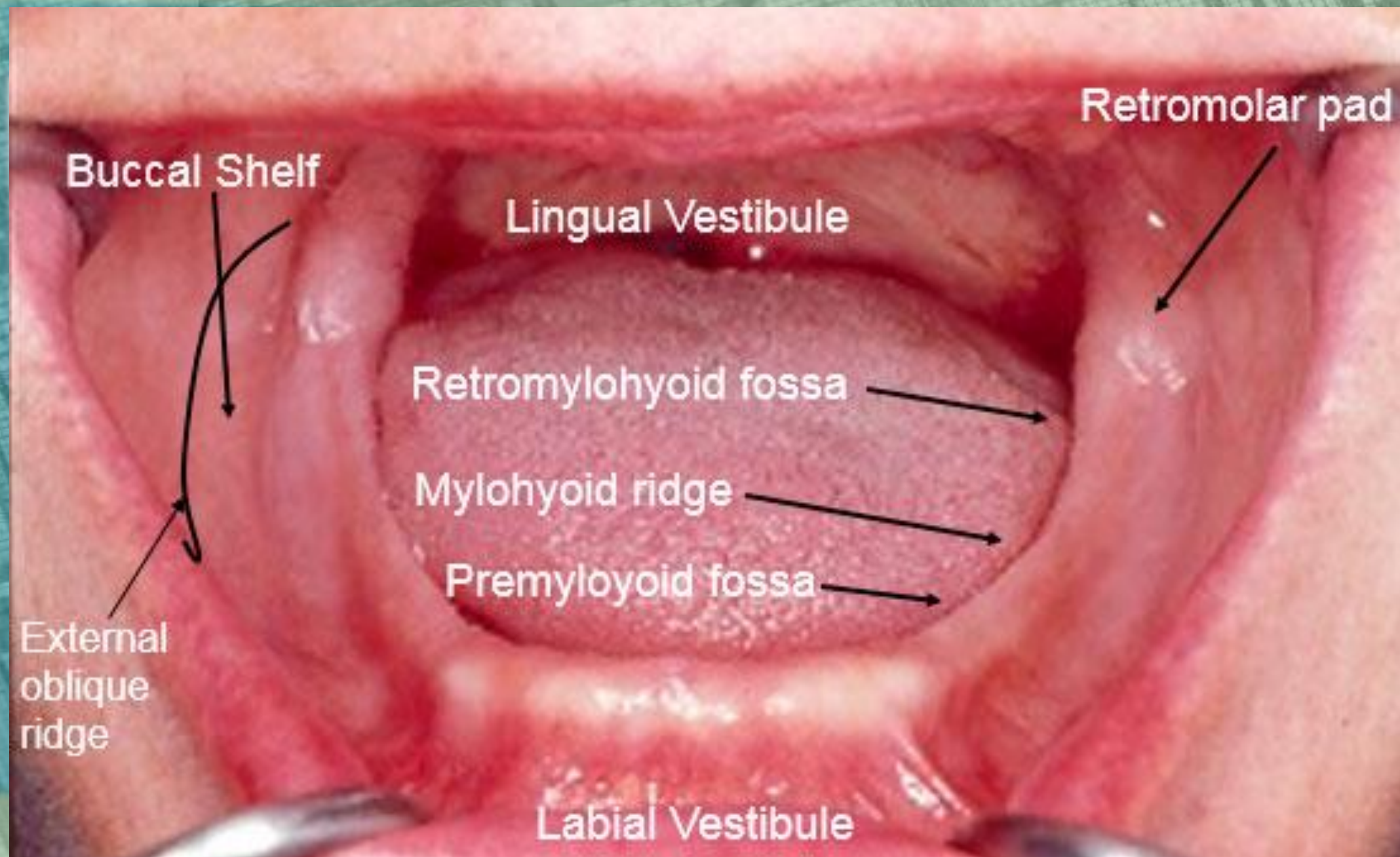


Anatomical Landmarks of Mandible

Dr Hiba Hamid
Demonstrator Prosthodontics

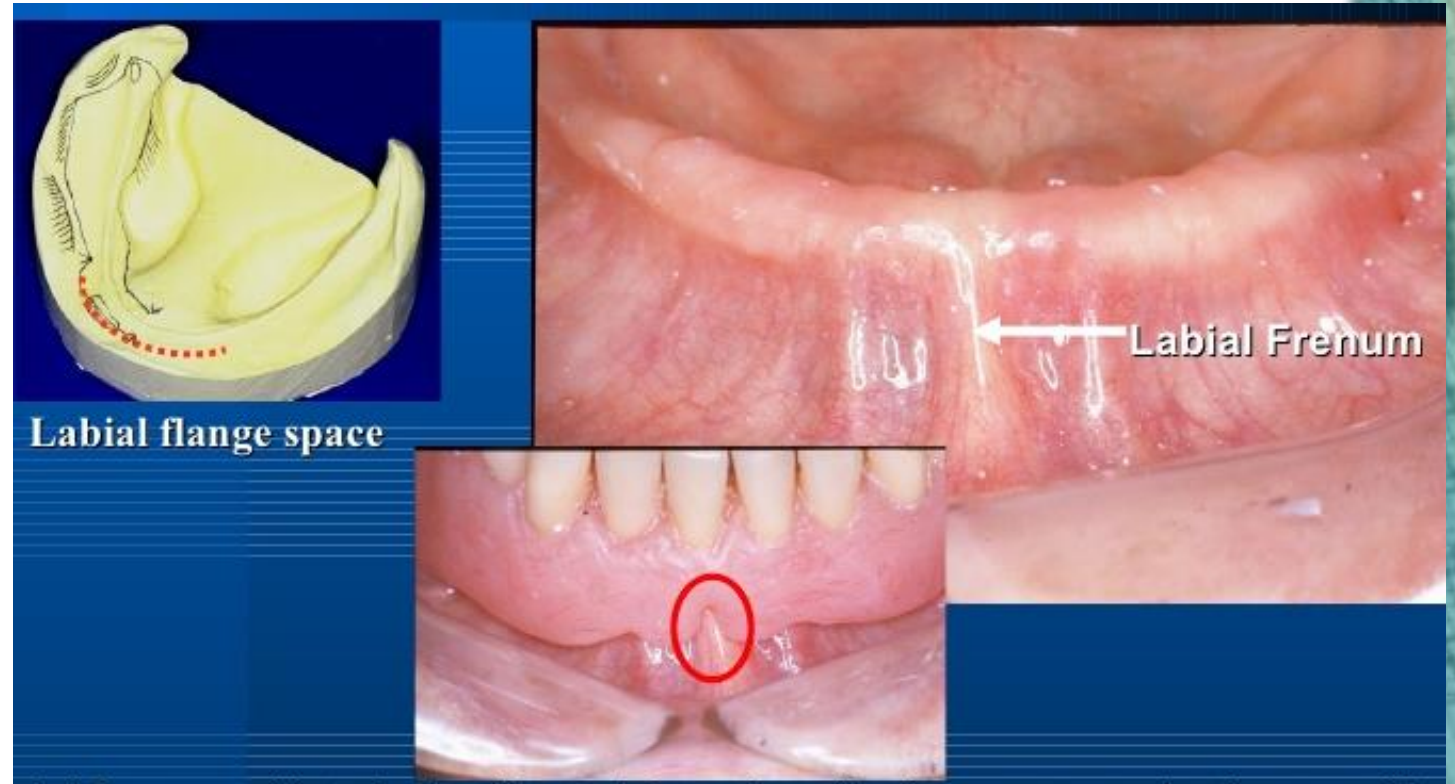


Limiting Structures in Mandible

- Labial frenum
- Labial vestibule
- Buccal frenum
- Buccal vestibule
- Retromolar pad
- Alveololingual sulcus
- Lingual frenum
- Pterygomandibular raphe

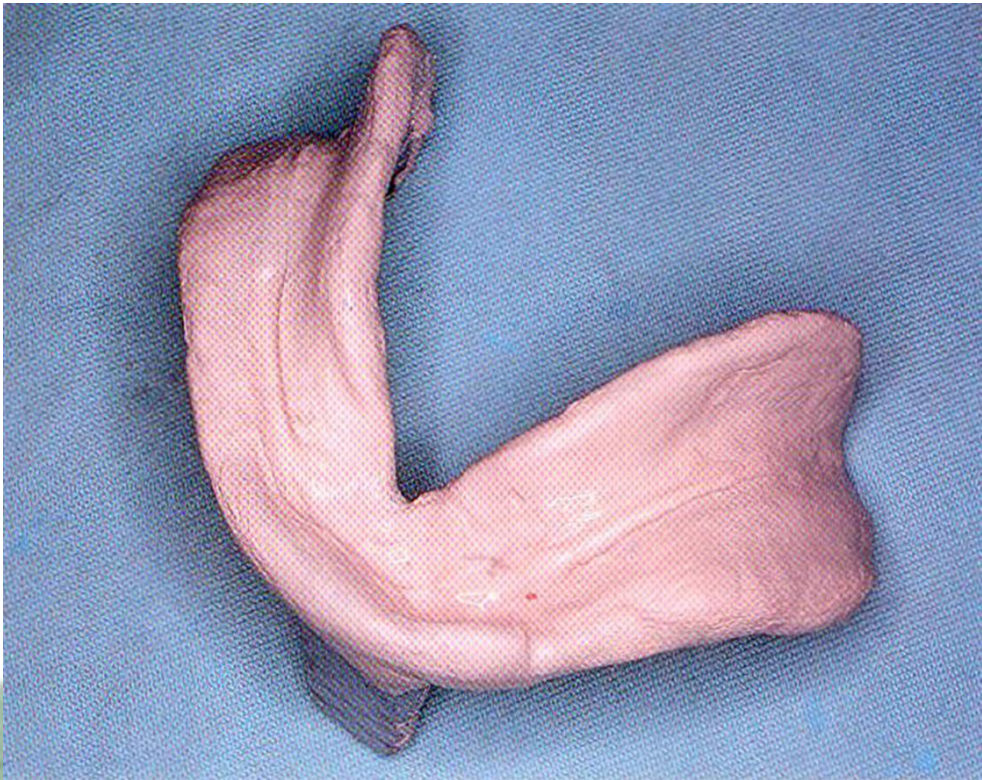
Labial Frenum

- Fibrous band similar to that found in maxilla
- Active frenum containing band of fibrous connective tissue that helps in attachment of orbicularis oris
- On opening wide, sulcus gets narrowed.
- Hence impression will be narrowest in anterior labial region



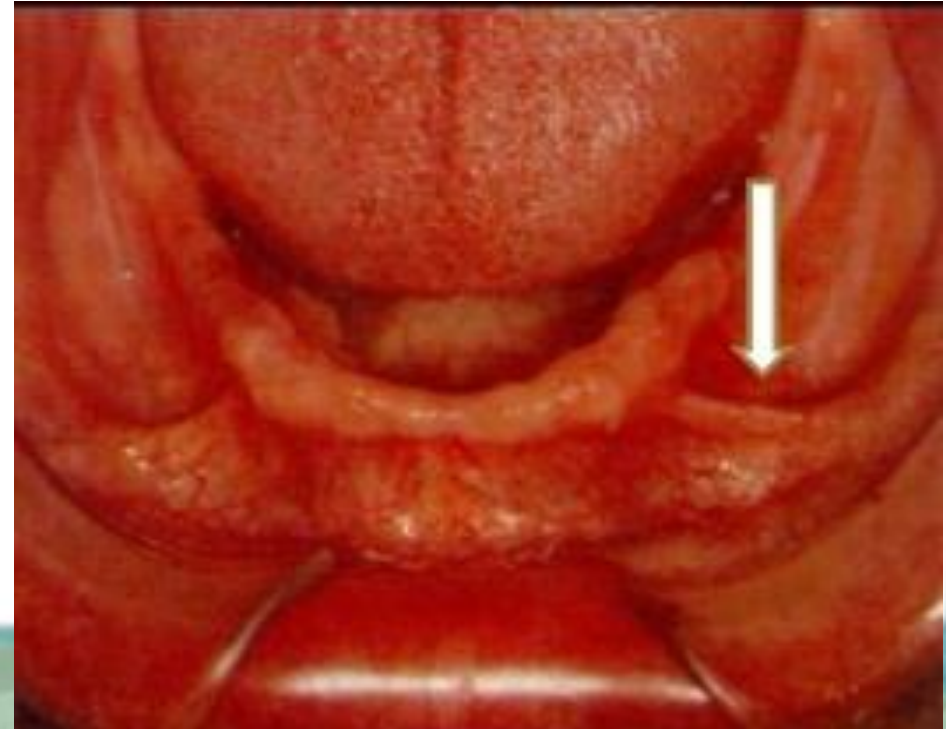
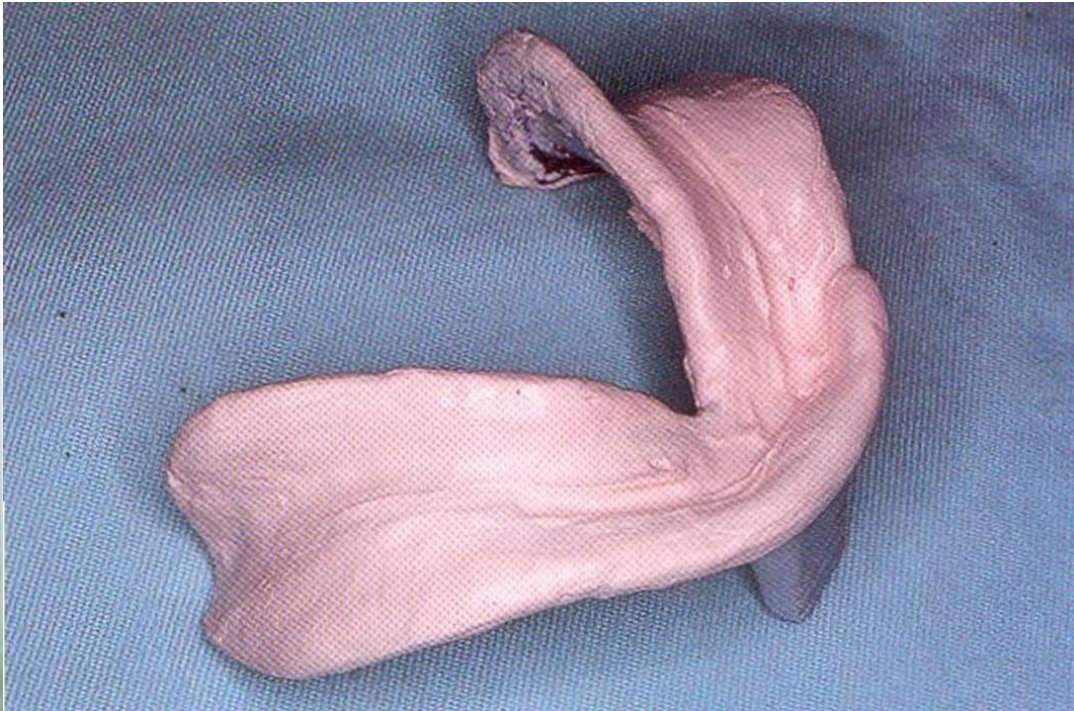
Labial Vestibule

- Space b/w residual alveolar bone and lips.
- Length and thickness of labial flange of denture occupying this space is crucial in influencing lip support and retention.



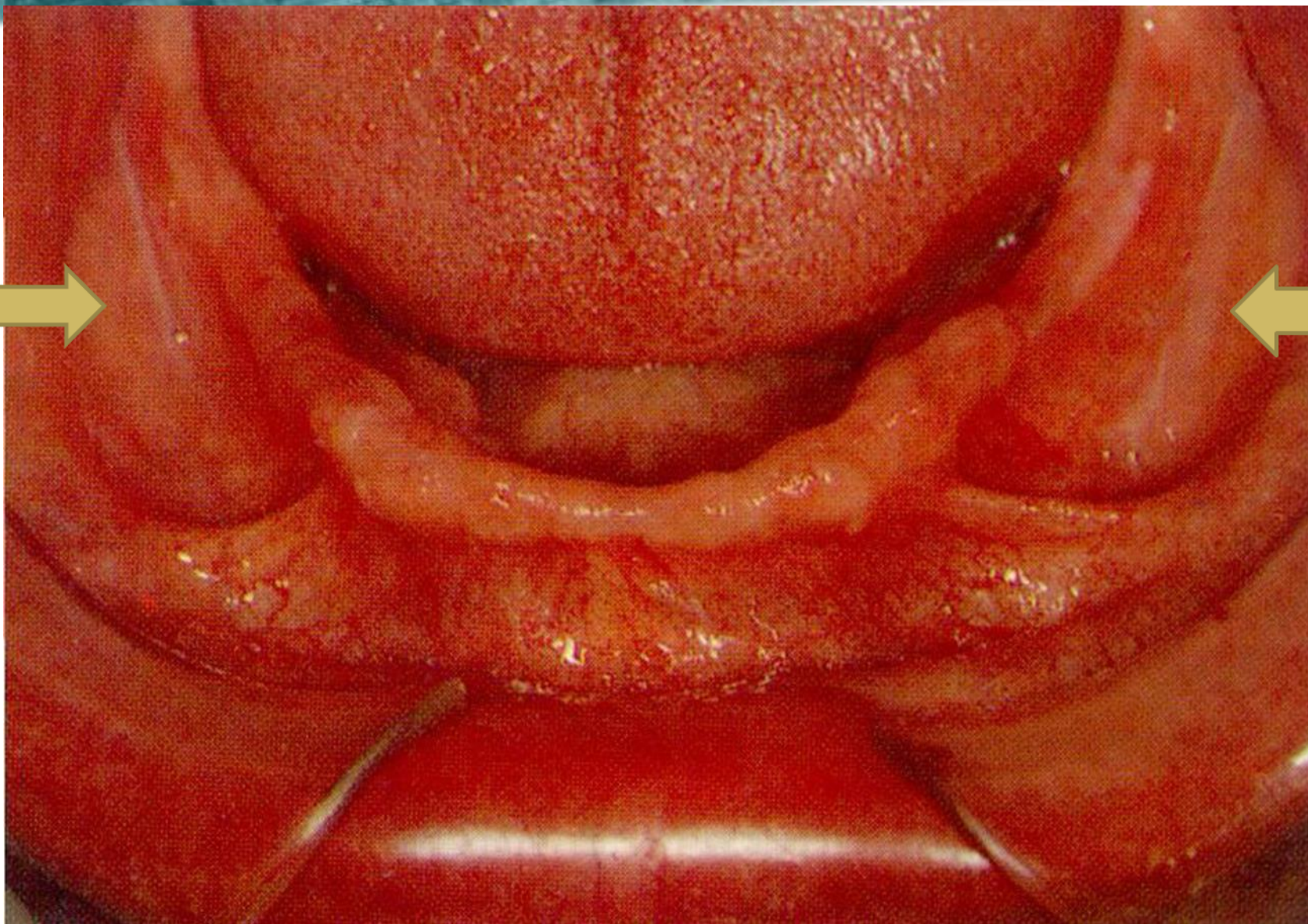
Buccal Frenum

- Overlies depressor anguli oris
- Fibers of buccinator attached to frenum
- Should be relieved to prevent displacement of denture during function



Buccal Vestibule

- Extends from buccal frenum till retromolar pad region
- Bound by residual ridge on one side and buccinator on the other
- Space influenced by action of masseter muscle
- When masseter contracts, it pushes inwards against buccinator, producing bulge in the mouth. This bulge can be only recorded when masseter contracts.
- Reproduced as a notch in the denture flange called the *masseteric notch*.

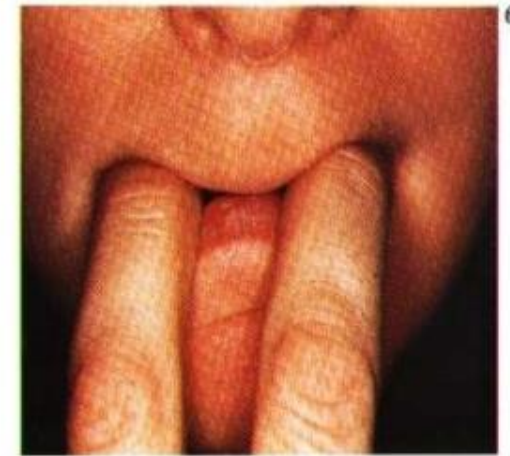
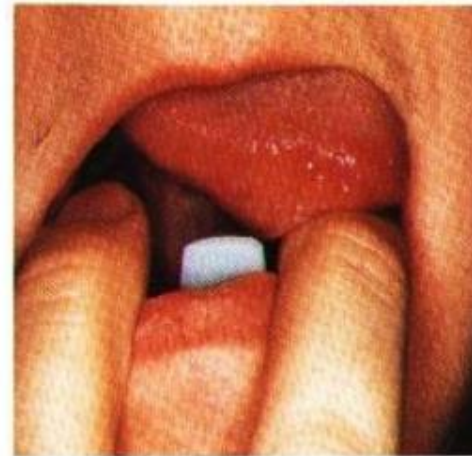


- **Masseter muscle influencing area**
- **Masseteric notch**



Activation of Masseteric notch and distal areas.

- Instruct the patient to open wide and then to close against the resting force of your fingers.

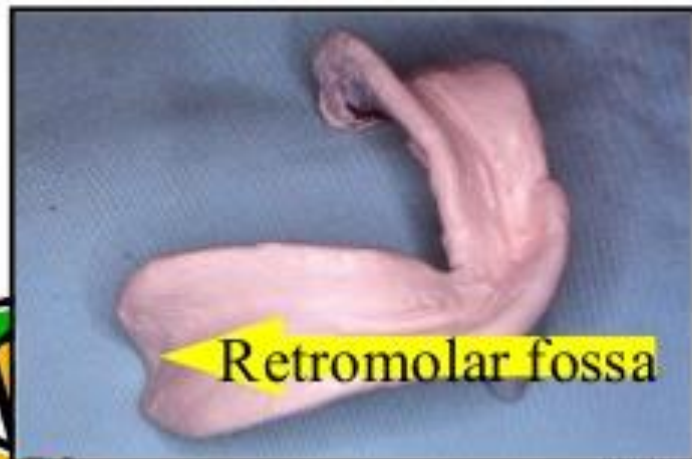
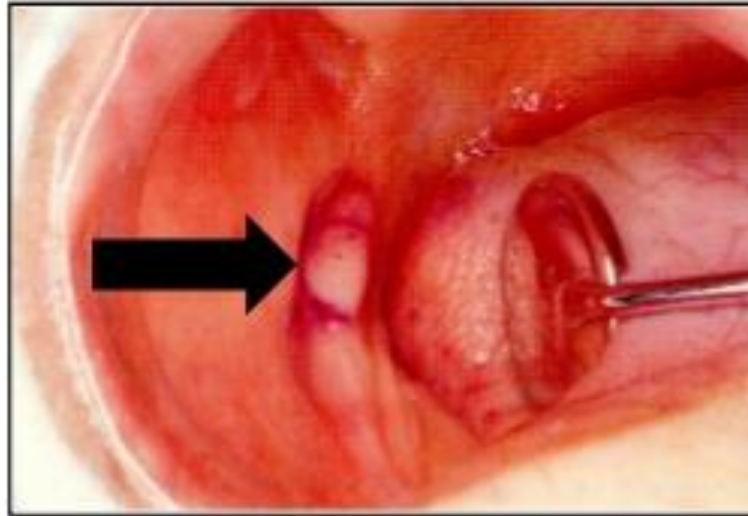




Retromolar Pad

- Important structure as it forms posterior seal of mandibular denture
- Non-keratinized pad of tissue seen as a posterior continuation of the pear shaped pad
- Pear shaped pad is a triangular keratinized soft pad of tissue at distal end of ridge.
- Sicher described it as *triangular soft elevation of mucosa that lies distal to the third molar*. Collection of loose connective tissues with an aggregate of mucosal glands. Bounded posteriorly by tendons of temporalis, laterally by buccinator, medially by pterygomandibular raphe and superior constrictor
- Denture base should extend only one-half to two-third over retromolar pad.

Retromolar pad.

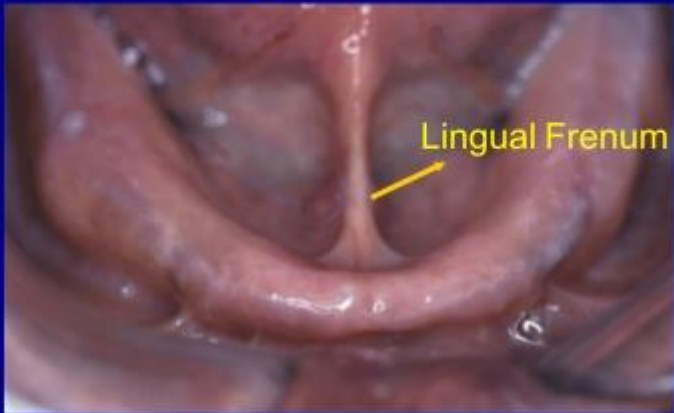


- Triangular soft pad of tissue.
- Posterior end of lower edentulous ridge.
- Limiting landmark of distal extension of complete denture upto ant 2/3 rd of retro molar pad.
- Determines height and width of the occlusal table.
- Contents-loose connective tissue, glandular tissue, laterally buccinator, posteriorly temporalis tendon, medially superior constrictor and pterygo mandibular raphe
- gritman carver

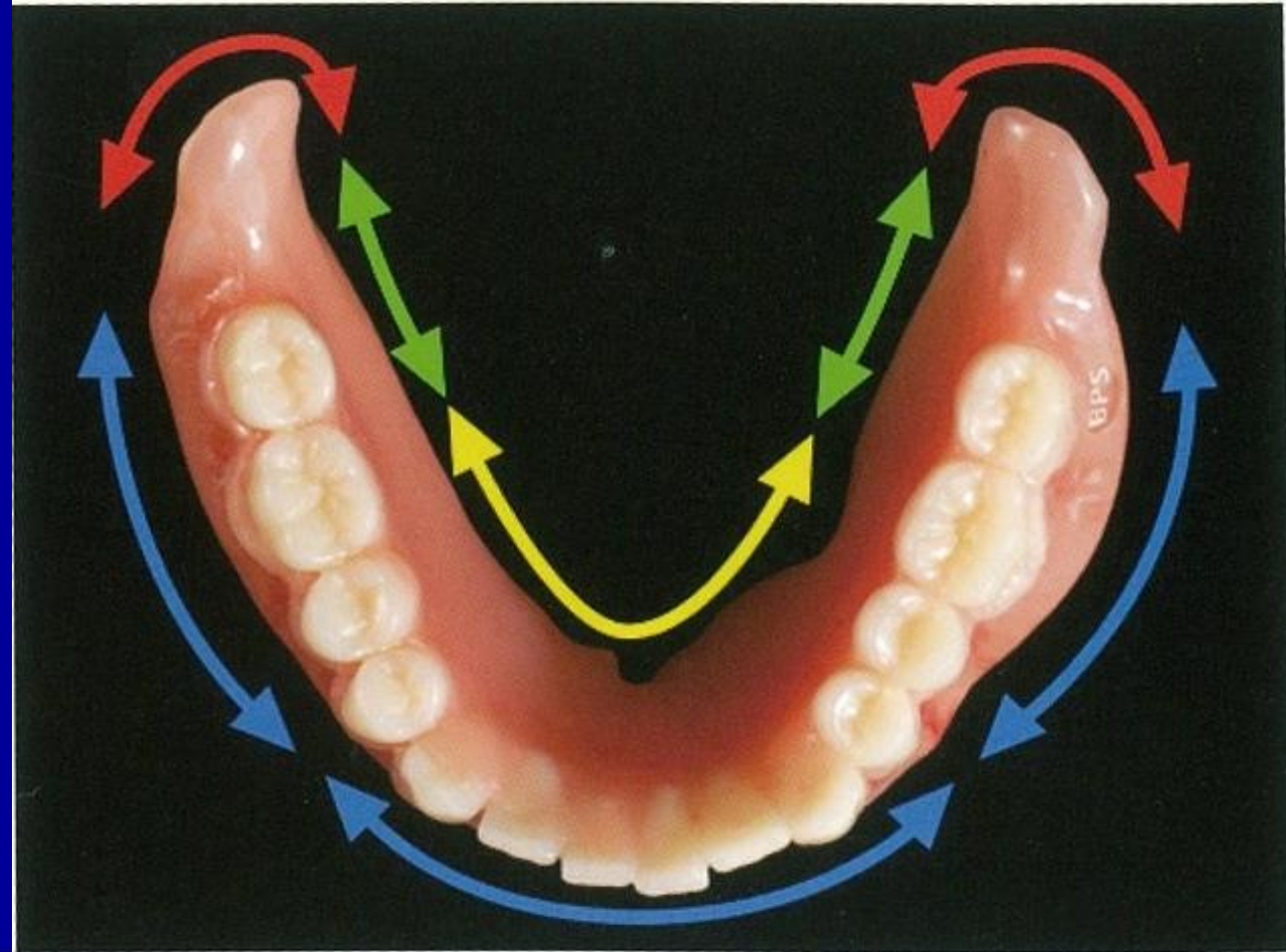
Lingual Frenum

- Fold of mucous membrane
- Base of tongue to supragenial tubercle
- Recorded during function
- Should be corrected if it affects stability of denture

Lingual Frenum



The ventral surface of the tongue (undersurface) is anchored to the floor by a mucous membrane fold known as the lingual frenum.

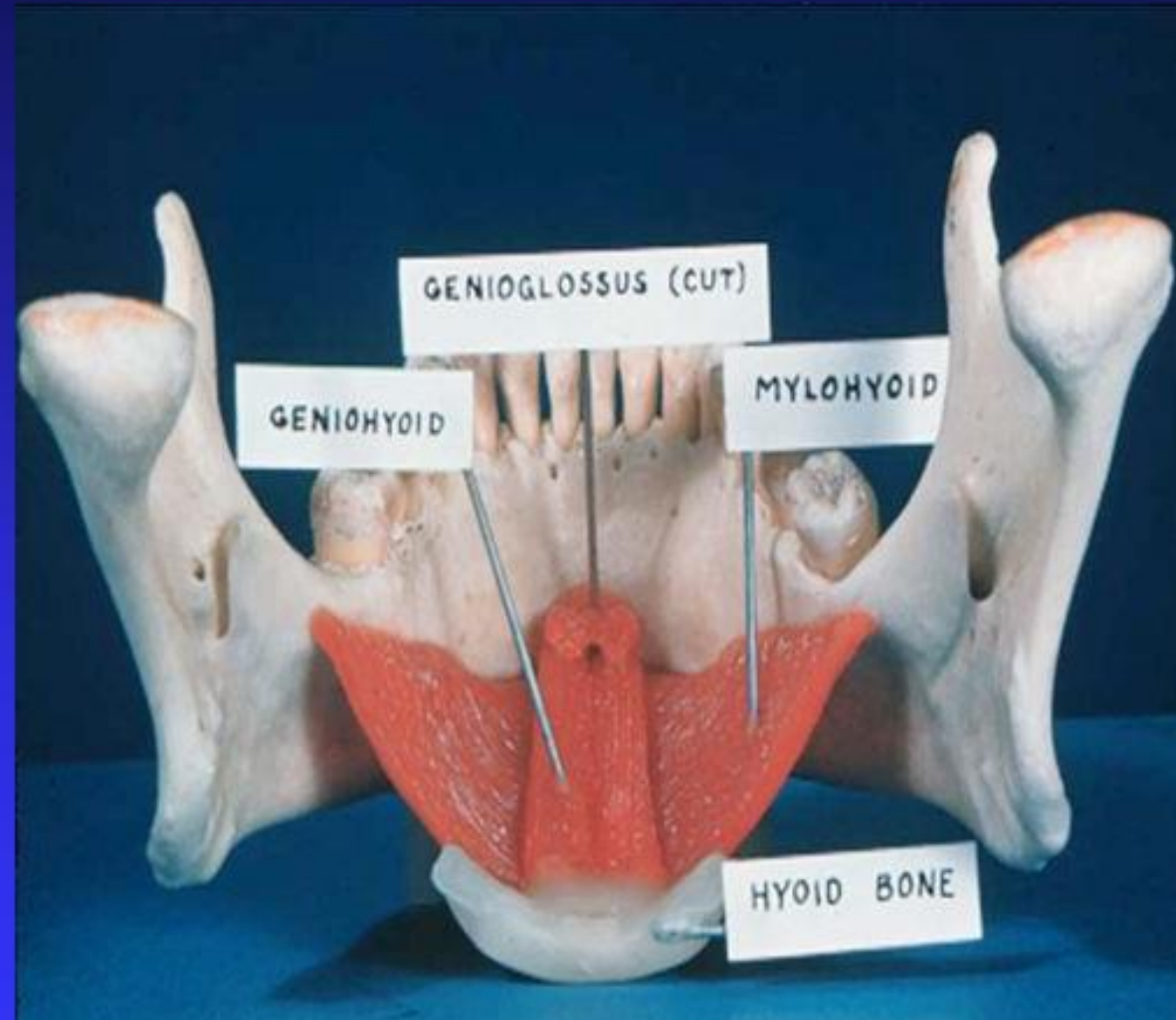


Alveololingual sulcus / Lingual vestibule

- Space between ridge and tongue
- Extends from lingual frenum to retromylohyoid curtain
- Considered in three regions.
- Anterior region:
 - extends from lingual frenum to pre-mylohyoid fossa, where mylohyoid curves below the sulcus.
 - Flange shorter anteriorly, should touch mucosa of the floor of the mouth when tip of tongue touches upper incisors
- Middle region:
 - Extends from pre-mylohyoid fossa to distal end of mylohyoid ridge.
- Region is shallower than other parts of sulcus due to prominence of mylohyoid ridge and action of mylohyoid muscle
- Lingual flange should slope medially towards tongue
- Sloping helps in three ways: tongue rests over flange thus stabilizing denture, provides space for raising floor of mouth without displacing denture, & peripheral seal maintained during function
- Posterior region:
 - Retro-mylohyoid fossa present here
 - Denture flange turns laterally towards ramus of mandible to fill fossa and complete S-form of lingual flange of mandibular denture. Also called *lateral throat form*.

Lingual Border

Mylohyoid muscle has an indirect effect on anterior lingual border up to second premolar & direct effect on posterior lingual border in molar region .



Mylohyoid ridge

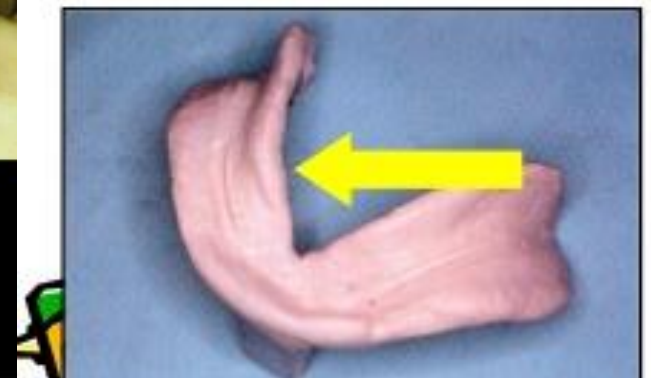
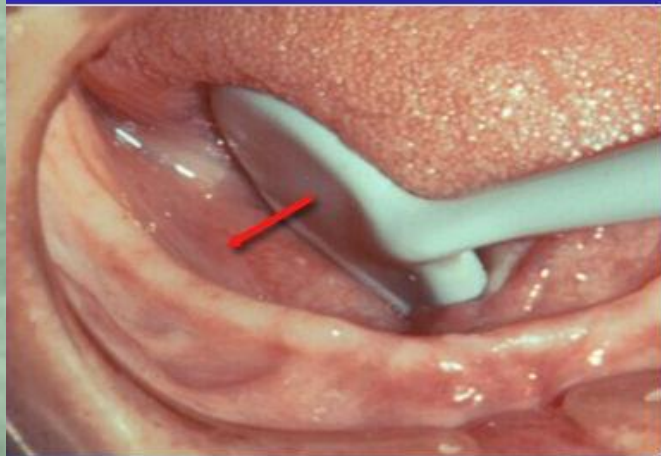
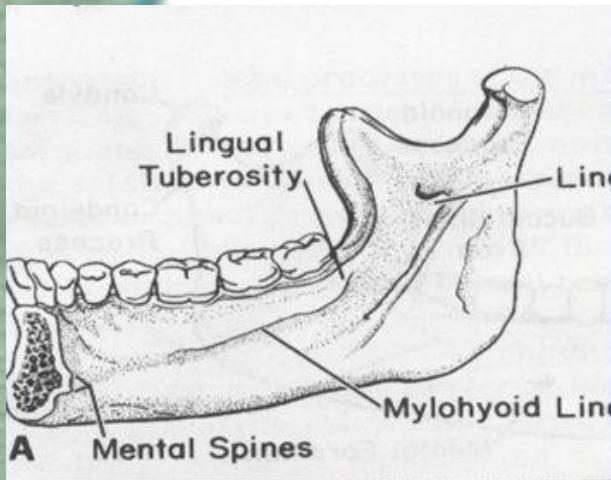
The mylohyoid ridge is a bony prominence along the lingual aspect of the mandible

Soft tissue usually hides the sharpness of mylohyoid ridge.

Anteriorly, this ridge with mylohyoid muscle is close to inferior surface of mandible.

Posteriorly, after resorption, it often flushes with the residual ridge.

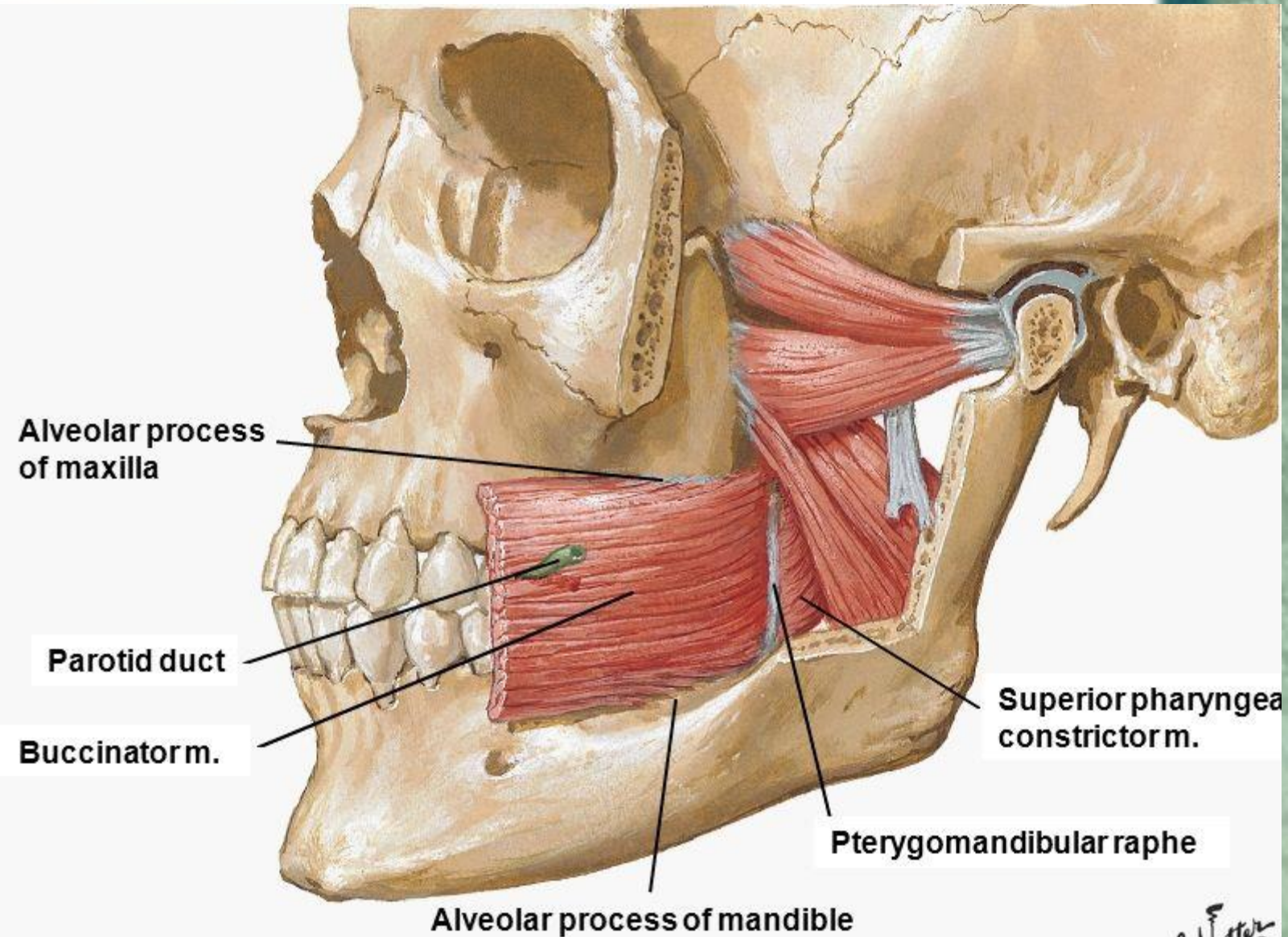
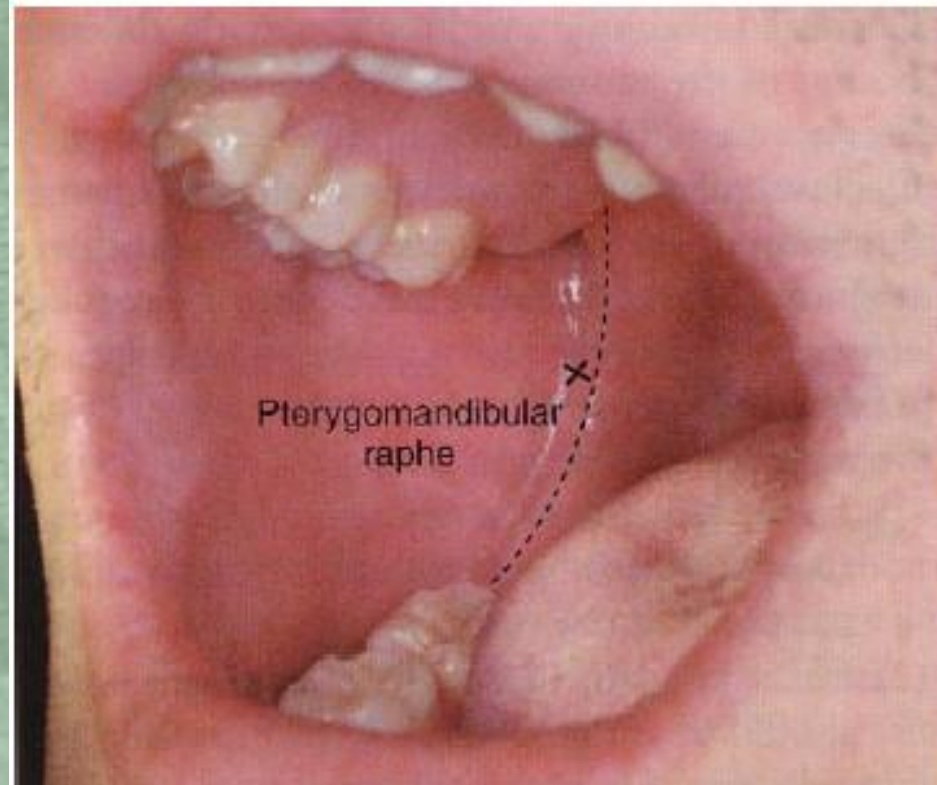
The mucous membrane overlying the sharp or irregular mylohyoid ridge needs to be relieved.



Pterygomandibular Raphe

- Arises from hamular process of medial pterygoid plate and gets attached to the mylohyoid ridge.
- Raphe is a tendinous insertion of two muscles.
- Superior constrictor is inserted postero-medially and buccinator inserted antero-laterally.
- Very prominent in some patients requiring notch-like relief on denture.

Figure 15. Pterygomandibular Raphe

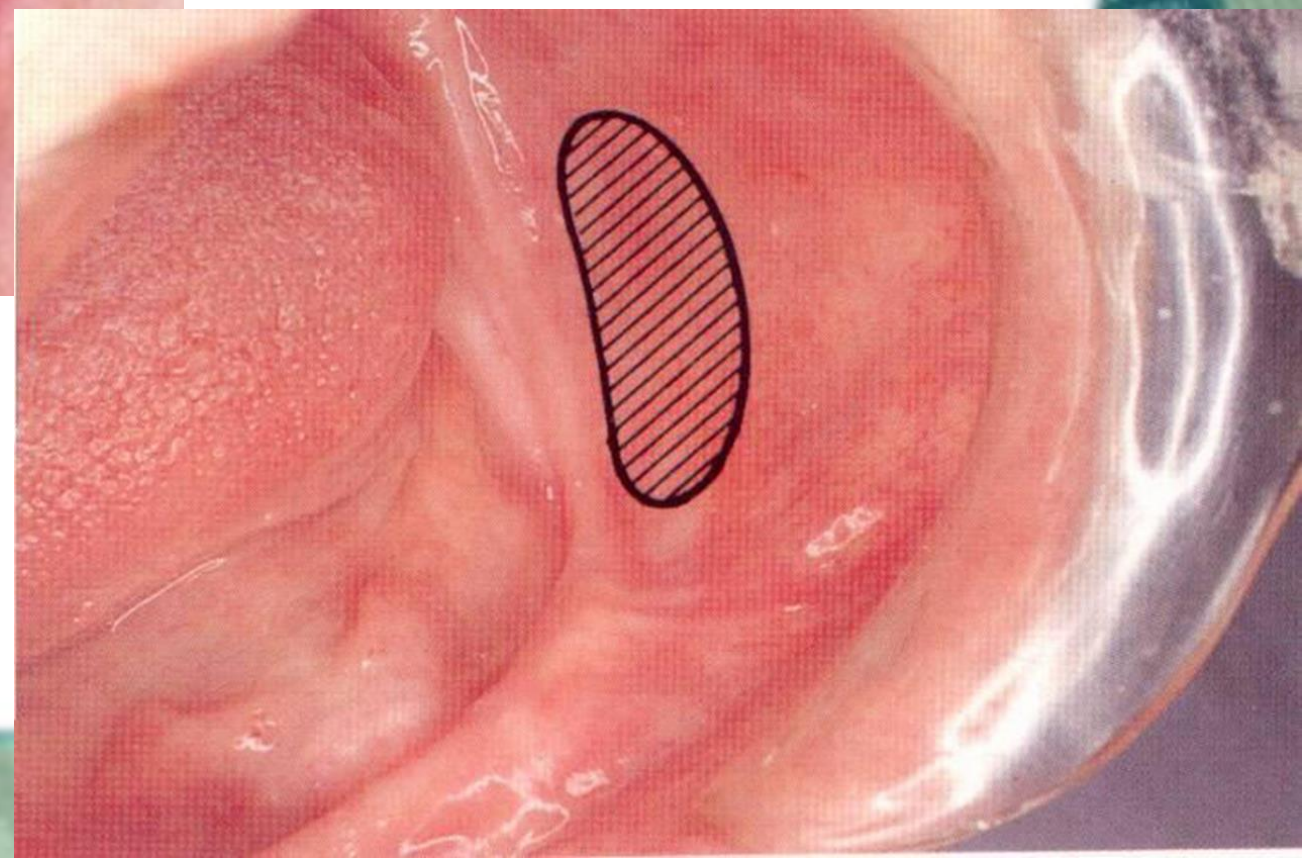
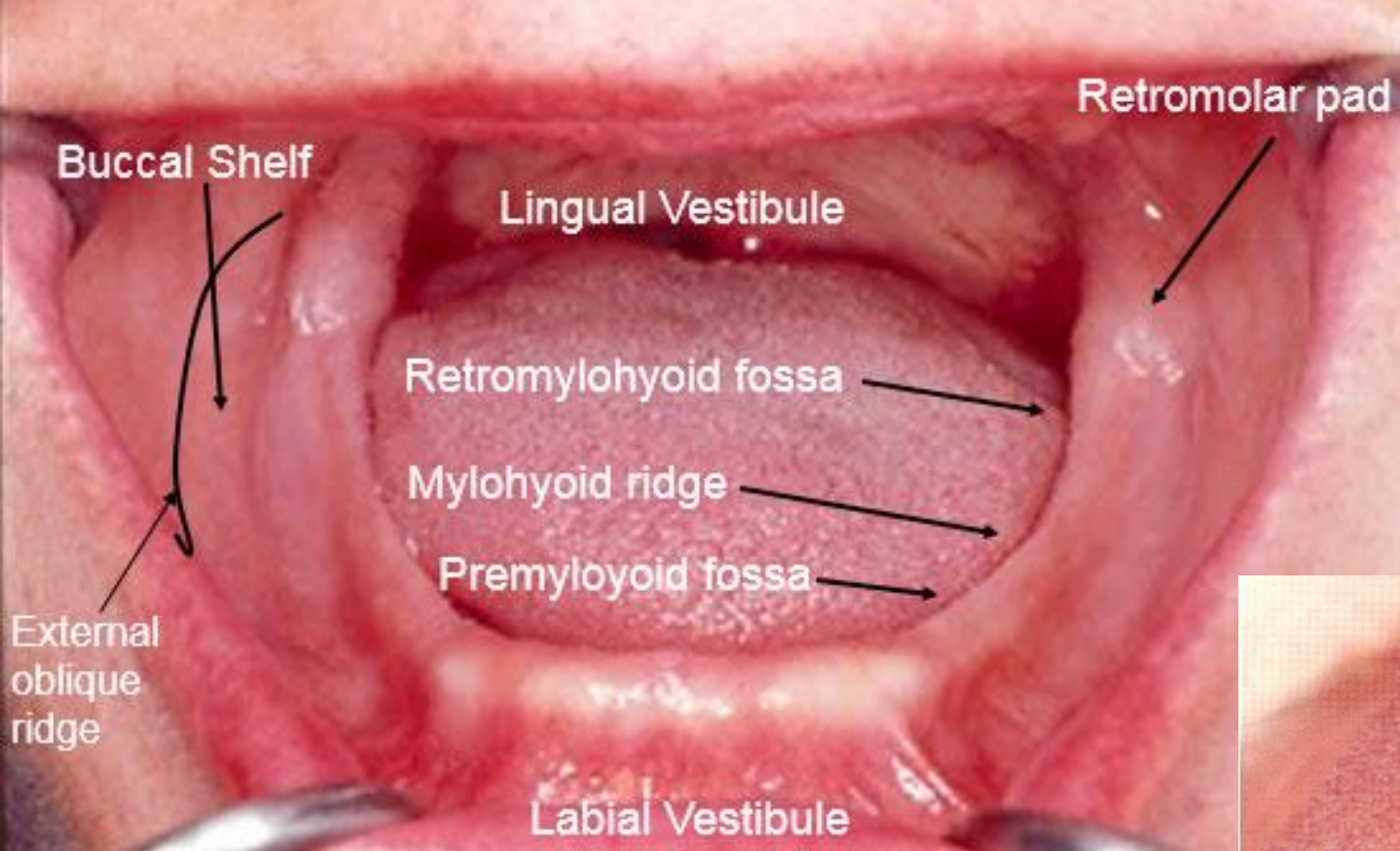


Supporting Structures of Mandible

- Primary Stress Bearing:
 - Buccal shelf area
- Secondary Stress Bearing:
 - Residual alveolar ridge

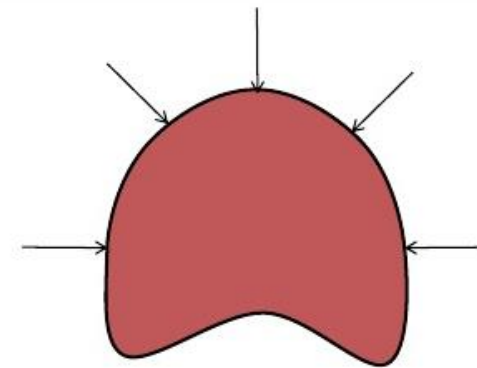
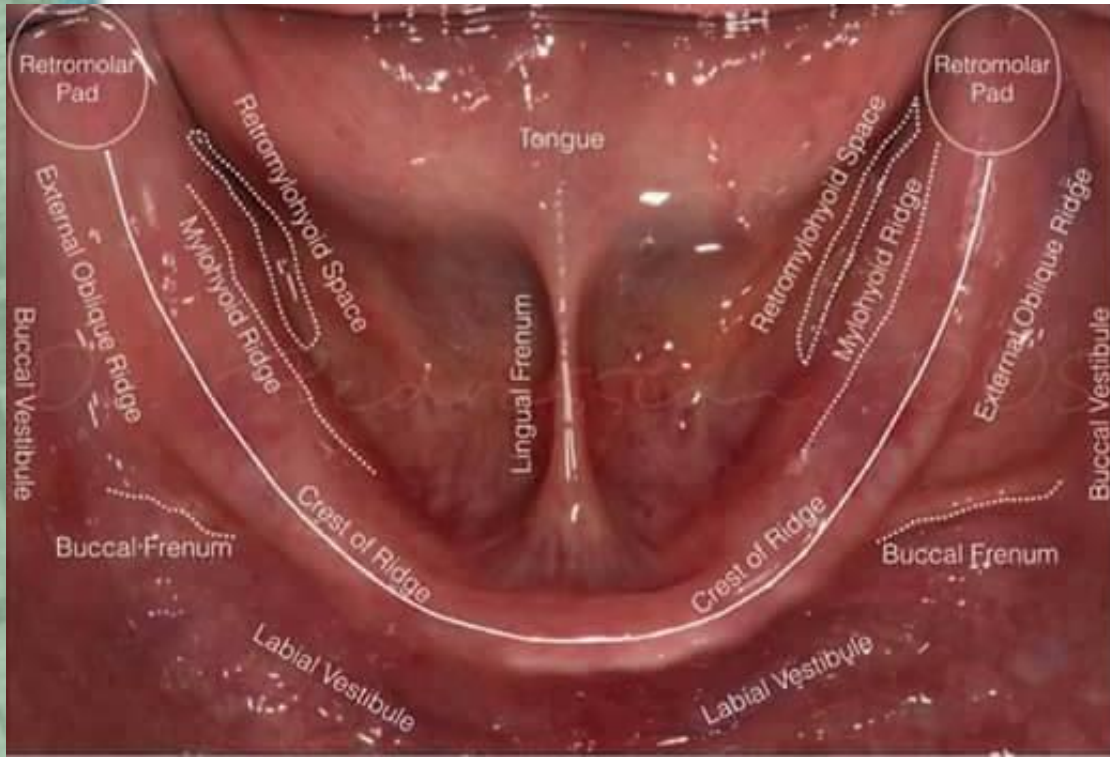
Buccal Shelf Area

- Area b/w buccal frenum and anterior border of masseter.
- Boundaries:
 - Medially: crest of ridge
 - Distally: retro-molar pad
 - Laterally: external oblique ridge
- Width of buccal shelf increases as alveolar resorption continues
- Thick submucosa overlying cortical plate
- It lies at right angles to the occlusal forces



Residual Alveolar Ridge

- Edentulous mandible becomes flat with concave denture bearing surface
- Attaching structures on lingual side of ridge attach over the ridge
- Due to resorption, mandible inclines outward and becomes progressively wider.

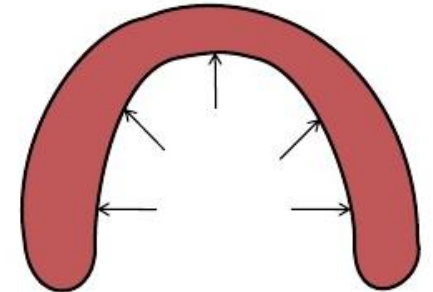


➤ MAXILLAE

- Resorption is centripetal (toward centre)

➤ MANDIBLE

- Resorption is centrifugal (away from centre)



Relief Areas of Mandible

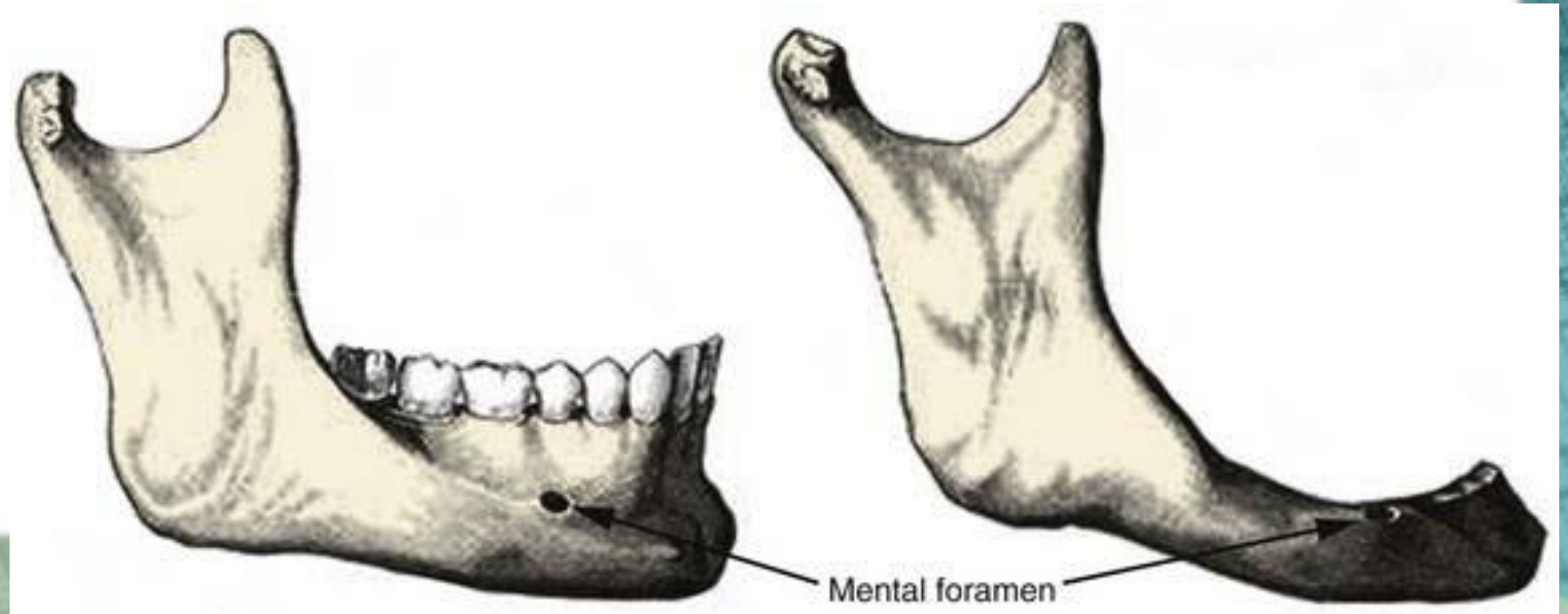
- Crest of residual alveolar ridge
- Mental foramen
- Genial tubercles
- Torus mandibularis
- Mylohyoid ridge

Mylohyoid Ridge

- Runs along lingual surface of mandible
- Anteriorly lies close to inferior border of mandible
- Posteriorly lies flush with residual ridge
- Thin mucosa over mylohyoid ridge may get traumatized and should be relieved
- Area under this ridge is an undercut

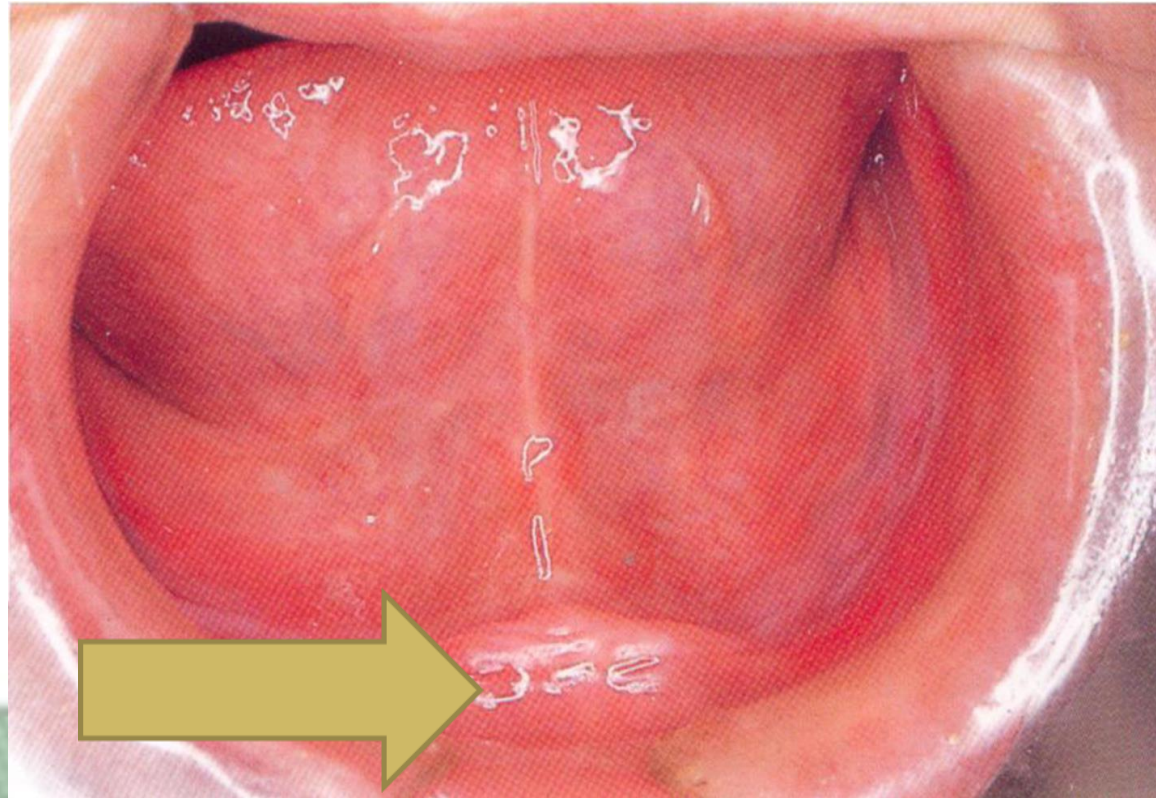
Mental foramen

- Lies b/w first and second premolar region
- Due to ridge resorption, it may lie close to ridge
- Should be relieved in these cases as pressure over nerve may produce paresthesia



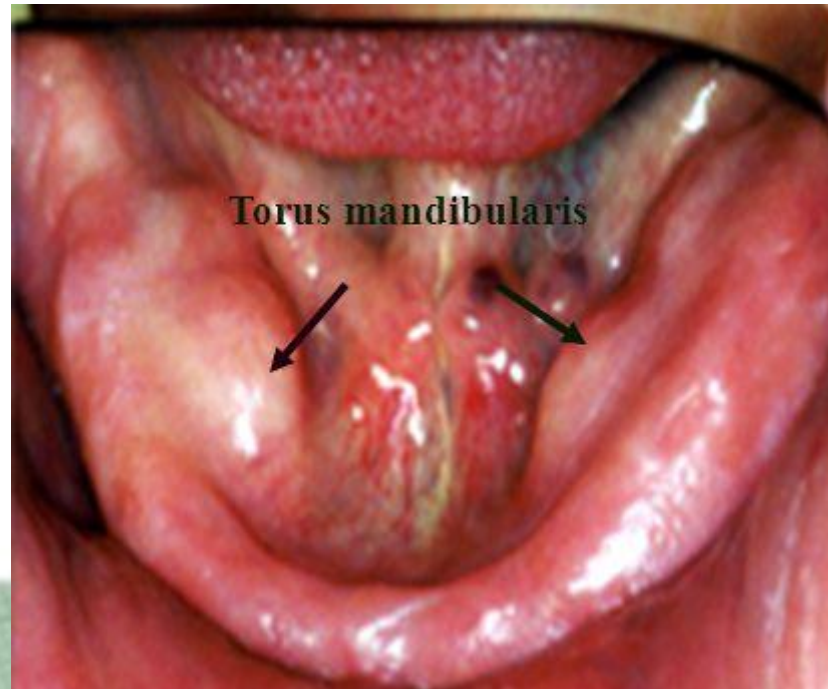
Genial Tubercles

- Pair of bony tubercles found anteriorly on lingual side of body of mandible
- Due to resorption, may become increasingly prominent making denture usage difficult



Torus mandibularis

- Abnormal bony prominence found bilaterally on lingual side, near premolar region
- Covered by thin mucosa
- Has to be relieved or surgically removed which is decided by size and extent





Thank you!