

Second Stage

3. lecture

Anatomical landmarks of the mandibular arch

م.د. نسرين مهدي صالح الفهداوي
جامعة المعارف/ كلية طب الأسنان



B. ANATOMICAL LANDMARKS IN THE MANDIBLE

They can be broadly grouped into:

Limiting Structures

1. Labial frenum.
2. Labial vestibule.
3. Buccal frenum.
4. Buccal vestibule.
5. Lingual frenum.
6. Alveololingual sulcus.
7. Retromolar pads.
8. Mylohyoid ridge.
9. External oblique line.

Relief Areas

1. Crest of the residual alveolar ridge.
2. Mental foramen.
3. Genial tubercles
4. Torus mandibularis.

Supporting Structures

1. Buccal shelf area
2. Residual alveolar ridge

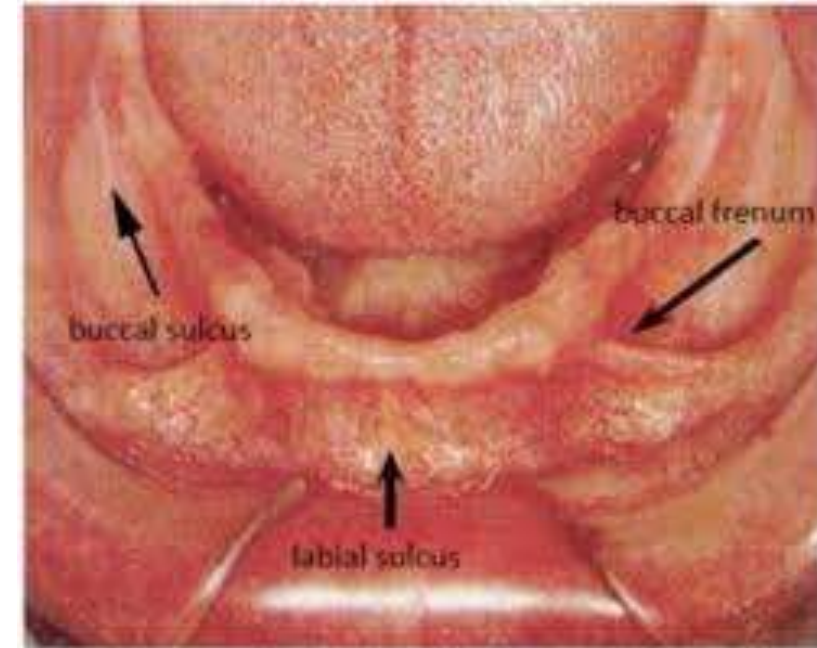
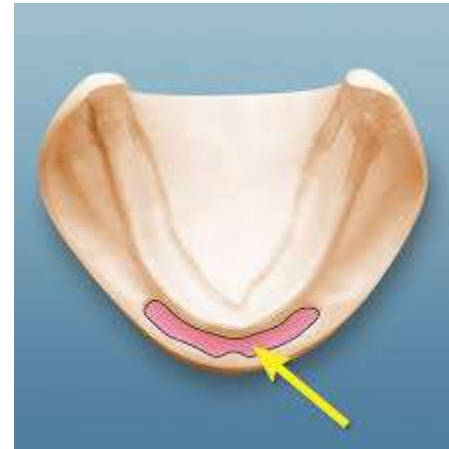
Limiting Structures

1. Labial frenum: -

It is like the maxillary one. It is a fold of mucous membrane not so pronounced as the maxillary Labial Frenum. It may be single or multiple, fine or broad, but it may contain fibrous band attached to the orbicularis or is muscle and therefore it may be active in mastication.

2. Labial Vestibule: -

Extend from the labial frenum to the buccal frenum, limited inferiorly by the MUCOUS Membrane reflection, internally by the Residual Ridge and labially by the lower lip.

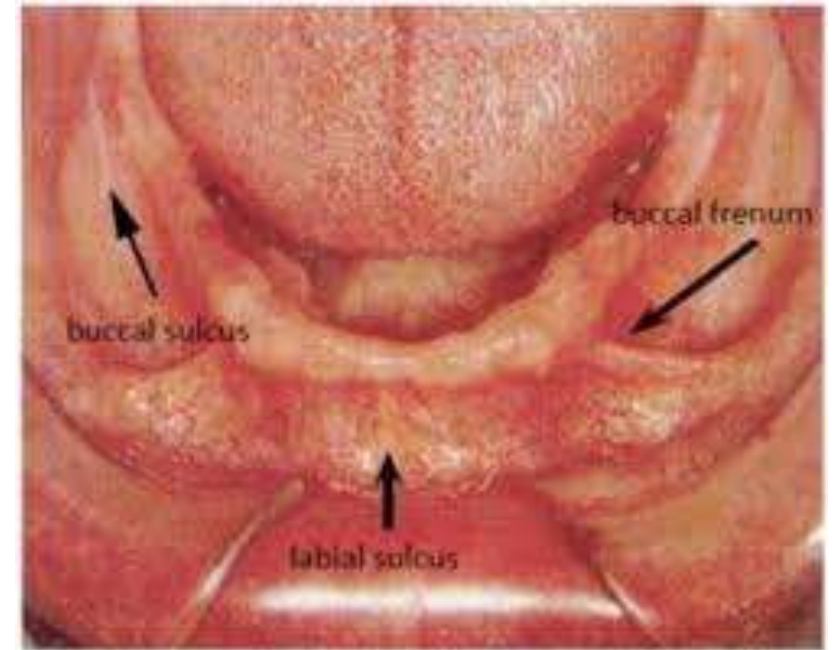


3. Buccal frenum:-

A fold or folds of Mucous Membrane extended from the buccal Mucous Membrane reflection area toward the slopes of Residual Ridge in the region distal to canine eminence. It may be single, double or multiple broad U-shaped or narrow V-shaped, in an anterior-posterior direction. It must be molded and have enough space in the denture to prevent displacement as it may be activated in function by the muscles.

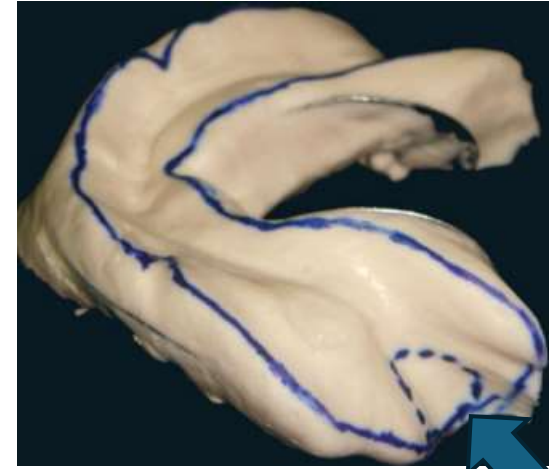
4. Buccal Vestibule:-

It has extended from the buccal frenum to the distal end of the arch (outside back corner of the retromolar Pad) and bounded externally by the cheek and internally by the residual ridge.



5. Retromolar pad area (Pear-Shaped Pad): :-

It is a pear-shaped area at the distal end of the residual ridge. Histologically, it contains thin non-keratinized epithelium, loose alveolar connective tissue, glandular tissue . The retromolar pad is quite important for the support and the peripheral seal.



6. Lingual frenum:-

It is a fold of mucous membrane can be observed when the tongue is elevated, extending along the floor of the mouth to the under surface of the tongue. It will produce the lingual notch in the denture. This frenum is activated when the tongue is moved therefore it must be molded well in the impression to prevent displacement of the denture or ulceration of the tissue.



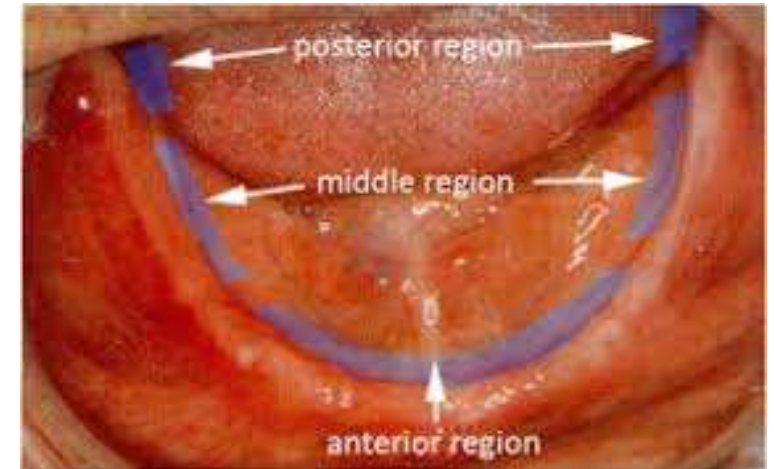
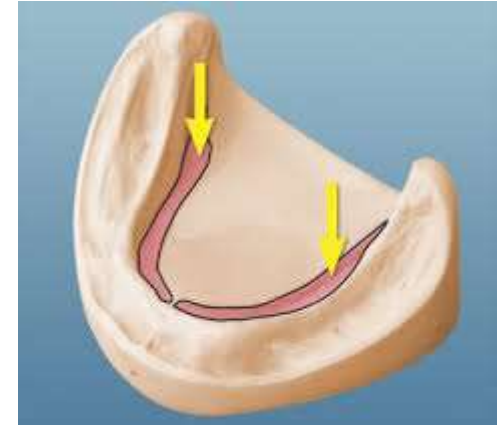
7. Alveolingual sulcus (lingual vestibule):-

It is extended from the lingual frenum to the retromylohyoid curtain and bounded externally by the residual ridge and internally by the tongue. This space is filled by the lingual flange of the denture and can be divided into:

a) Anterior portion: Extended from the lingual frenum to the 1ST premolar area (premylohyoid fossa).

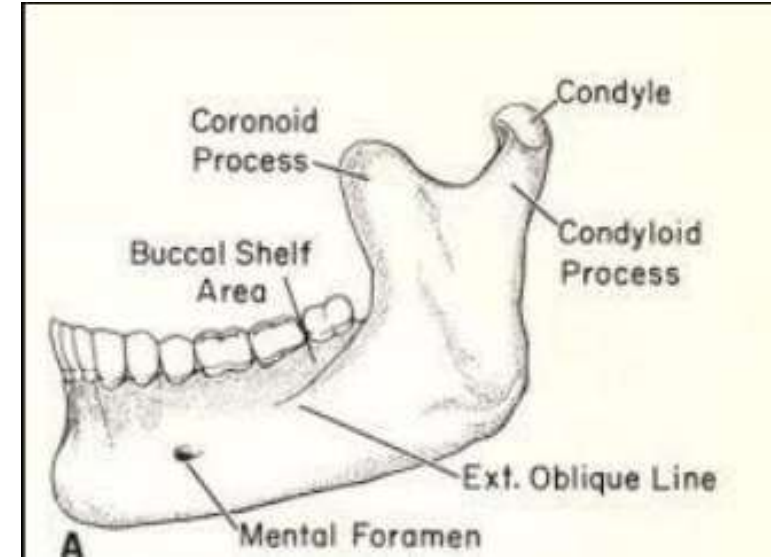
b) Middle region: Extended from the premylohyoid fossa to the distal end of the mylohyoid ridge, here the mylohyoid muscle is important in determining the contour of the lingual flange.

c) Most posterior region: Is the retromylohyoid space or fossa, it extends from the end of the mylohyoid ridge to the retromylohyoid curtain. The lingual flange of the denture should extend laterally and fill the retromylohyoid fossa.



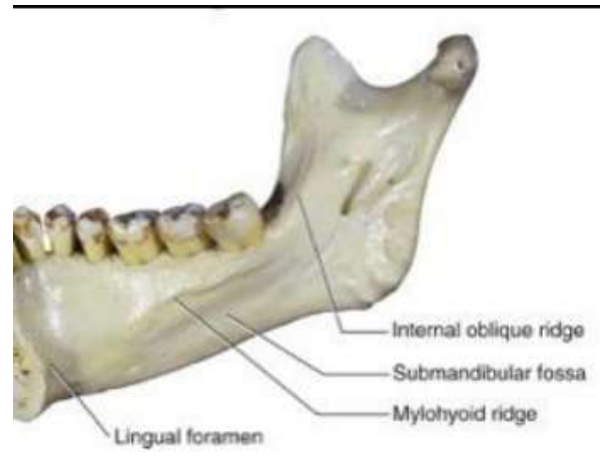
8. External oblique line:-

It is a ridge of dense bone extended from just above the mental foramen superiorly and distally to be continuous with the anterior border of the ramus.



9. Mylohyoid ridge: -

It is an irregular bony crest on the lingual surface of the mandible; this ridge is near the inferior border of the mandible in the incisal region but becomes progressively higher on the posterior body of the mandible until it terminates near the 3rd molar area.



Relief Areas:

1. Mental foramen:-

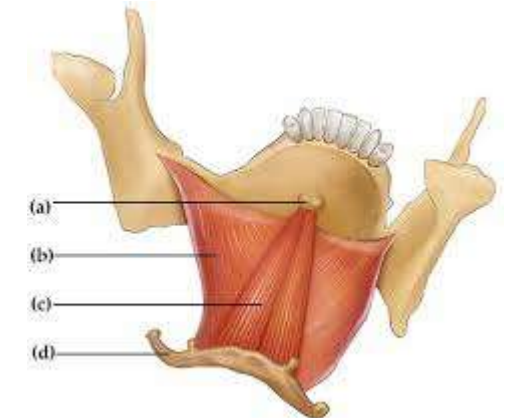
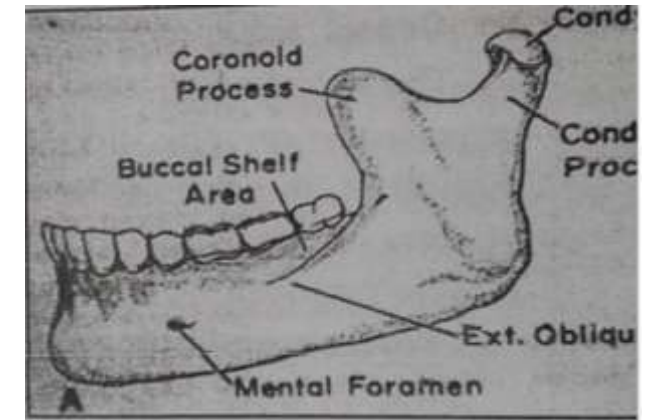
It is located on the external surface of the mandible between the first and second premolar area.

2. Genial Tubercles:-

These are a pair of bony structures found anteriorly on the lingual side of the body of the mandible, in case of sever bone resorption, they may occupy more superior position making denture usage difficult, surgical correction maybe needed.

3. Torus mandibularis:-

These are bony exocytosis composed of dense cortical bone covered by thin mucous membrane, found on the lingual surface of the mandible at the premolar area.



Supporting Structures:

The mandibular denture poses a great technical challenge. The support for a mandibular denture comes from the body of the mandible. The available denture-bearing area for an edentulous mandible is **14 cm²** but for maxilla it is **24 cm²**.

1. Buccal shelf area:-

The area between the mandibular buccal frenum and the anterior border of the masseter muscle is known as buccal shelf area.

Its boundaries are:

- Medially the crest of the ridge
- Distally the retro-molar pad
- Laterally the external oblique ridge.

2. Residual alveolar ridge:-

The bony process that remains after teeth have been lost is known as the residual ridge. The size and shape of the ridge varies from one patient to another, and when the teeth are lost, the bone of the crest of the lower residual ridge is cancellous in nature, being made up of Spongy trabeculated bone, therefore may not be favorable as a primary stress bearing area for the lower denture

