

Complete denture

Anatomical landmarks of the maxillary arch

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Lec. 2



Introduction

It is quite essential to have knowledge of the tissues that support the maxillary and the mandibular dentures. These tissues help the dentures in obtaining their retention and stability.

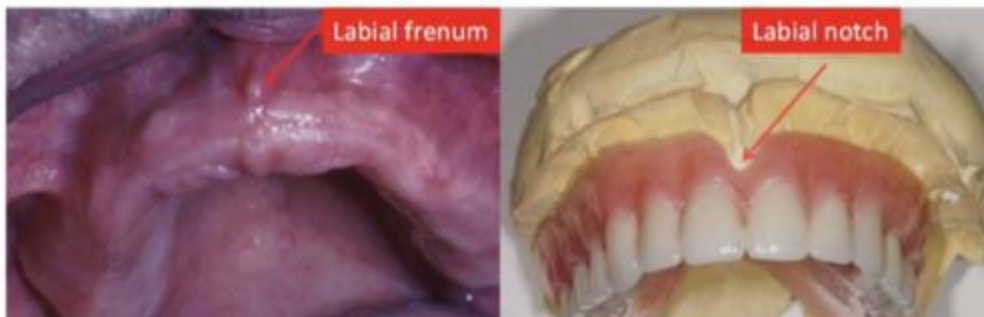
- ✚ There are tissue areas in the maxillary and mandibular arches, which are better suited to bear the stresses due to mastication, and are called as **stress bearing areas**.
- ✚ While there are other tissue areas which are not suited to take up these stresses, either due to their anatomy or due to the structures that lie beneath them and are called **stress relief areas**.
- ✚ There are structures which limit the extension of the maxillary and mandibular complete dentures are called **border-limiting areas**.

Border Limiting Structures

They determine the border of the denture.

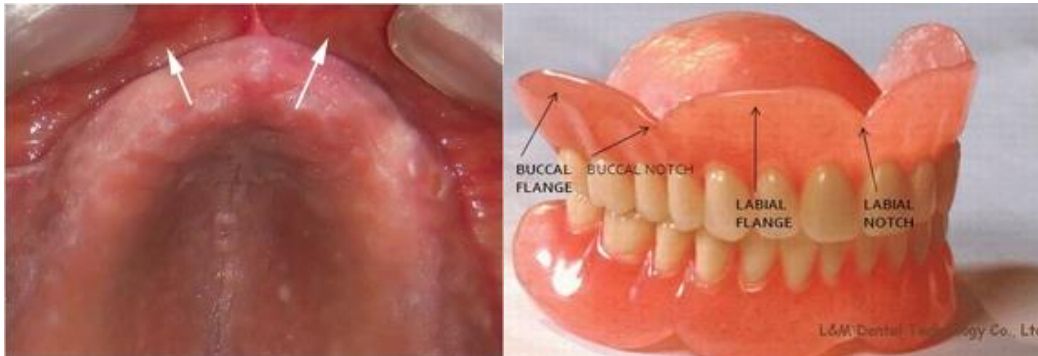
1. Labial Frenum

It is a fibrous band covered by mucous membrane that extends from the labial aspect of the residual ridge to the lip. It has no muscle fibers. The labial frenum creates labial notch in the maxillary impression and denture.



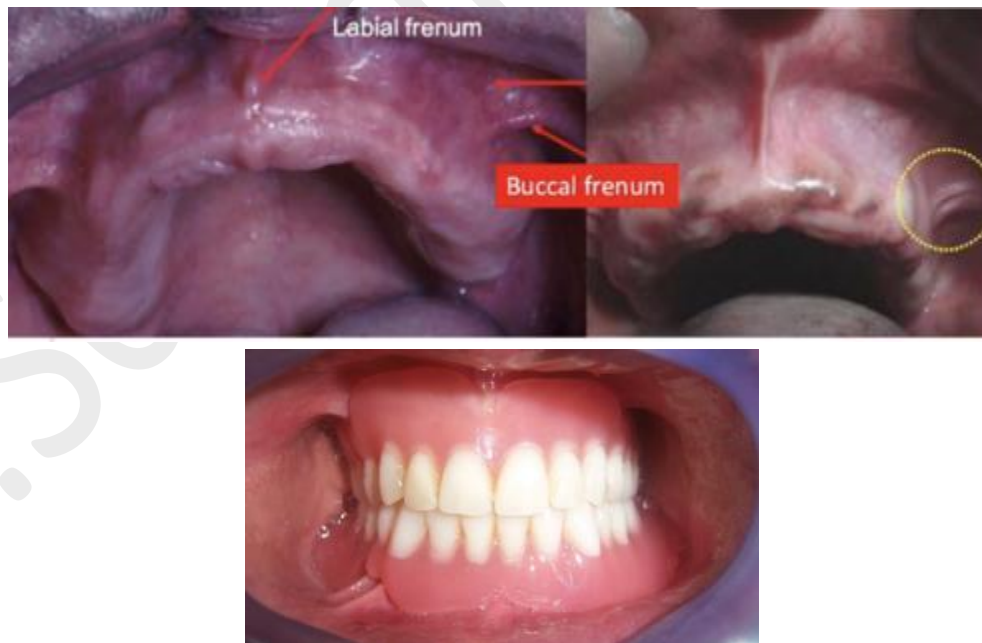
2. Labial Vestibule

It extends on both sides of the midline from labial frenum to the buccal frenum. In the denture, the area that fills the space called labial flange.



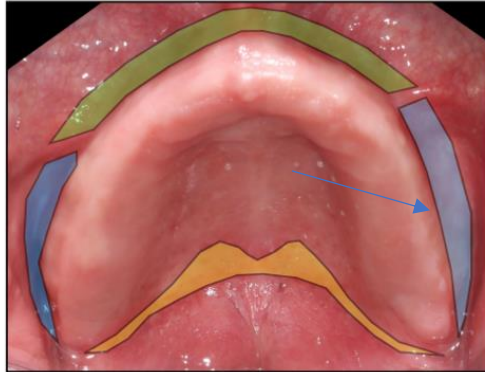
3. Buccal frenum

It is a single fold or multiple folds of mucous membrane extends towards the crest of residual alveolar ridge connecting the gums to the inside of the cheeks. It contains no muscles and it produces buccal notch in the maxillary denture. The buccal notch in the denture must be broad enough to allow the movement of the buccal frenum.



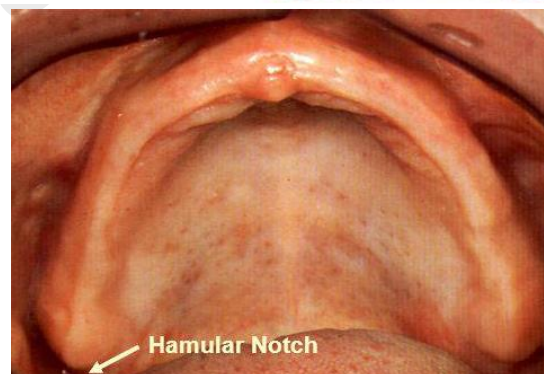
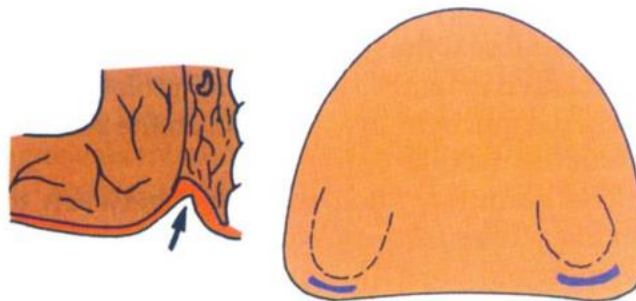
4. Buccal vestibule

It extends from the buccal frenum anteriorly to the hamular notch posteriorly. It is bounded laterally by cheeks and medially by the residual alveolar ridge. It is occupied by the buccal flange of the denture.



5. Hamular notch (pterygo-maxillary notch)

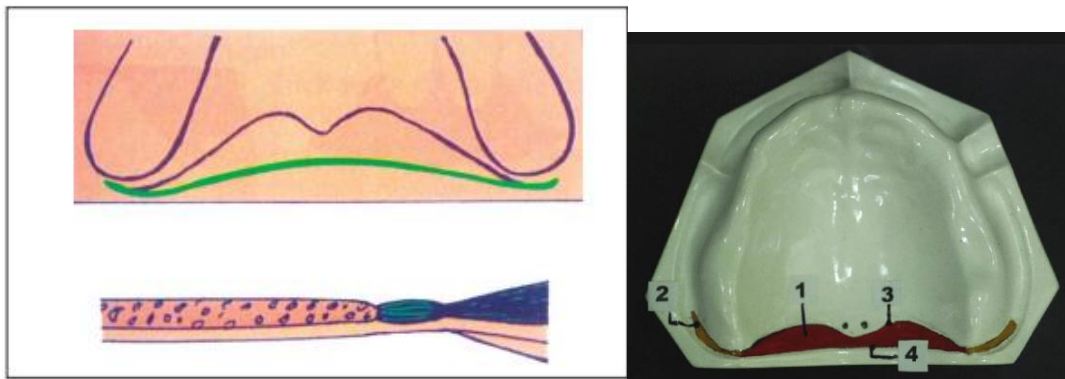
The hamular notch is a depression situated between the maxillary tuberosity and the hamulus of medial pterygoid plate. The denture border should extend till the hamular notch.



6. Posterior Palatal Seal Area (postdam)

The soft tissue area beyond the junction of the hard and soft palates. It aids in the retention of the maxillary denture.

- Vibrating Line: It is imaginary line across the posterior part of the palate marking the division between the movable and immovable tissues of the soft palate. It extends from one hamular notch to the other. It acts as a guide to locate the posterior border of the denture. This can be identified when the movable tissues are functioning; when the individual says "AH" sounds.
- In the denture, the posterior border of the denture that lies over vibrating line is known as (post dam) to form posterior seal.



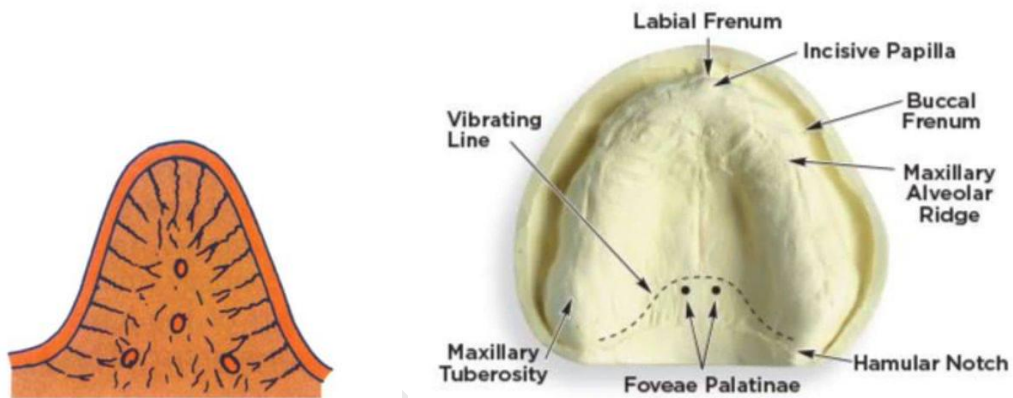
Supporting Structures

These areas are the load-bearing areas. The denture should be designed such that most of the load is concentrated on these areas.

1. The Residual Alveolar Ridge

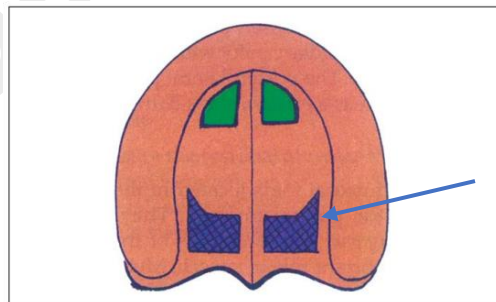
It is the portion of the alveolar ridge and its soft tissue covering which remains following the removal of teeth.

- The crest of the ridge act as a secondary stress-bearing area.
- The posterolateral portion of the residual ridge act as a primary stress-bearing area.



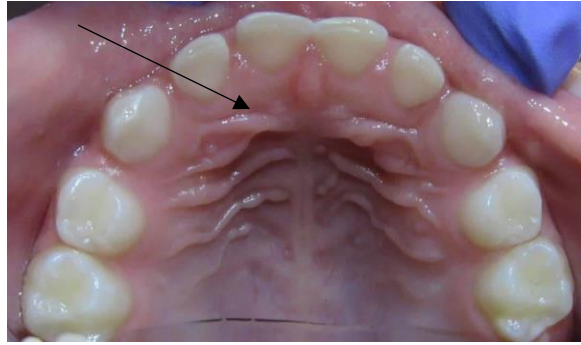
2. Hard Palate

The horizontal portion of the hard palate lateral to the midline acts as a primary stress-bearing area.



3. Rugae area

They are mucosal folds located in the anterior region of the hard palate. The folds of the mucosa play an important role in speech. They act as a secondary stress-bearing area.



4. Maxillary Tuberosity

It is an extension of the residual ridge in the second and third molar region. it considered as a secondary stress-bearing area.



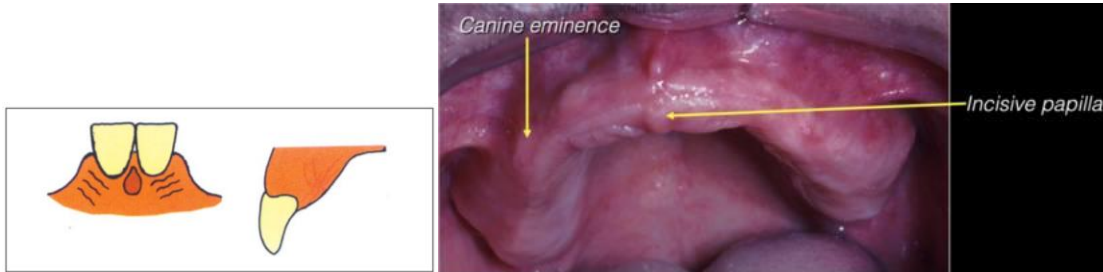
Relief Areas

These areas resorb under constant load or contain fragile structures within. The denture should be designed such that the masticatory load is not concentrated over these areas.

Relief: it is a space provided between the denture surface and the soft tissue to reduce or eliminate pressure on anatomical structures.

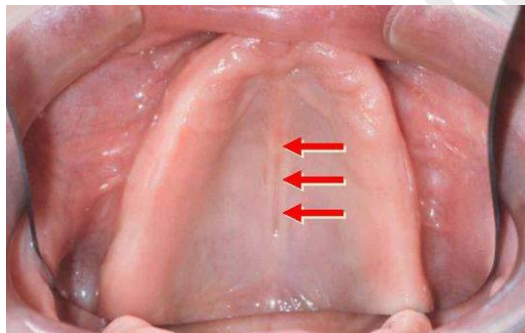
1. Incisive Papilla

It is a midline structure situated behind the central incisors. It is the exit point of the nasopalatine nerves and vessels therefore it should be relieved. It helps in setting of anterior teeth. it produces the incisive fossae in the impression and denture.



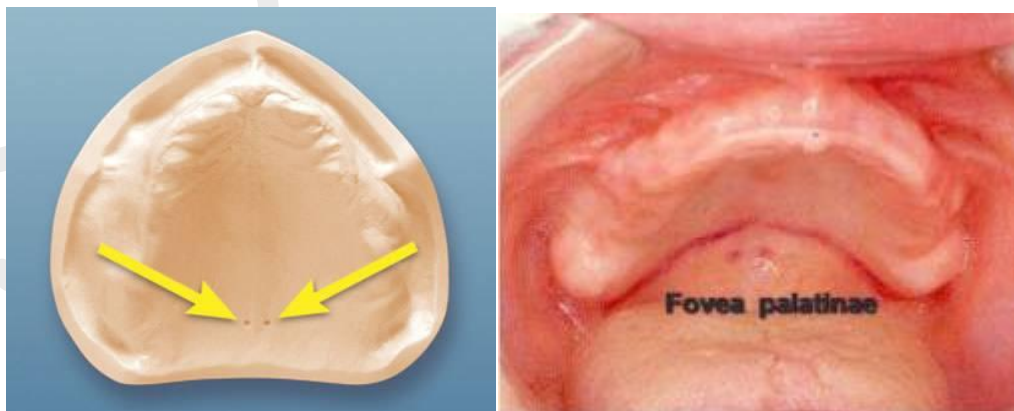
2. Mid-Palatine Raphe

This is the median suture area covered by a thin submucosa. It is an area extending from the incisive papilla to the distal end of the hard palate. It is sensitive and should be relieved during denture fabrication to avoid trauma.



3. Fovea Palatina

Two small pits or depressions in the posterior part of the palate. It acts as guide to locate the posterior border of the denture.



4. Canine eminence (cuspid eminence)

It is a bony elevation on the residual alveolar ridge formed after extraction of the canine. It is located between the canine and first premolar region. It may need relief in the future.



5. Torus palatinus

This is a hard bony enlargement that occurs in the midline of the roof of the mouth and is covered by a thin layer of mucous membrane. Relief done if it is small and surgical removal may be needed if the tori is very large.

