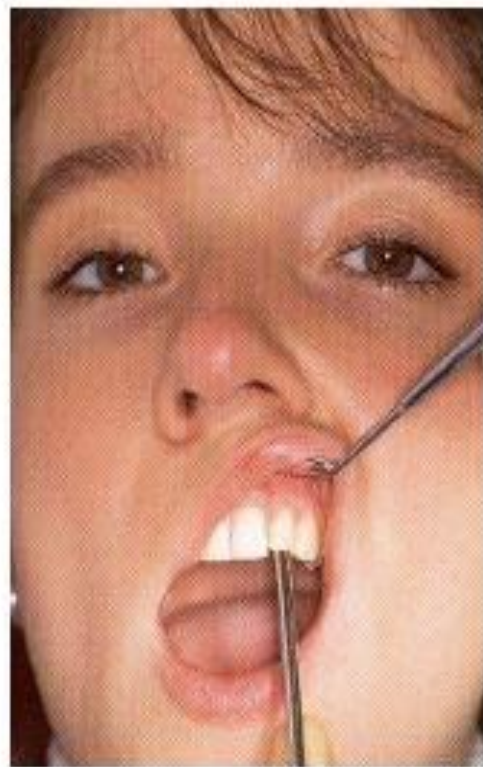
Is the technique of **striking** the tissue with **fingers or an instrument** (e.g. Handle of the dental mirror).

The examiner listens to the resulting sounds & observes the response of the patient

- **Extra-orally**, percussion is often used to detect tenderness in the frontal and maxillary **sinuses** by tapping the finger tips against a finger placed over the sinuses

- **Intra-orally**, percussion is used to evaluate the **teeth** by tapping these teeth with mirror handle, this technique may induce pain in the area of inflammation from periodontal diseases or periapical abscess.

Percussion Test



Vertical percussion



Horizontal percussion

■ 4- Auscultation:

- Is the act or process of **listening** for sounds within the body. e.g. Auscultation for the clicking in the **Temporomandibular Joint** (T.M.J.) and in some **arteriovenous malformation** to listening to bruiting of blood .
- Auscultation technique is rarely used in Dental practice ,but OMF surgeon may apply auscultation for many conditions e.g . - blood pressure .
 - bowel sound .
 - wheezing (chesty).

THE CLINICAL EXAMINATION -: Includes mainly:

1-General examination .

2 -Extra oral examination . (head & neck ex).

3-Intra oral examination.

1-general examination :- the dentist must be prepared to interpret the more common and significant physical changes we should consider the following aspects: **The vital signs**.....Temp,BP,Resp rate,Pulse rate.

Patient's Posture ,Gait, built ,general status of mind, calm quite, restlessness, Facial Form, Nutrition Status, Body Movements , Skin, Hair, symmetry of face, Weight , cyanosis , anemia signs etc .

2- Extra oral Examination

OBJECTIVES:-

- 1-To evaluate **any general abnormalities** particularly in the head and neck region.
- 2-To look for **any signs and symptoms** on the patient that may affect the diagnosis and treatment.

Extra oral examination in general include ex of the followings :-

A. Temporomandibular joint Examination

B. Lymph Nodes.

C. Salivary Glands.

D. Bones of the Skull.

E. Maxillary Sinus.

F. Neck Exam. For - thyroid gland enlargement .

- lymph nodes .

- any swelling.

H. Muscle of mastication - masseter, temporalis ,medial & lateral ptergoid .

g.-eye examination .

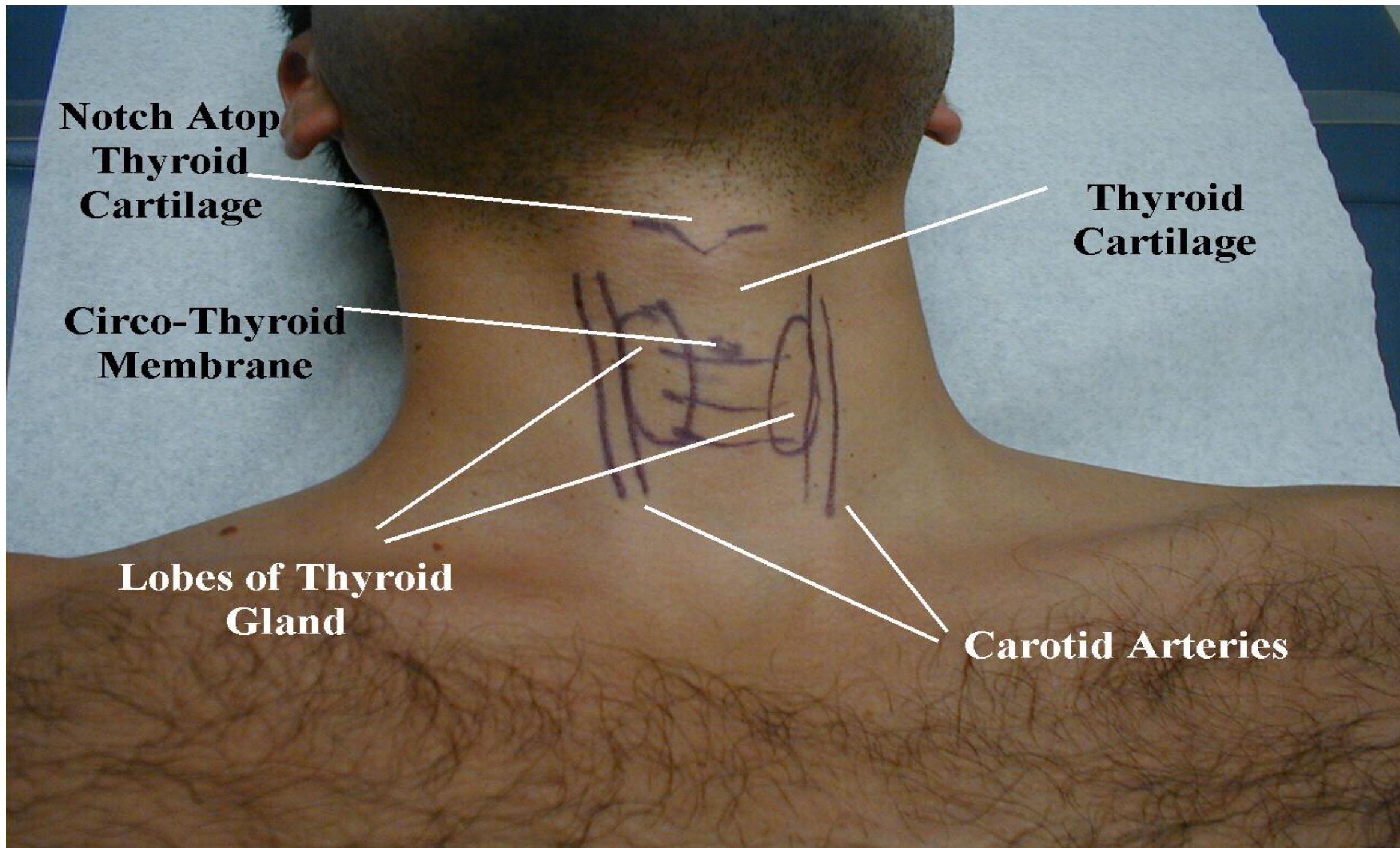
**Notch Atop
Thyroid
Cartilage**

**Thyroid
Cartilage**

**Circo-Thyroid
Membrane**

**Lobes of Thyroid
Gland**

Carotid Arteries







Why we examine the (TMJ):

1- to see if there is **a limitation in mouth opening** (ankylosis - trismus - arthritis).

Normal opening is 35-45 mm or 3-4 fingers. Limitation in opening of the mouth leads to decreasing the accessibility to the operative field which may interfere with our surgical procedure or even the examination of the oral cavity and teeth.

2- TMJ may be the **source of orofacial pain**, so it is necessary to ascertain that the complaints of the patient is related to TMJ problems.

3- to avoid the **overlapping in the diagnosis** (misdiagnosis) of orofacial and dental (from teeth) pain.

TMJ should be *examined for:*

- **pain** on palpation, on opening and on closing.
- **clicking**.
- **crepitus or popping**.
- **deviation of occlusion** from the mid-line.

TEMPRO MANDIBULAR JOINT EXAMINATION



Auscultation



Lateral Palpation of TMJ



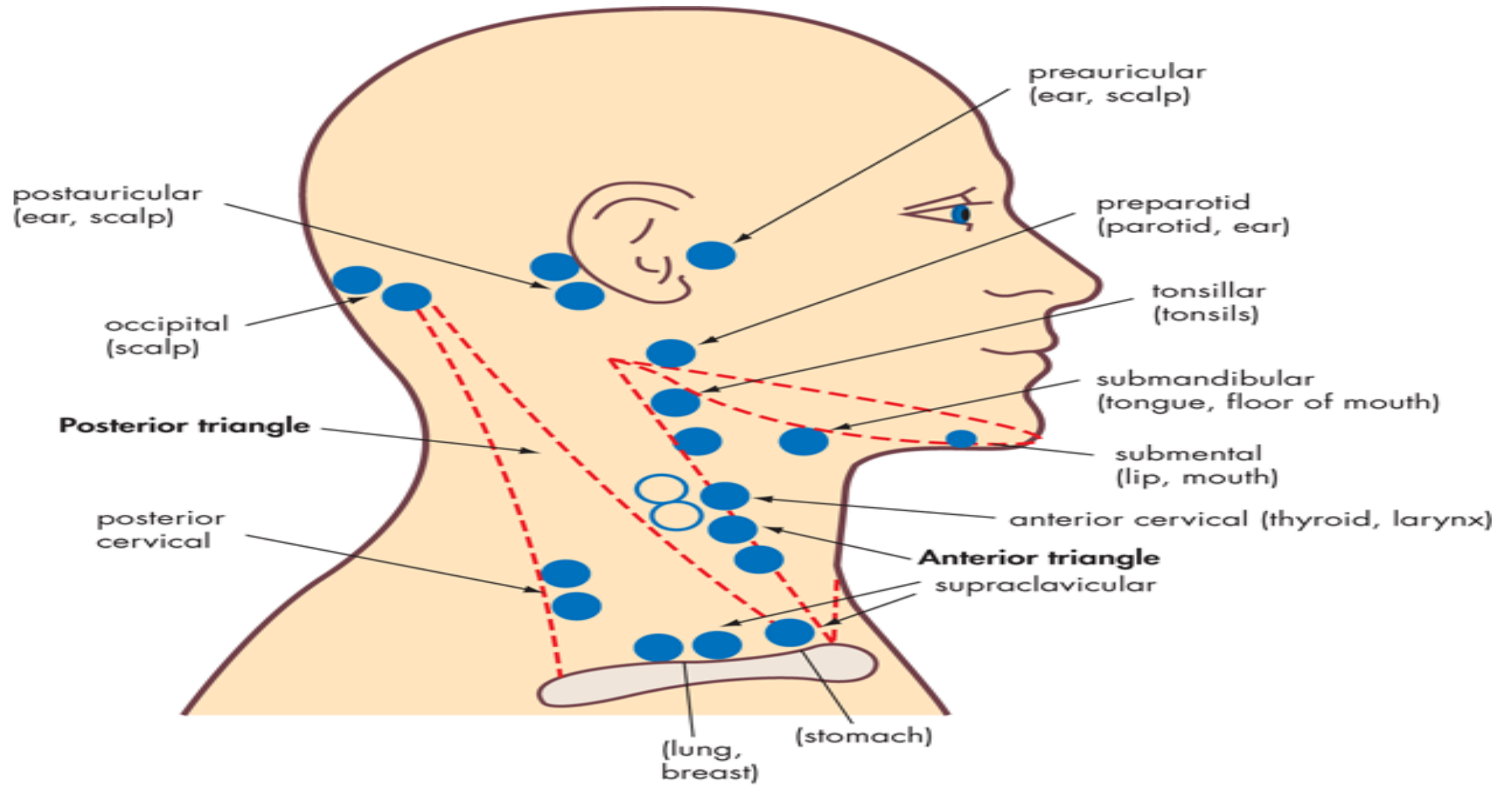
Posterior palpation of TMJ

➤ ***Lymph node examination :***



-
General information's :-

- A **lymph node** is an oval-shaped organ of the lymphatic system, distributed widely throughout the body and linked by lymphatic vessels. Lymph nodes are major sites of B, T, and other immune cells.
- Lymph nodes are important for the proper functioning of the **immune system**, acting as filters for foreign particles and cancer cells.
- Human have approximately **600--800** LN in the body-**300** in head &neck .
- examples of cervicofacial LN :-submental,submandibular ,preauricular,upper jugular supraclavicular etc



Source: John Murtagh, Jill Rosenblatt: *John Murtagh's General Practice, 6e*: www.murtagh.mhmedical.com
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Neck Mass

Swollen
Lymph Node





➤ ***Lymphadenopathy*** :-is a disease process which involves lymph nodes that are ***abnormal in number, consistency and size***. It may **be due to** :-

- infections .

-autoimmune diseases .

- cancers .

- idiopathic .

● normally lymph nodes are ***not palpable*** .

● enlarged L N called ***palpable LN***.

● Palpable ,painful (tender) LN on palpation called ***lymphadenitis***

➤ ***Paranasal sinuses examination :-***



Extraoral and intraoral examination of maxillary & frontal sinus:



-

The clinical importance of this examination .Because of the intimate relation between max sinus and the oral cavity, special concern given to the thorough and detailed knowledge of the surgical anatomy and pathology of that sinus to dentist and oral surgeon .



clinical examination by ***inspection***-middle third of the face should be inspected for the presence of ***asymmetry ,deformity ,swelling ,erythema ,ecchymosis or hematoma .extra oral palpation*** of the facial wall of the sinus above the premolar region and

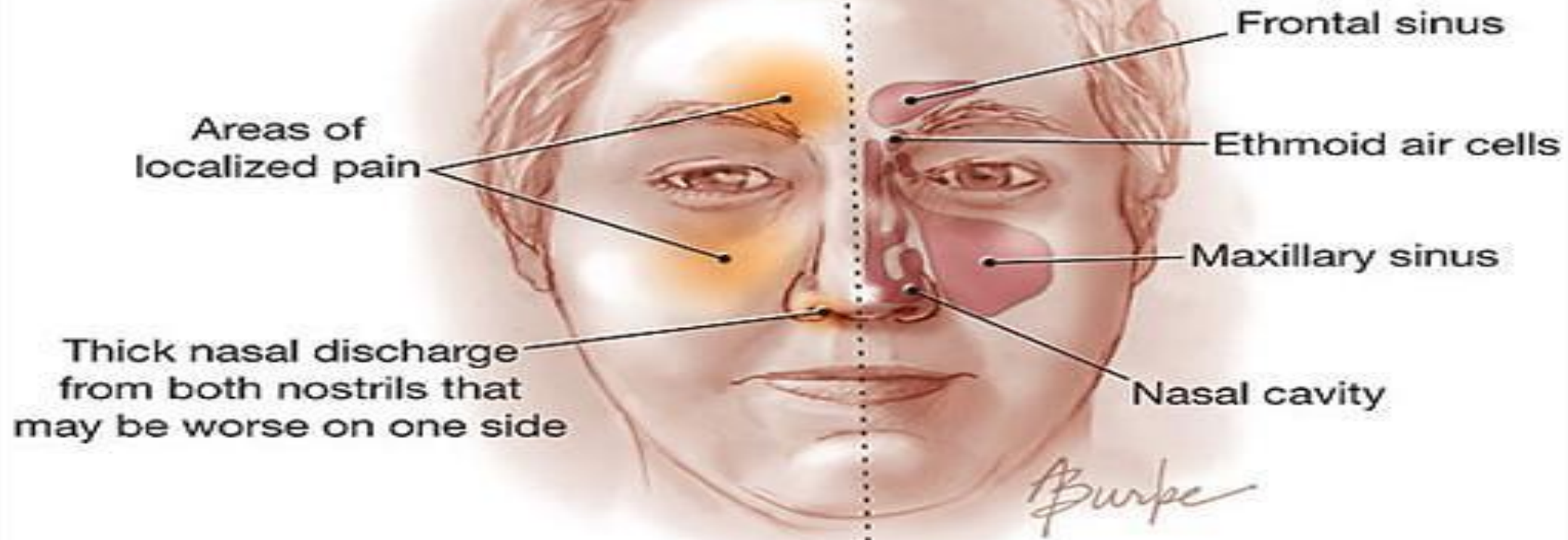


intraoral examination should be performed for ***tenderness,parasthesia of*** upper premolar and molar regions.inaddition to that examination by transillumination by lighth to ***indicate the presence of air in the sinus while failure of transillumination may indicate ,pus ,fluid ,solid lesion or mucosal thickening*** .



Symptoms and Signs of Acute (Bacterial) Sinusitis

Sinus Anatomy



Rare but important symptoms may include severe headaches and redness, tenderness, or swelling in or around the eyebrow or eye.

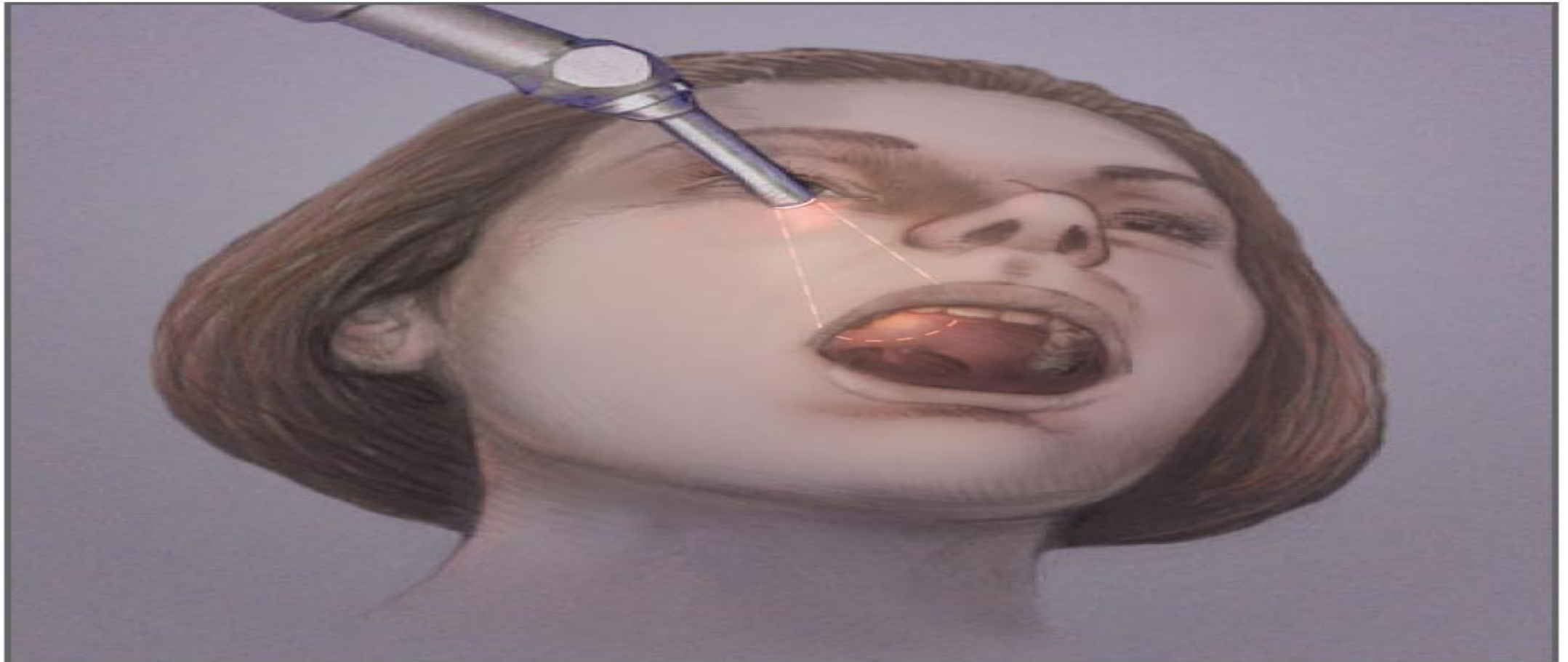


Figure 1. Transillumination of the Maxillary Sinus.

A light source is placed along the infraorbital rim, and the hard palate is inspected.

Piccirillo Jay F. Clinical practice. Acute bacterial sinusitis. The New England journal of medicine 2004 vol:351 iss:9 pg:902 -10

- ***Eye examination*** :- Eye should be also examined by checking color of sclera & conjunctiva ,
- yellow discoloration may indicate hepatitis or obstructive jaundice ,
- red color may indicate allergy or infection,or blood abnormality like polycythemia .

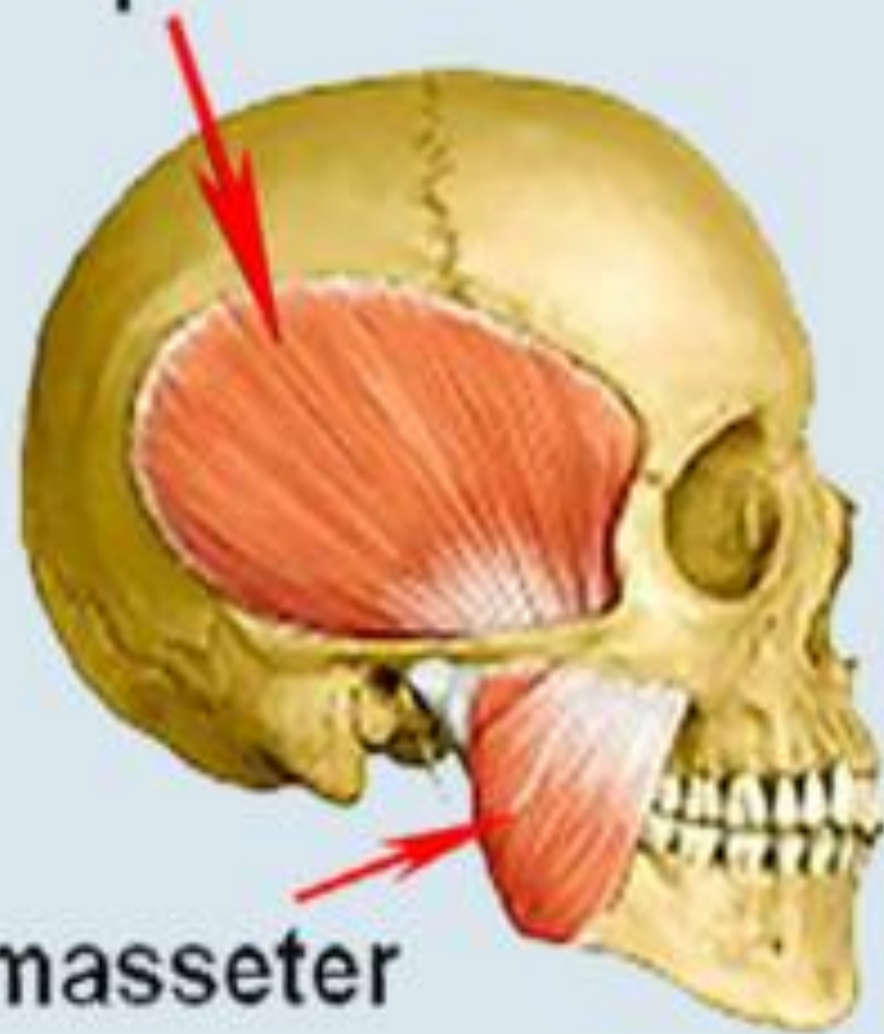
Hep A Patient with Jaundice





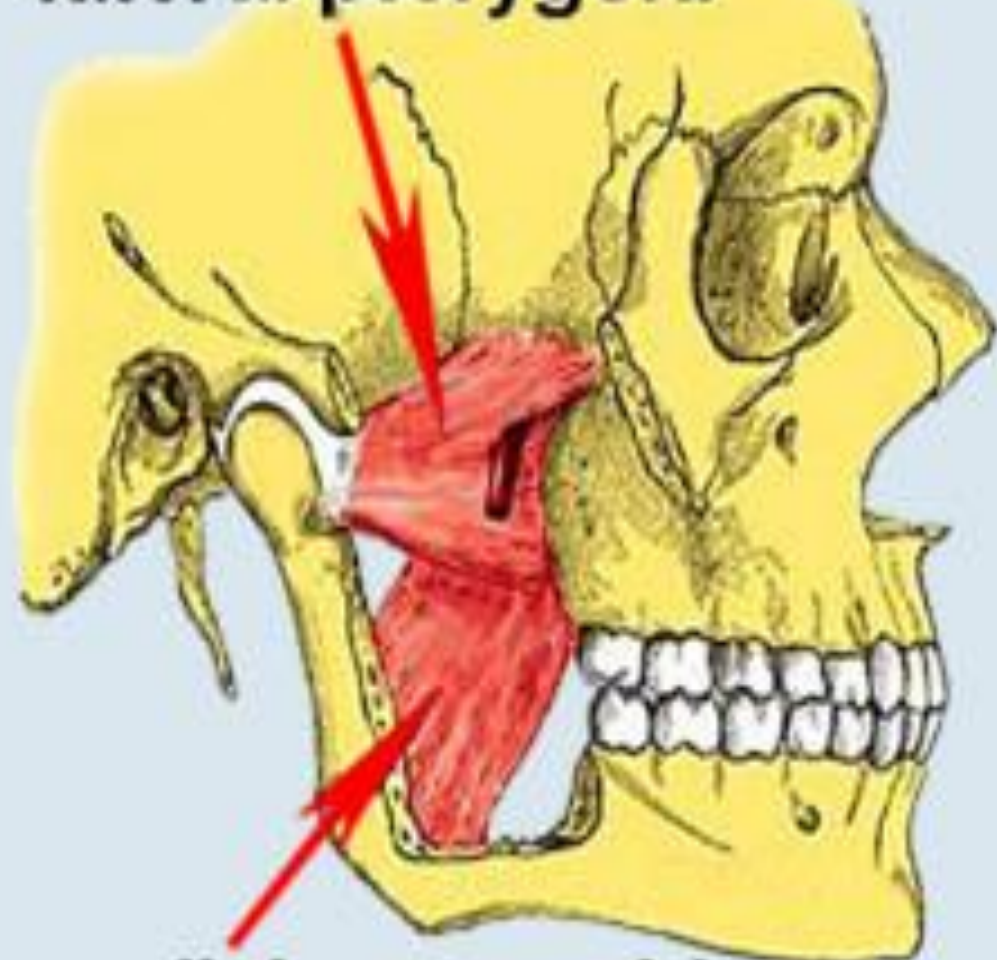


temporalis



masseter

lateral pterygoid



medial pterygoid

Medial Pterygoid



Clinical examination



Fig. 6-25. Palpation of the masseter muscle. A, Palpation beneath the zygomatic arch origin. B, Palpation of the angle of the mandible insertion. C, Palpation of the body.

- **Masseter:** Fingers are placed over the patients Zygomatic arch, Angle of mandible and body to feel the muscle.

Palpation of Lateral pterygoid

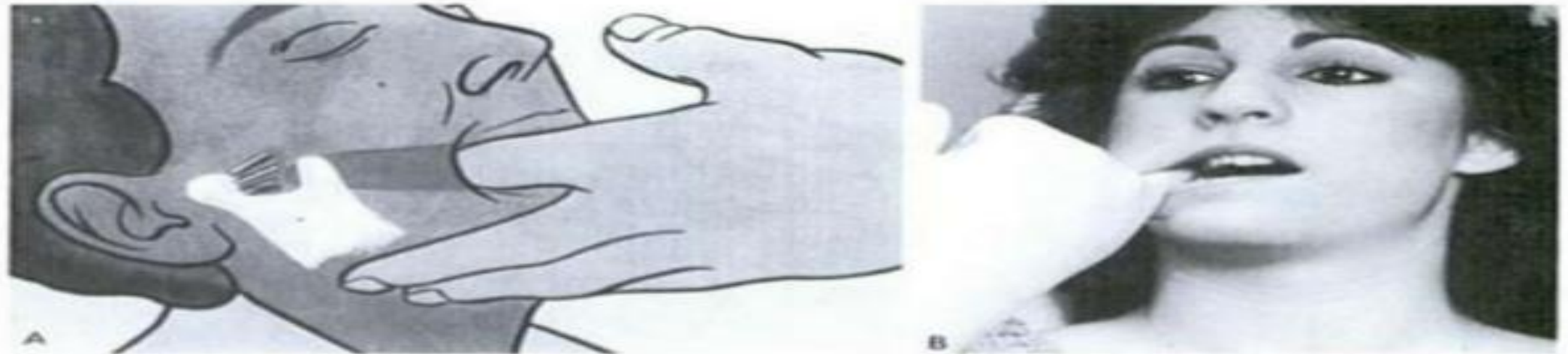


Fig. 6-27. A and B, Palpation of the external pterygoid muscle using the index or little fingers.

- **Lateral pterygoid:**
- The little finger is inserted facial to the maxillary teeth and around distal to the pterygomaxillary, [or] hamular notch, to palpate the muscle.

Identify the Examination Procedure

- Palpation of Lateral Pterygoid muscle insertion



Intra oral Examination (IOE) :-

Objectives:

1. To detect soft tissue abnormalities.
2. To evaluate the status of teeth and other hard tissues.

IOE include examination of :-

- 1- **soft tissue** abnormalities .
 - 2- To evaluate the of **teeth**
 - 3- **bone** (hard) supporting tissue.
- 1- **Soft tissue ex in general include-** any change in color .
 - change in size ,shape ,contour .
 - ulceration ,fissuring.
 - growth & swelling .
 - pigmentation .
 - discharging sinus & infections.
 - bleeding , ecchymosis ,petechia.
 - texture, dryness ,fixation

Intraoral examination consists of evaluation of the following areas in a systematic way:

Lips, Labial & Buccal Mucosa, Mucobuccal folds, floor of the mouth, Tongue surfaces, Hard & Soft Palate, Oropharynx,

Muscles of mastication (Lateral & Medial Pterygoid m, masseter, temporalis m), Teeth, Gingiva, Orifice of the ducts of the Parotid and Submandibular Glands

Intra oral examination should begin with the observation of the mouth for extent of **opening and deviation**.

The extent of the opening usually described in terms of the width of the patient's fingers e.g. 2, 3, or 4 finger opening then we look for the **oral Hygiene** whether it is *good, fair, poor, or very poor*.

Hard
Palate

Soft
Palate

Tonsil

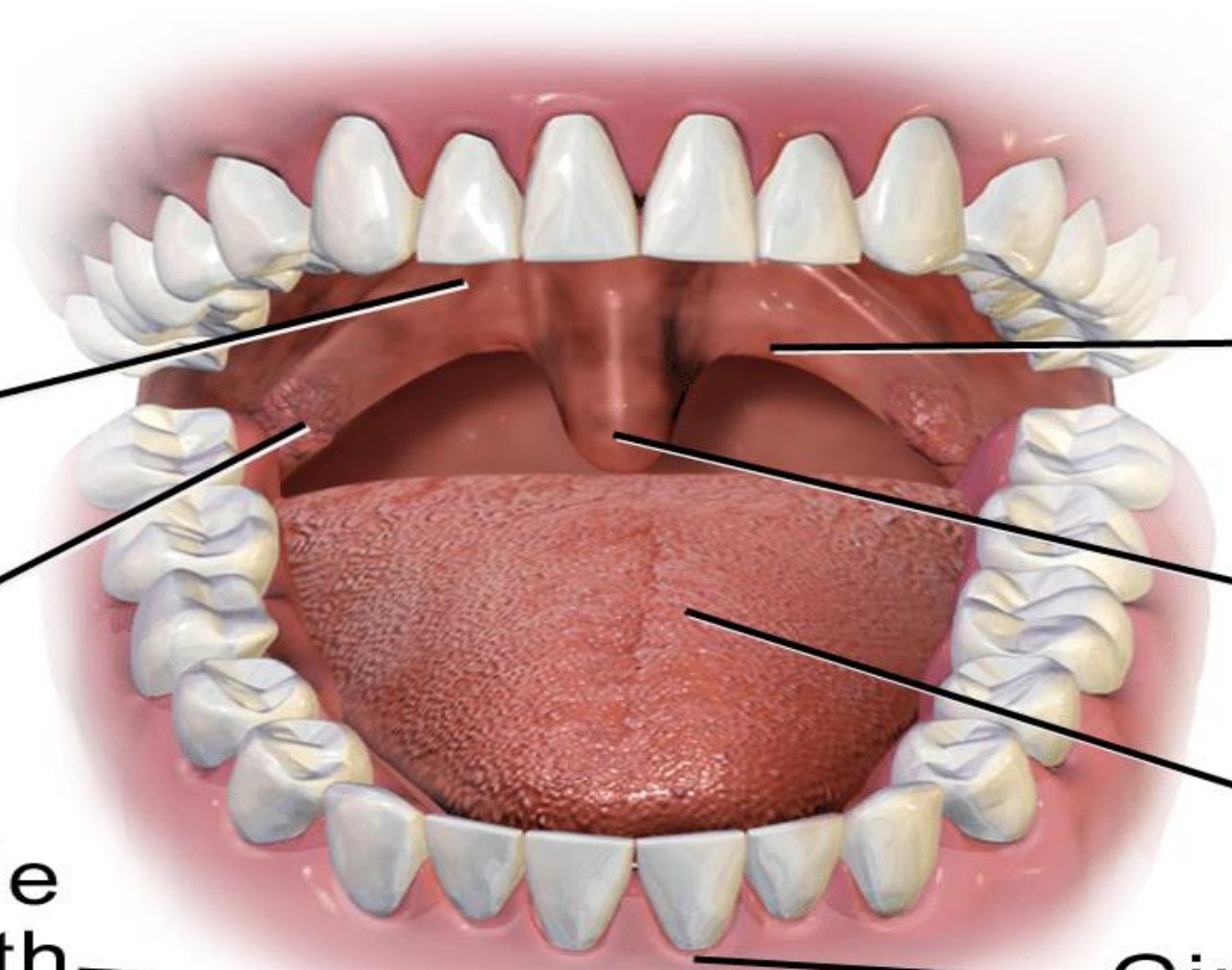
Uvula

Tongue

Vestibule
of Mouth

Gingiva

Mouth





Deviation on Opening



Observe the opening pattern for deviation . The mandible often deviates towards the affected side during opening because of muscle spasm or mechanical locking by a displaced meniscus

We use the **mouth mirror** to reflect or retract the cheek & the lips with good light, to evaluate the condition of the vestibules, floor of the mouth, Avoid any overlooking of these hidden areas, also the opening of the **salivary glands ducts** *examined for enlargement, redness, & discharge.*

The ventral, lateral, dorsal, aspects of the **tongue** should be examined for the presence or absence of papillae, fissuring, ulceration, growth, indurations, limitation in excursion, & lateral movements.

Hard & soft palates are examined for swelling, ulcers, sinuses, & perforation.

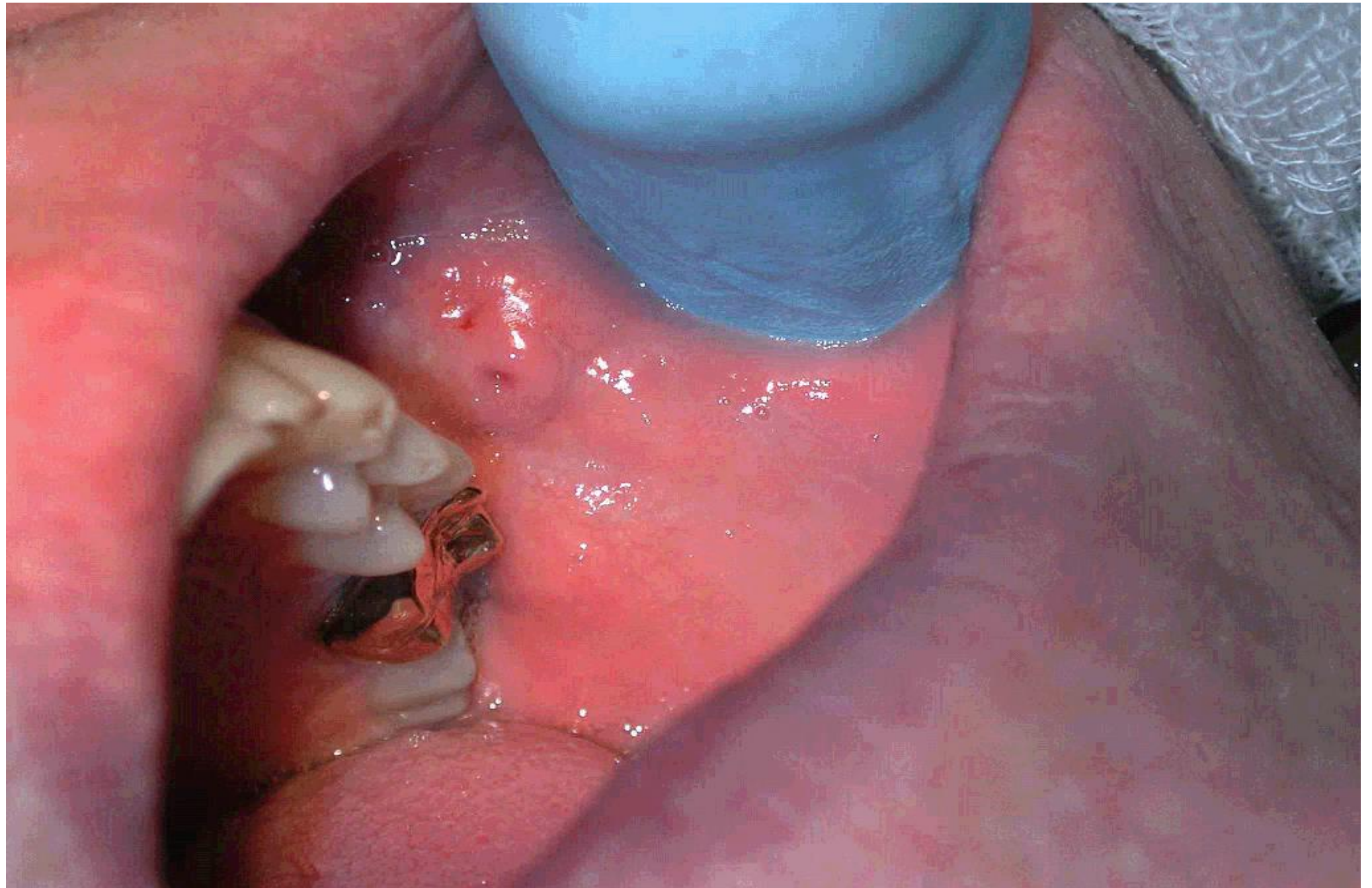
Mucosal changes may be observed in association with Leukoplakia, Tobacco irritation, Pigmentation.

The **gingiva** examined for the health, stippling, the color & the size of interdental papillae, contour, expansion, any cause of food impaction, the presence of **calculus**, sinuses or retained roots, pockets... etc.









Gingivitis

Calculus





2-Teeth Examination:

The presence, absence, appearance, mobility, retained roots, retained deciduous teeth, **Malposed** teeth (the mobility of teeth is classified as nil, marked or gross), Attrition (Exposed dentin), Exposed roots, **Carious Lesions**, **Vitality** tests (hot & cold application, Pulp tester, ... etc.).

The teeth might be **percussed** or probed with our instrument to see any tenderness or sensitivity of the teeth.

Any **edentulous area** should be dried with a piece of cotton and examined for the presence of retained roots or discharging sinuses.

Occlusion should be examined in closed and rest positions, the presence of open bite, type of occlusion (Neutro-occlusion class I, disto-occlusion class II, or mesio-occlusion class III).





Supernumerary Teeth

- ***Supplemental Teeth***

- Normal size & shape

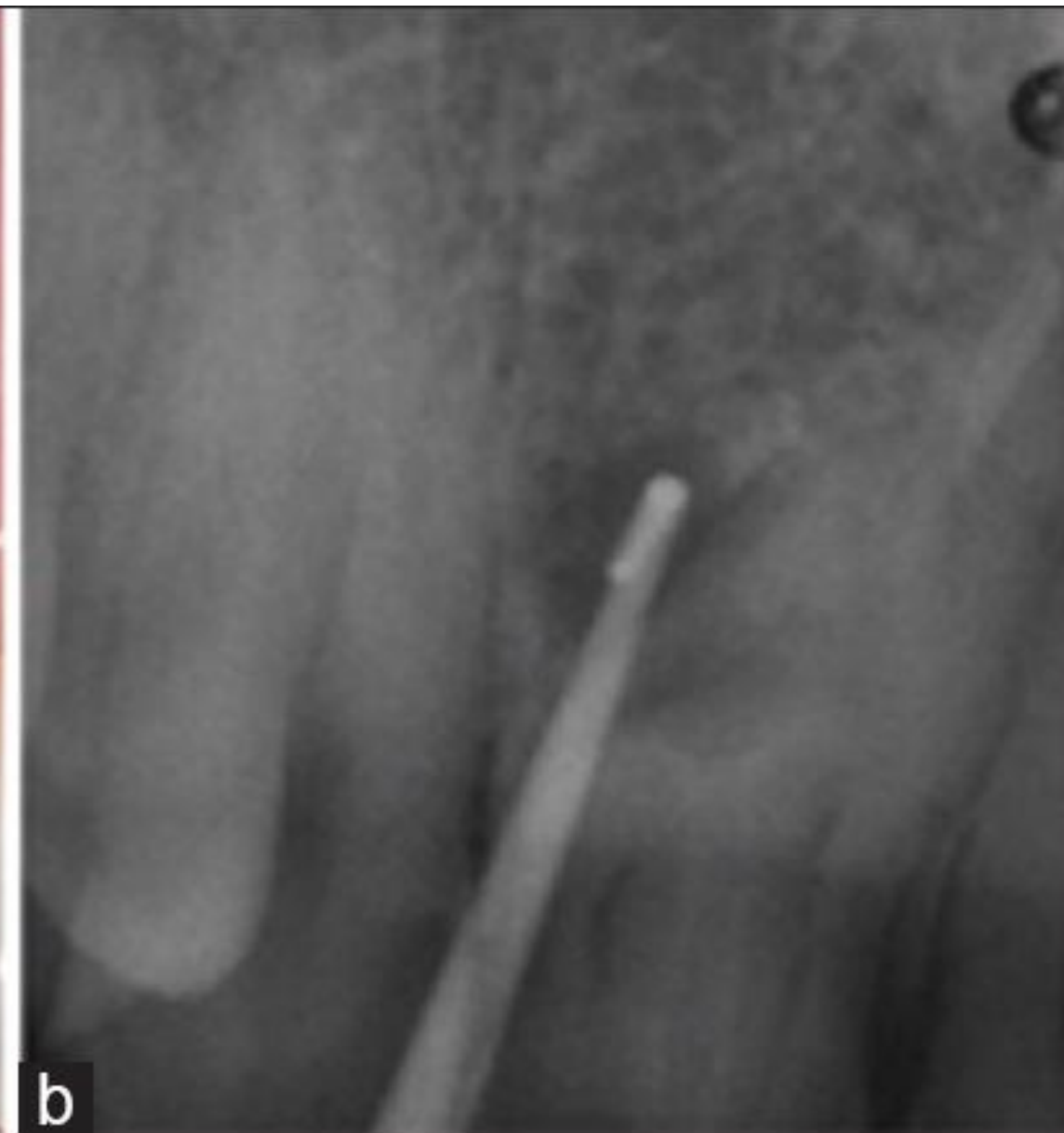
- ***Rudimentary Teeth***

- Abnormal Size & Shape









3- supporting bone(jaws bone):-

bones should be examined for-- *swelling, abnormal expansion , the presence of deformity, sharp projected bone , exposed bone .*

Torus palatinus, Torus mandibularis.

Investigations:

Sometimes, the clinician determines that additional tests are needed to clarify some aspects of the diagnosis. Such tests include

- radiographic examination,
- Biopsy (Histological Study),
- Cytology,
- Aspiration,
- Clinical Laboratory studies.

OBJECTIVES :-

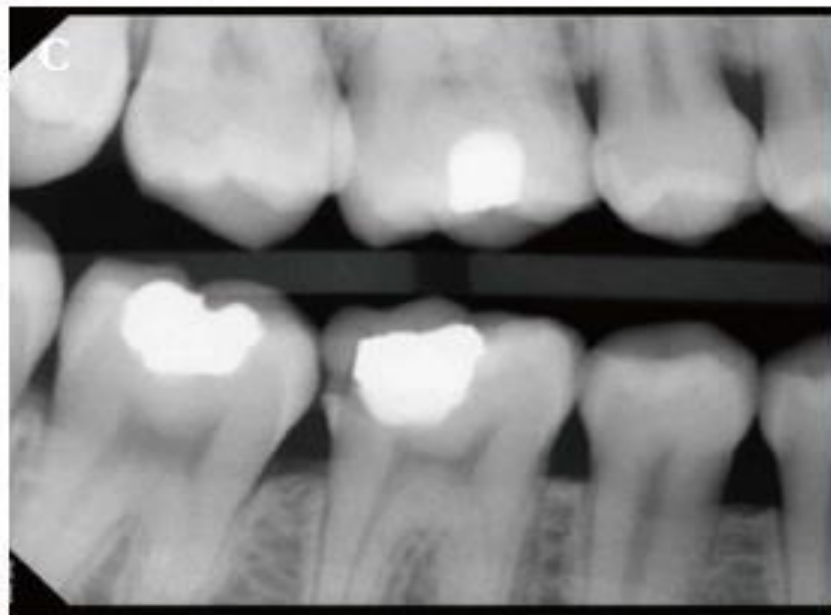
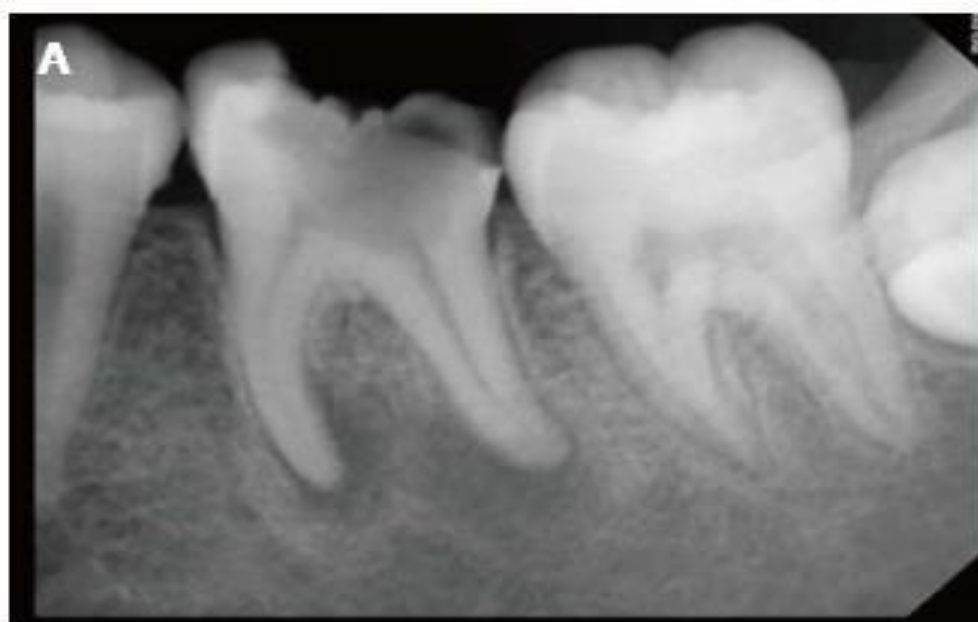
- ✓ ***- It provides information about hard & soft tissues*** that are hidden from eye which aid in diagnosis .
- ✓ ***- to evaluate the progress of the disease .***
- ✓ ***-for postoperative and comparative evaluation .***
- ✓ ***-in surgical reconstructive planning .***

➤ **Radiographic examination:**

Is one of the important methods of investigation and examination used in Oral Surgery practice .

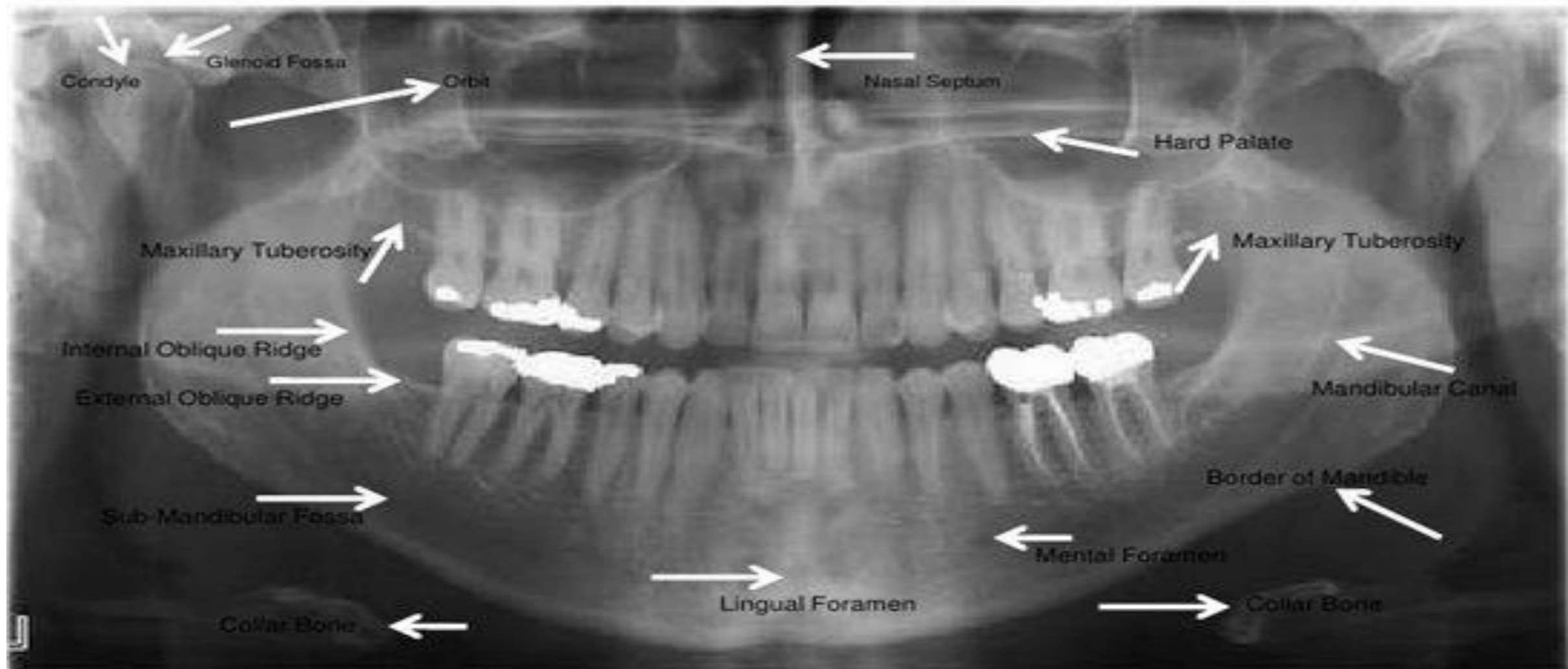
Examples of radiographs used in oral and maxillofacial surgery:-

Periapical, occlusal, & extra oral views like lateral oblique of the mandible radiograph, CT ,CBCT Scan, MRI.



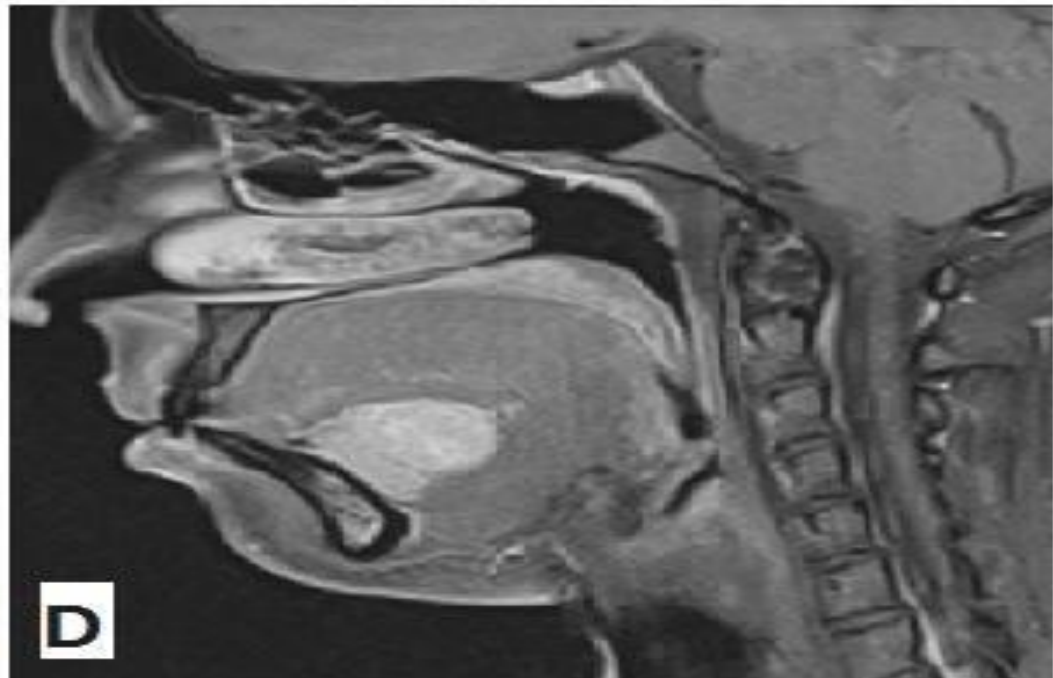
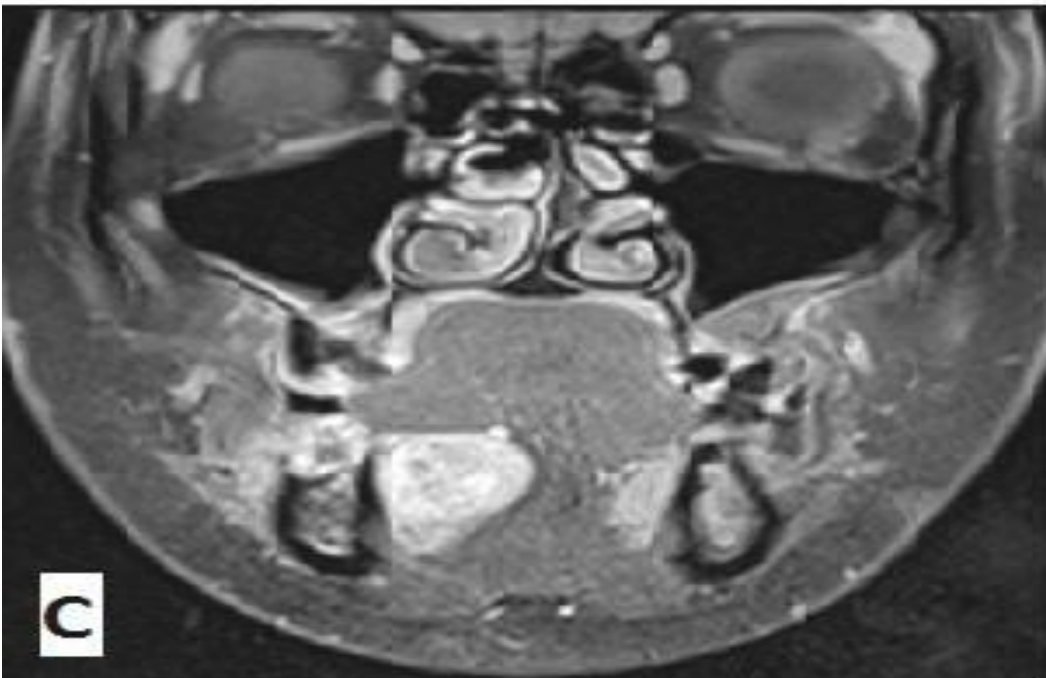
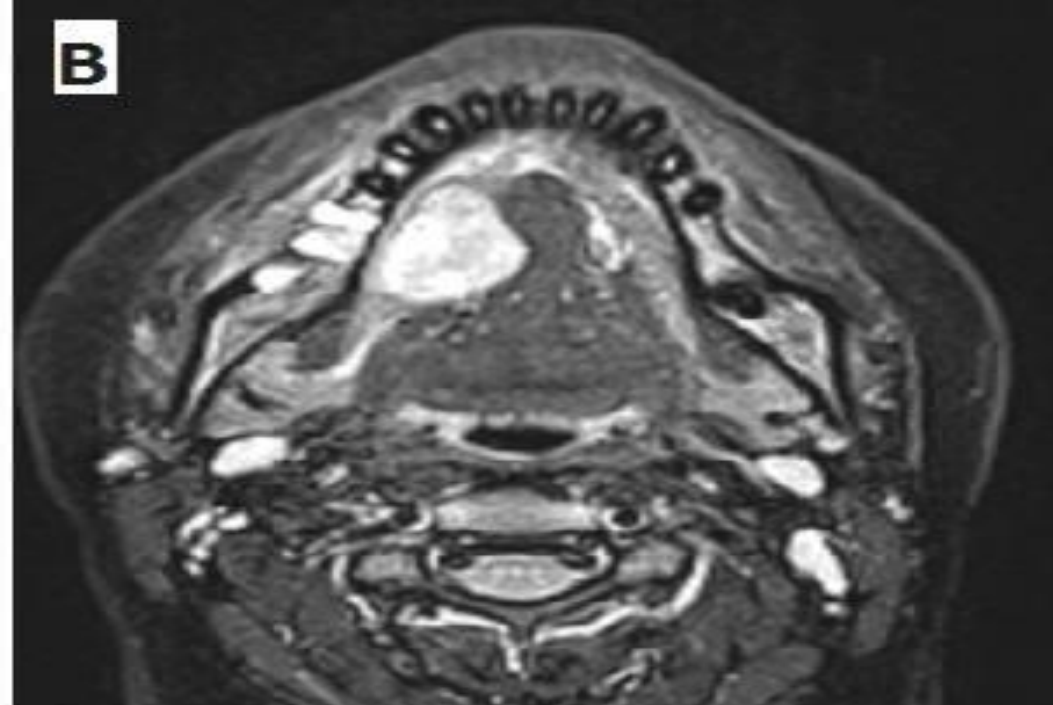
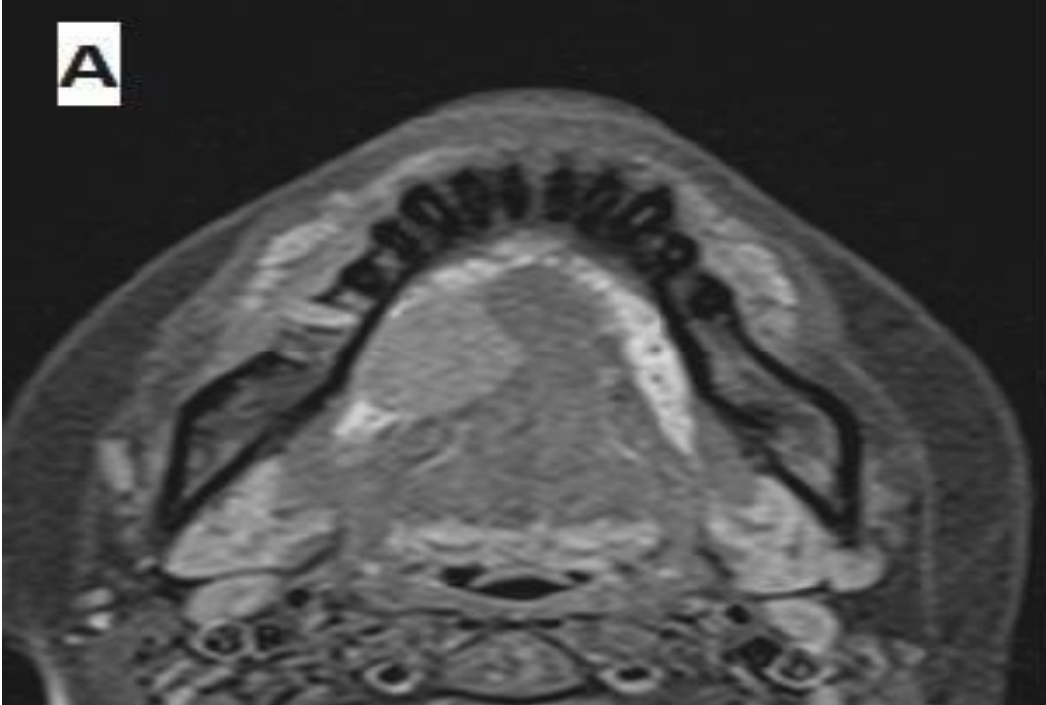
Normal Anatomy

Normal Anatomy on the Panoramic Radiograph









➤ **Vitality tests:**



1. Hot application (e.g. Hot Instrument).
2. Cold application (e.g. Ethyl Chloride Application).
3. Electrical Pulp Tester.



These tests are used *to check the vitality or response of the teeth to give an idea about the condition of the pulp if it is vital or not (vital or non vital) .*







PULP TESTER

High
Mid
Low
DENJOY

88

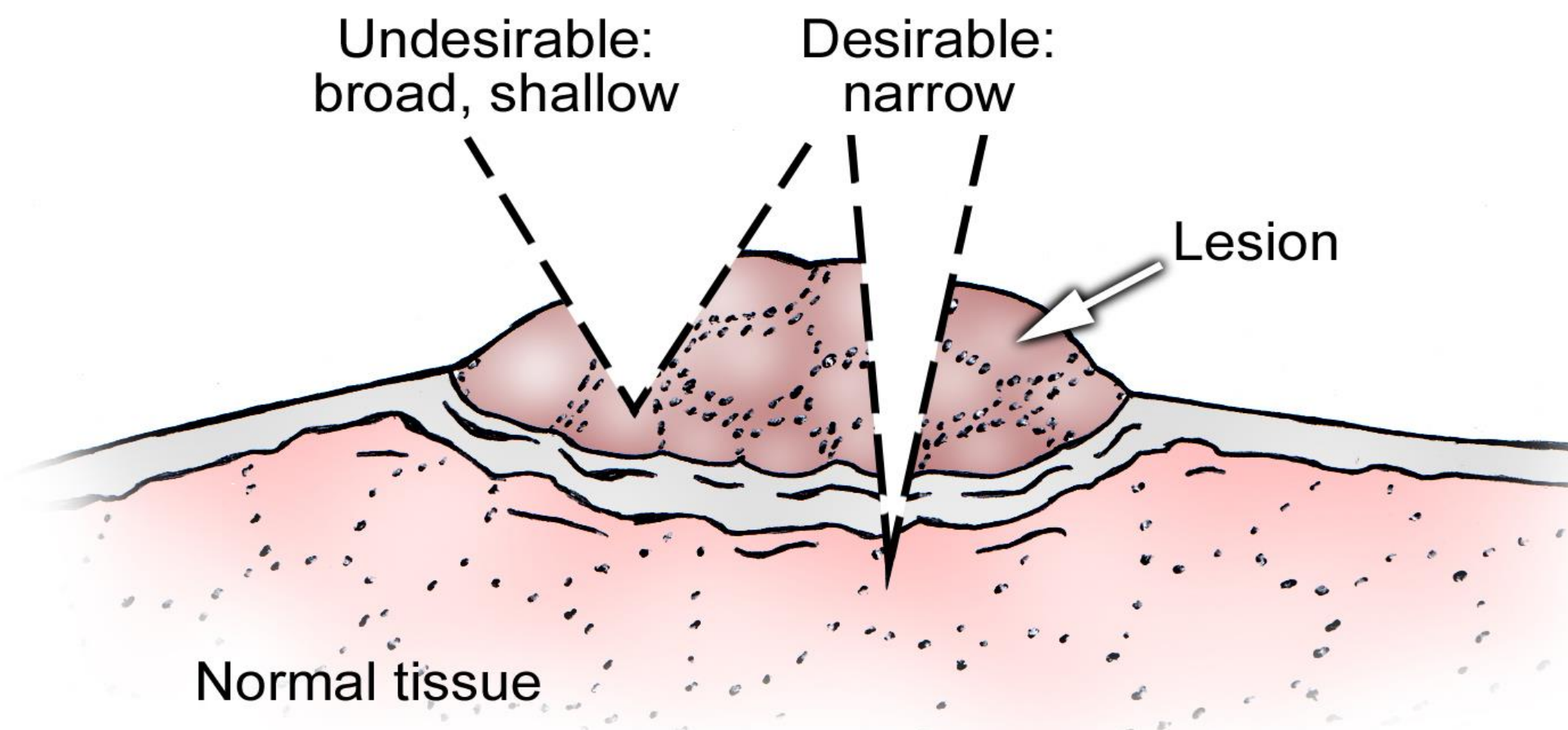
➤ **Biopsy:**

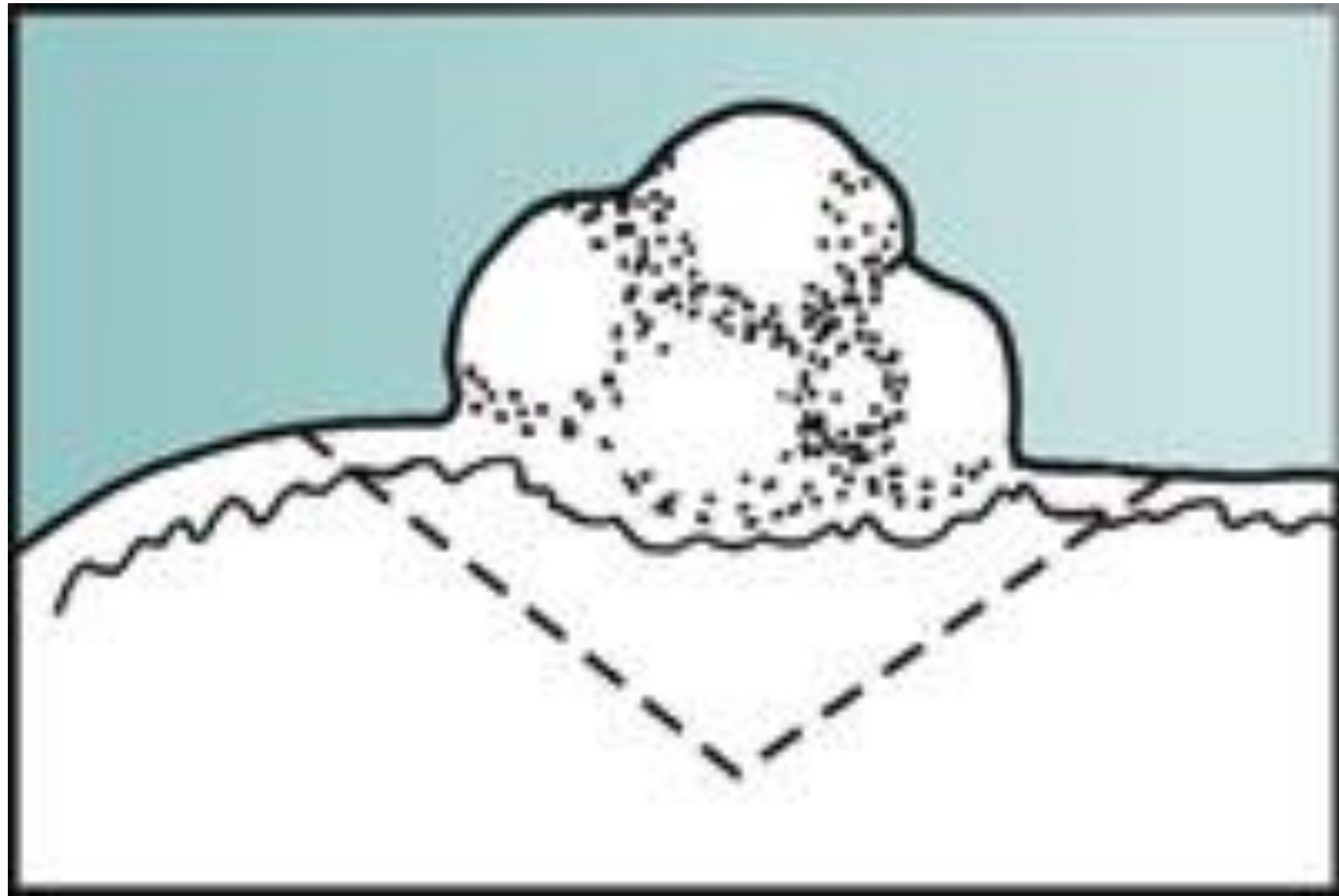
Biopsy is **the removal of tissue for examination**, microscopic analysis, chemical analysis, and bacterial analysis or a combination of all four. The term is used most frequently to indicate removal of tissue from a living subject for analysis

Small pieces of tissue (sample) taken from the lesion of a living organism and submitted for microscopic examination (Histopathology examination).

Biopsy could be **incisional or Excisional, Exfoliative Cytology ,fine-needle aspiration, punch biopsy.**

It is used to do a definite diagnosis or to confirm the suggested diagnosis of the lesion. and for the determination of the more definitive treatment of the lesion.









➤ **Aspiration:**

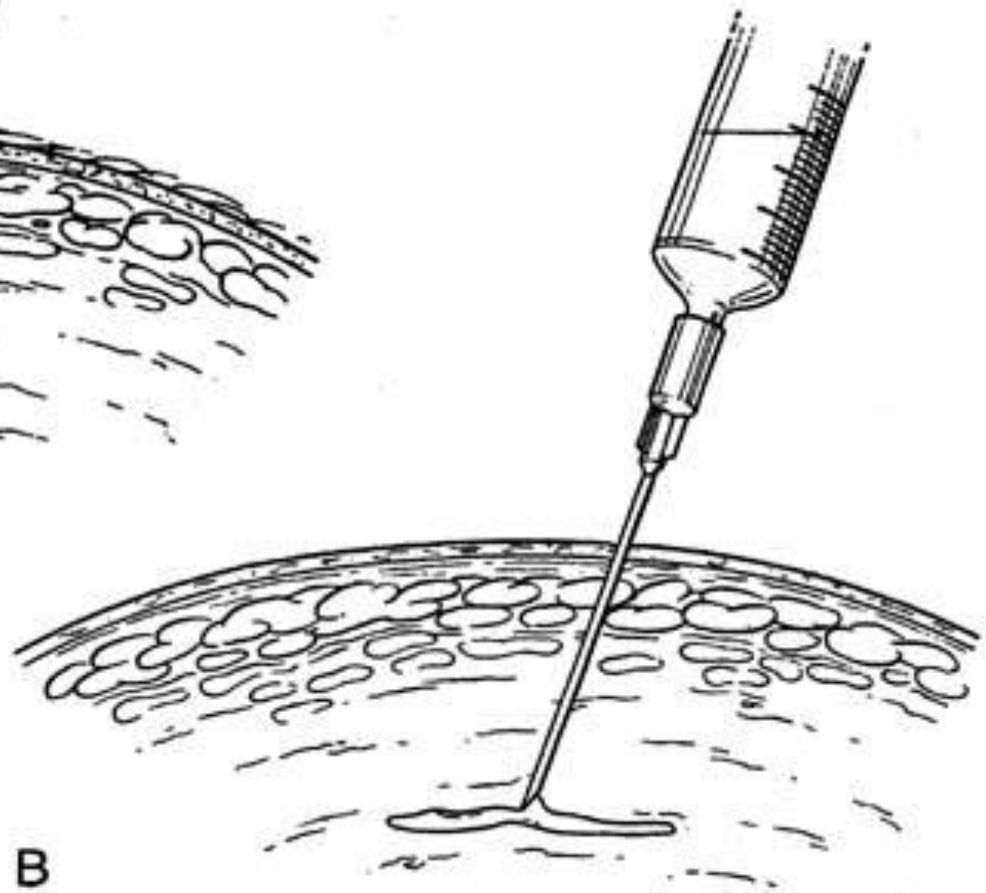
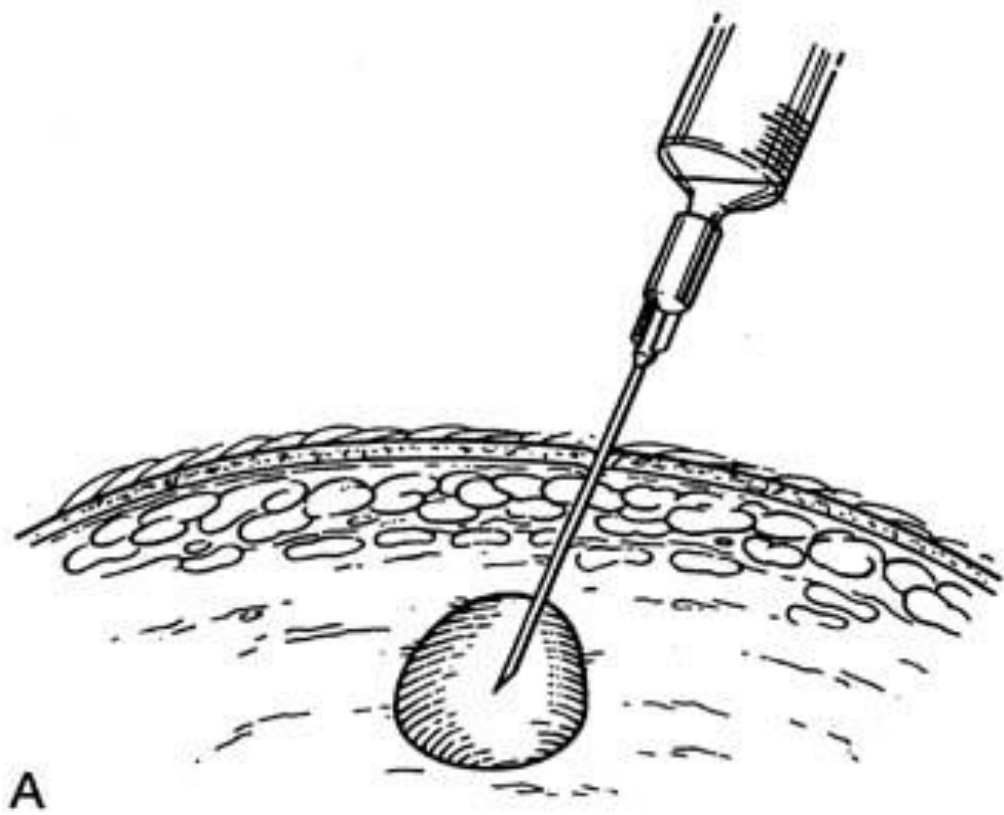
Aspiration biopsy is the use of **a needle & syringe** to penetrate a lesion for aspiration of its contents for purpose of analysis.

➤ • Applicable to both intra osseous as well as soft tissue masses.

➤ **It is the withdrawal of fluid from the lesion & may aid in the diagnosis .**

➤ For example, aspiration of pus indicates an inflammatory process like abscess or an infected cyst. Aspiration of **yellow fluid** may indicate cystic lesion, aspiration of **blood** may indicate Vascular lesion like Hemangioma ... etc.

Aspiration is one of the methods used to aspirate fluid from a swelling for evaluation of the nature of that swelling which may assist in diagnosis .Used to rule out &/or differentiate between Fluid filled cavities • Vascular lesions • Hematomas • and **Empty cavities** • Cysts .





➤ **Laboratory tests:**



1. Bacteriological examination.
2. Hematological examination.
3. Urine analysis (GUE).
4. Blood Chemistry & Serological examination.
5. Culture & sensitivity test.

All of these tests or any one of these tests might be ordered to aid as in confirming our diagnosis.

6. Incisional biopsy

So, the collection of all information taken from the **history & clinical examination & accessory information (Special tests)** must be evaluated and analyzed to reach the Final Diagnosis.

➤ **Patient record (medical) record:**

It consists of:

- 1- Case sheet.
- 2- All radiographs.
- 3- All investigation papers.
- 4- Referral papers.



Objectives & Benefits:

1. It assists in the diagnosis of the diseases.
2. For follow up & future checking.
3. For statistical analysis.
4. For studies & education.
5. For Medico-legal purposes.

- **management include**
- - a- *diagnosis* - -----history
----- clinical examination.
-----investigations
- - b-*treatment* -medical
-surgical and others

Al-Rasheed University College/ Dentistry department

Oral surgery clinic- case sheet- ----Signature-----

Student name: ----- grade/group-----

Patient name: ----- sex-----Date-----

Age-----occupation-----address-----

History:-

Chief complaint (CC):------

History of the present illness (HPI) :-----

Past dental history: -----

Medical history (systemic review):-

- General health-----
- Have you ever had any of the following? Yes / No
High blood pressure----- Diabetes----- heart diseases-----
Thyroid problems-----bleeding disorders----- epilepsy-----
Respiratory diseases-----GIT diseases-----liver diseases-----
Kidney diseases-----AIDS/HIV-----Artificial implants-----
Previous hospitalization-----if yes specify-----smoking-----
Do you have allergies? ----- Do you take any drugs? Specify-----
Female patients, are you pregnant? -----

Clinical examination:(inspection, palpation ,percussion ,Auscultation)

1- Extra-oral examination

- a- Head and face (soft tissue and bones) -----

- b- Eye examination-----
- c- TMJ -----
- d- Maxillary sinus -----
- e- Lymph nodes -----

f- Neck examination (lymph nodes, thyroid)-----

g- Others-----

2- Intra-oral examination

a- General oral health (good ,fair ,poor ,very poor)-----

b- Mucosa and bony structures (swelling ,growth, ulceration ,gingival condition ,discoloration ,others)-----

c- Teeth (present ,absent, impacted , unerupted , mobility ,gum recession, bone loss, anomalies)-----

d- Teeth (carious ,retained roots ,fractured ,discolored ,swelling ,discharging sinus)-----

e- **Accused tooth examination** (inspection ,palpation ,percussion, auscultation).

- Periodontal conditions-----

- Pulp conditions-----

- Percussion----- vitality----- associated pathology-----

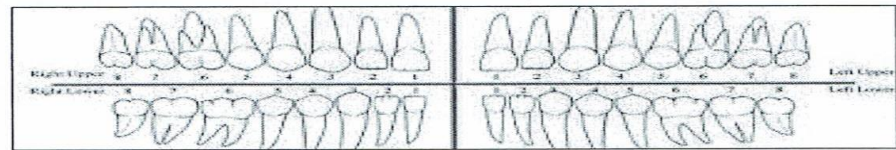
3- Investigations

- Radiographic -----

- Blood and others-----

4- **Diagnosis :-**-----
5- **Starting signature:-**(Name and signature of the supervisor staff)--

6- **Treatment**-----
7- **Name & Signature**-----
8- **Date**-----
9- **Ordinary case** ----- **sectioning**-----**surgical**-----



10- Grade: - A-----B-----C. 11- Difficult -----simple case-----

11- Extraction done by the student alone ----- by supervisor-----
--, both. -----

ملاحظه : تسجل الحالات في السجل الرئيسي في العياده مباشره او بعد ٢٤ ساعه والا تصبح باطله ولا
تحتسب للطالب ويكون الطالب مسؤول عن ذلك.