ANATOMICAL LANDMARKS OF MAXILLA

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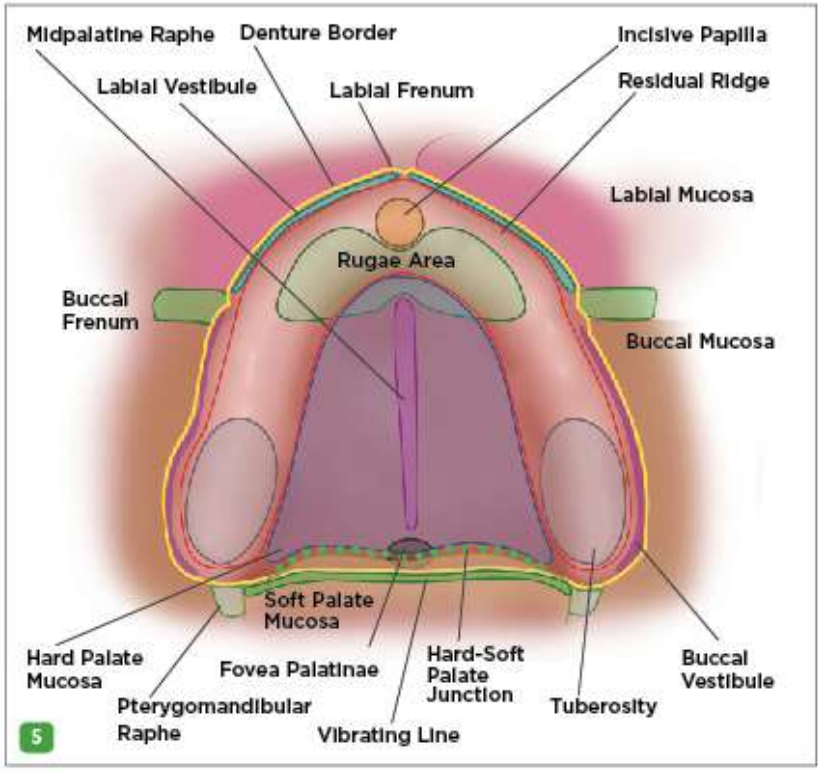
ANATOMICAL LANDMARKS

- LIMITING STRUCTURES
- SUPPORTING STRUCTURES
- RELIEF AREAS

Total area of support from maxilla is around $24cm^2$



LIMITING STRUCTURES IN MAXILLA

- LABIAL FRENUM
- LABIAL VESTIBULE
- BUCCAL FRENUM
- BUCCAL VESTIBULE
- HAMULAR NOTCH
- POSTERIOR PALATAL SEAL AREA

LABIAL FRENUM

- Fibrous band covered by mucous membrane
- Extends from labial aspect of residual ridge to lip
- Has no muscle fiber
- Passive frenum
- V- shaped notch recording during impression making to accommodate the labial frenum

- Labial notch of denture should be narrow but deep to avoid interference

LABIAL VESTIBULE

Defined as , " that portion of the oral cavity which is bounded on one side by the teeth, gingiva, and alveolar ridge (in the edentulous mouth, the alveolar ridge) and on the other side by the lips and cheeks"

- Runs on buccal frenum on one side to the other side of the ridge
- Divided into two compartments by the labial frenum
- Vestibule is covered by lining mucosa
- Orbicularis oris is the main muscle of the lip. Its tone depends on support received from labial flange of denture and position of artificial teeth. Fibers run horizontally and has indirect displacing effect on denture

➢It runs from one buccal frenum to the other on the labial side of the ridge

Labial vestibule

BUCCAL FRENUM

- Separates labial and buccal vestibule
- Has attachments of following muscles
  - Levator anguli oris – attaches beneath the frenum
  - Orbicularis oris – pulls frenum in forward direction
  - Buccinator – pulls frenum in backward direction

Muscles influence position of buccal frenum hence it needs greater (wider and relatively shallower) clearance on buccal flange of denture

BUCCAL VESTIBULE

- Extends from buccal frenum anteriorly to hamular notch posteriorly
- Size of buccal vestibule varies with the :
  - Contraction of buccinator
  - Position of mandible
  - Amount of bone loss in maxilla
- Ramus and coronoid process of mandible and masseter modify the size of this vestibule during mouth opening

HAMULAR NOTCH

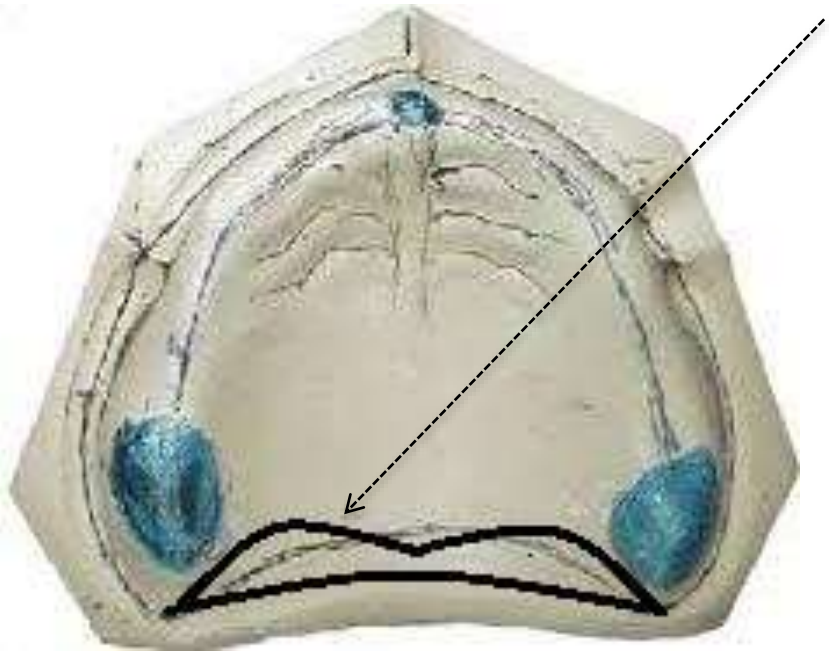
- Depression situated between the maxillary tuberosity and hamulus of medial pterygoid plate
- Soft area of loose areolar tissue
- Tissue in this region can be displaced to achieve posterior palatal seal
- Distolateral border of denture rests in hamular notch
- Denture border should extend till hamular notch overextension causes soreness

HAMULAT NOTCH

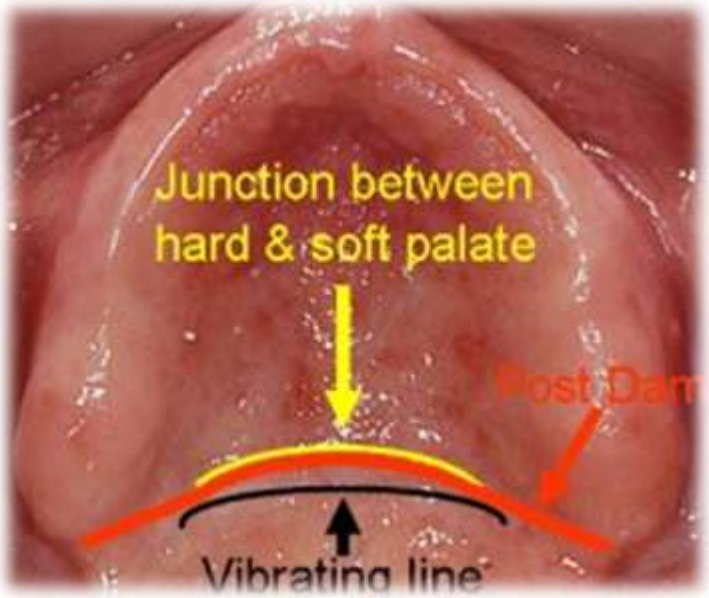
- If border located anteriorly near maxillary tuberosity, denture will not have retentive properties because the border seal is absent over non-resilient tissues

POSTERIOR PALATAL SEAL

Defined as, "the soft tissues along the junction of the hard and soft palates on which pressure within the physiological limits of the tissues can be applied by a denture to aid in the retention of the denture"

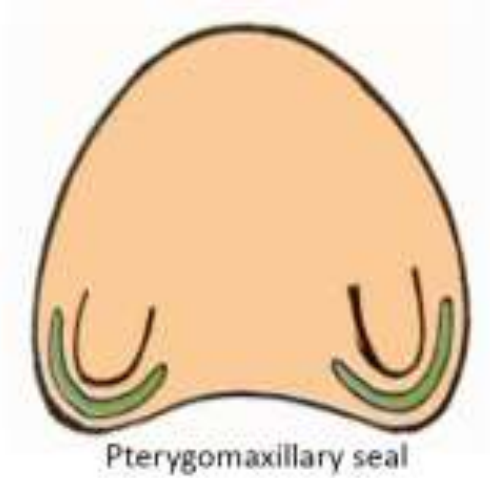


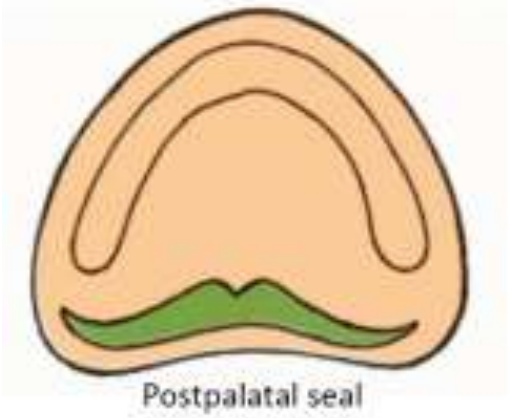
POSTERIOR PALATAL SEAL AREA



POSTERIOR PALATAL SEAL

- Area of soft palate that contacts posterior surfaces of denture base
- Prevents air entry between denture base and soft palate
- Area between anterior and posterior vibrating lines
- Can be divided into two regions :
  - Pterygomaxillary seal
  - Post palatal seal


Pterygomaxillary seal


Postpalatal seal

FUNCTIONS OF POSTERIOR PALATAL SEAL

- Aids in retention by maintaining constant contact with soft palate during functional movements like speech, mastication, and deglutition
- Reduces tendency for gag reflex as it prevents formation of gap between denture base and soft palate during functional movements
- Prevents accumulation of food between posterior border of denture and soft palate
- Compensates for polymerization shrinkage

SUPPORTING STRUCTURES OF MAXILLA

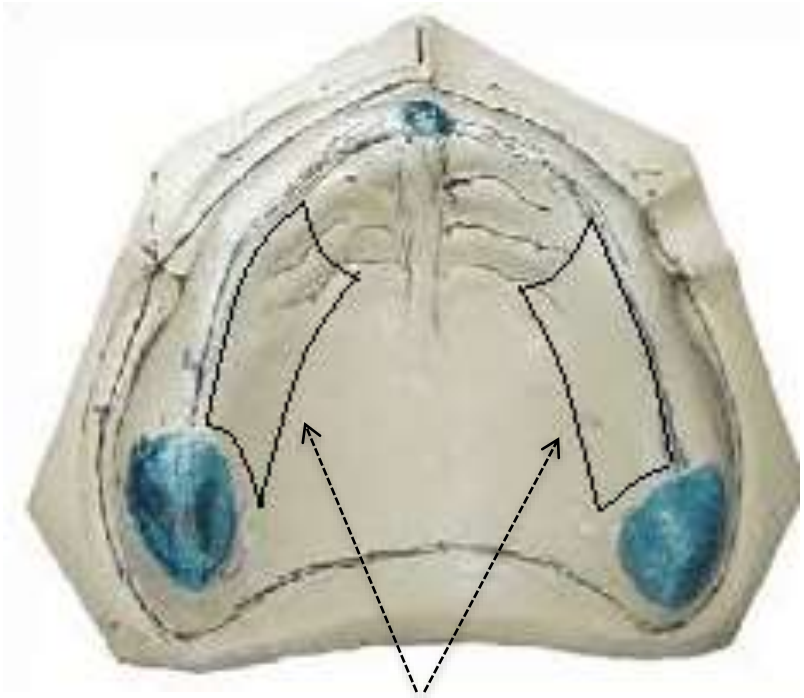
- PRIMARY STRESS BEARING AREAS :
  - HARD PALATE
  - POSTERO – LATERAL SLOPES OF RESIDUAL ALVEOLAR RIDGE

- SECONDARY STRESS BEARING AREAS :
  - RUGAE
  - MAXILLARY TUBEROSITY

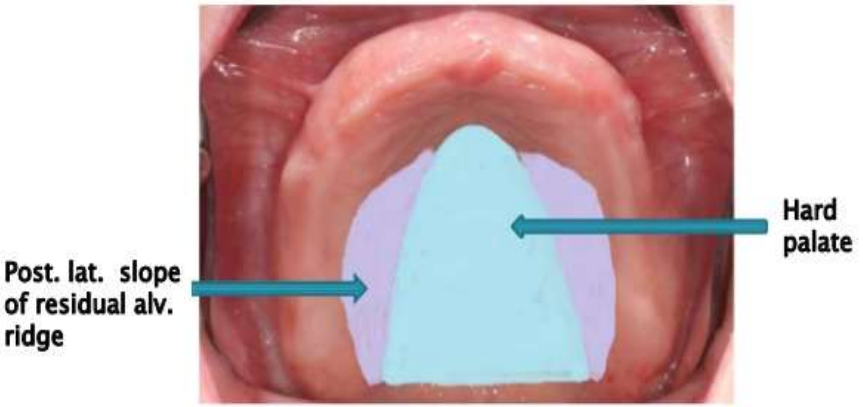
HARD PALATE

- Divided into anterior and posterior parts
- Posterior parts consists of glandular tissue which aids in retention but does not provide significant support for denture because of higher resiliency at this site
- Mucous glands in this region are relatively thick

POSTERIO – LATERAL SLOPES OF RESIDUAL ALVEOLAR RIDGE

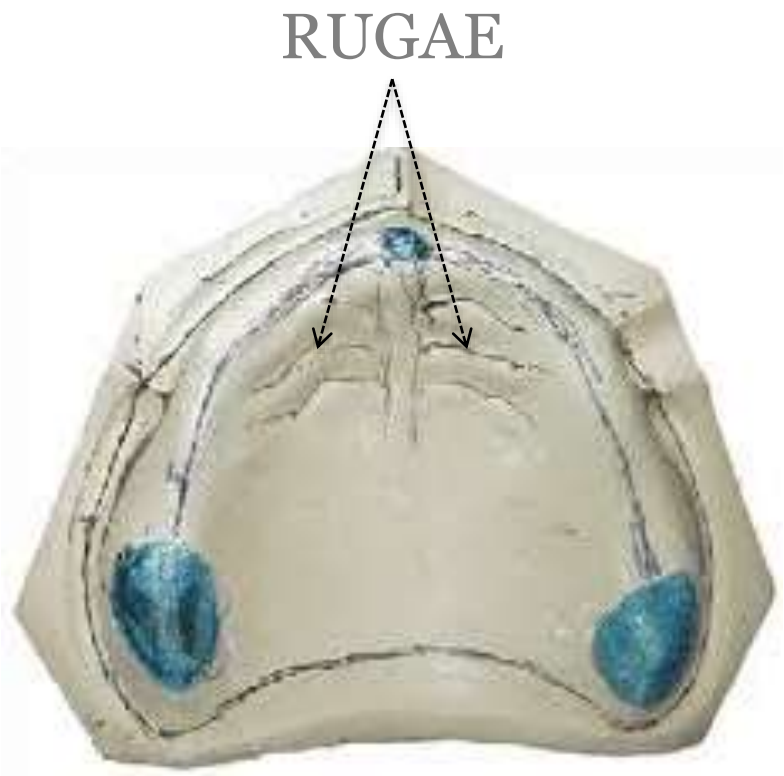


Posterior – lateral slopes of residual alveolar ridge



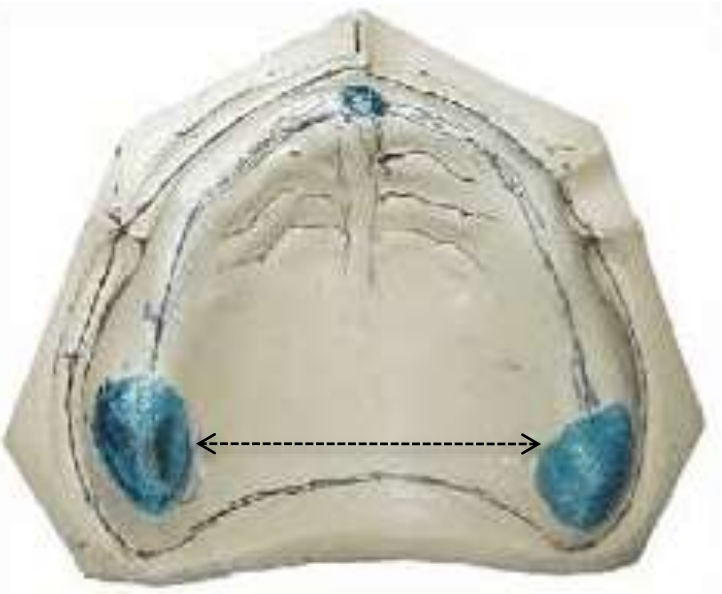
RUGAE

- Mucosal folds located in anterior region of palatal mucosa
- Acts as secondary support area
- Folds of mucosa play an important part in speech
- Metal denture bases reproduce this contour making it very comfortable for the patient



MAXILLARY TUBEROSITY

- Bulbous extension of residual ridge in the second and third molar region
- Posterior part of ridge and tuberosity areas are considered as one of the most important areas of support because they are least likely to resorb
- Rough prominence formed behind position of last tooth called the alveolar tubercle



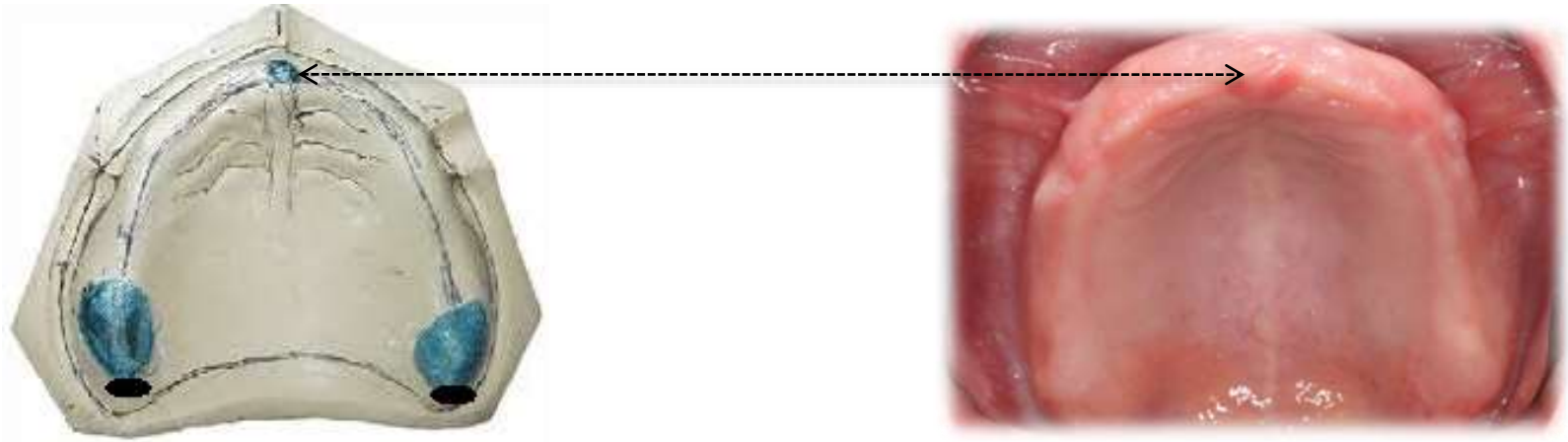
RELIEF AREAS OF MAXILLA

These areas resorb under constant load. Contain fragile structures within. Denture should be designed such a way that the masticatory load is not concentrated over these areas.

- INCISIVE PAPILLA
- MID – PALATINE RAPHE
- FOVEA PALATINAE
- CUSPID EMINENCE

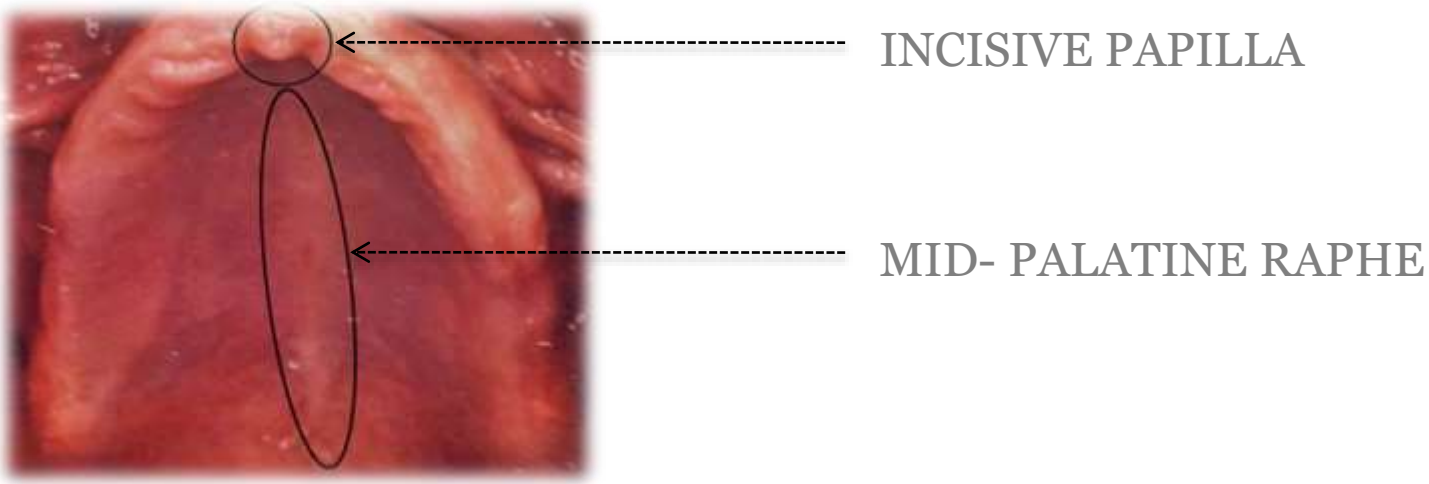
INCISIVE PAPILLA

- Mid – line structure situated behind the
- Exit point of nasopalatine nerves and sphenopalatine vessels
- It should be relieved. If not, denture will compress nerves and vessels, leading to necrosis of distributing areas and paraestesia of anterior palate



MID – PALATINE RAPHE

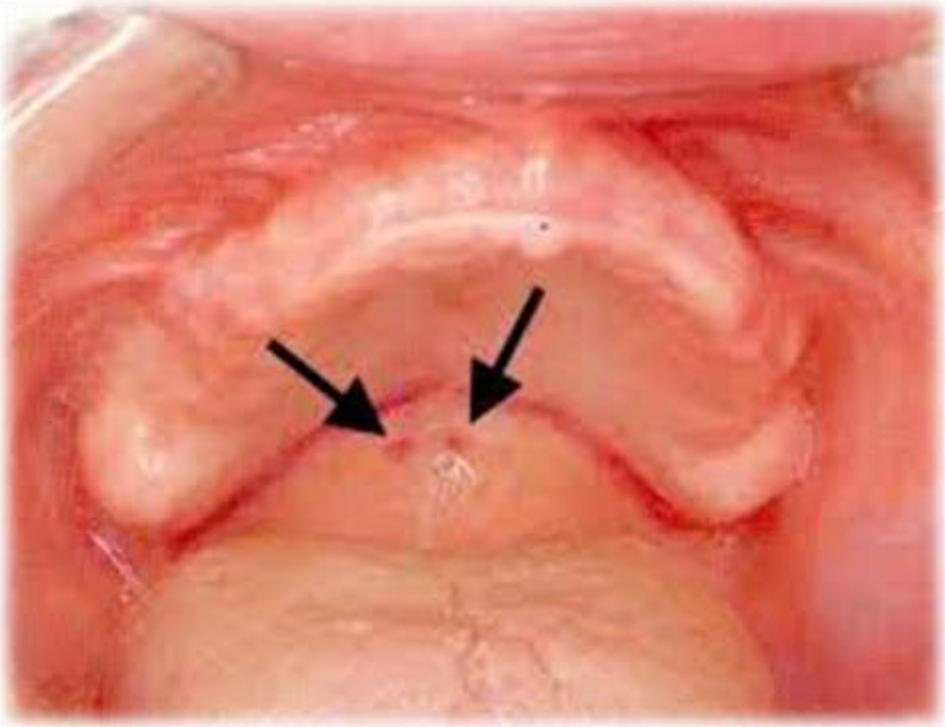
- Median suture areas covered by thin sub - mucosa
- Should be relieved during denture fabrication
- This area is most sensitive part to palate to pressure



FOVEA PALATINAE

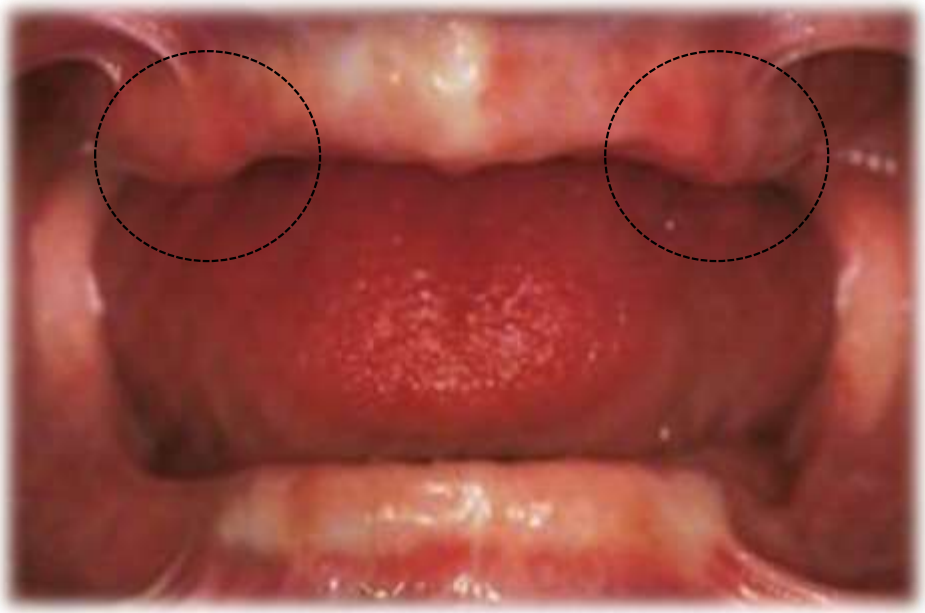
- Formed by coalescence of ducts of several mucous glands
- Acts as an arbitrary guide to locate posterior border of denture
- Denture can extend 1-2mm beyond the fovea palatinae
- Secretion of fovea spreads as a thin film on the denture thereby aiding in retention
- In patients with thick ropy saliva, fovea should be left uncovered or left uncovered or else thick saliva flowing between tissue and denture can increase hydrostatic pressure and displace the denture

FOVEA PALATINAE

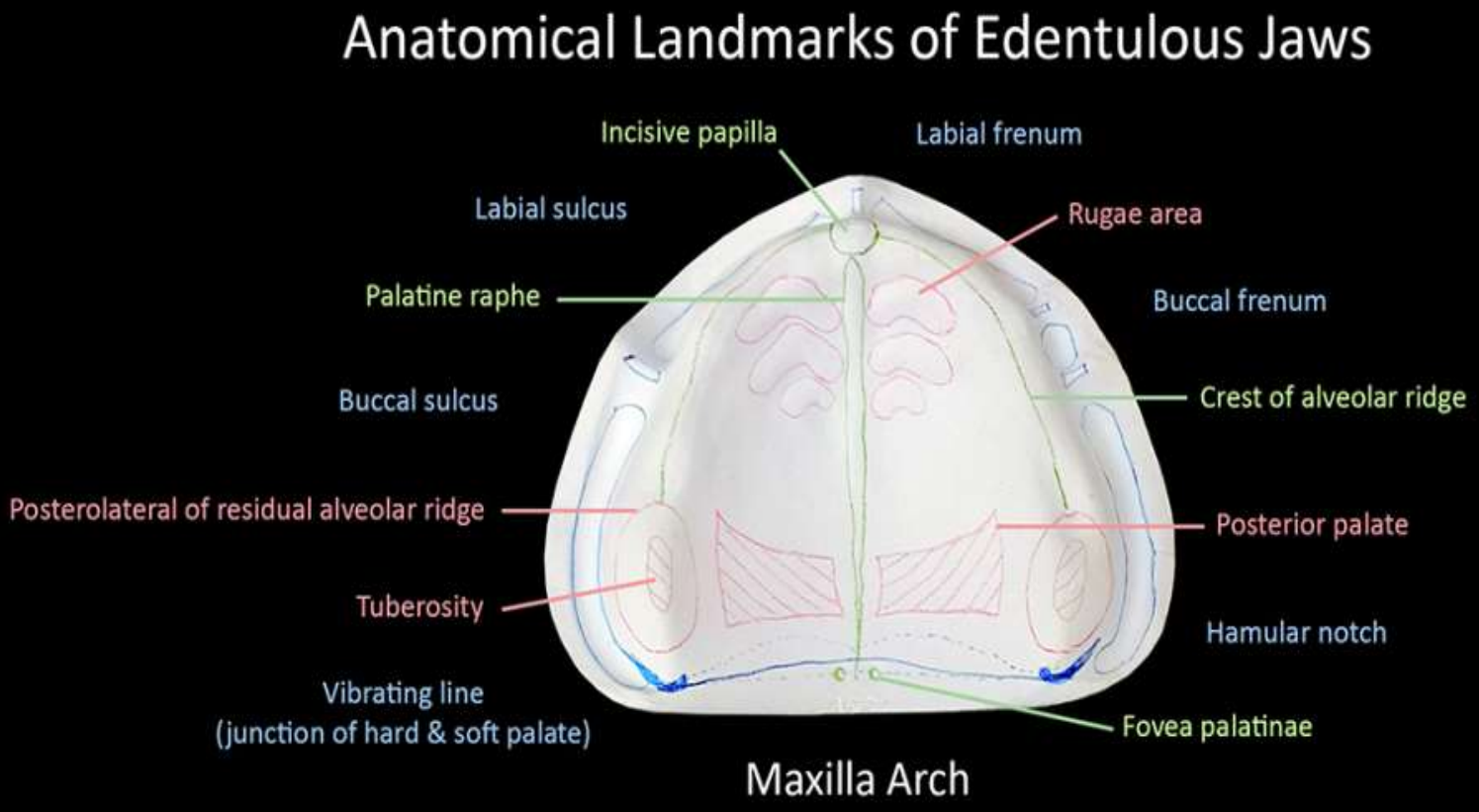


CUSPID EMINENCE

- Bony elevation on residual alveolar ridge formed after extraction of canine
- Located between canine and first premolar region



SUMMARY


Anatomical Landmarks of Edentulous Jaws
Incisive papilla
Labial frenum
Labial sulcus
Rugae area
Palatine raphe
Buccal frenum
Buccal sulcus
Crest of alveolar ridge
Posterolateral of residual alveolar ridge
Posterior palate
Tuberosity
Hamular notch
Vibrating line
(junction of hard & soft palate)
Fovea palatinae
Maxilla Arch


THANK YOU!