

PALATE

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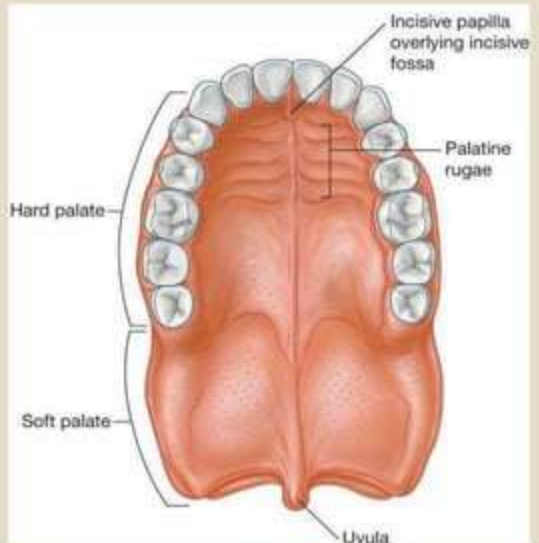
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INTRODUCTION:

Palate : roof of the oral cavity.

It has two parts

- an anterior **hard palate**
- a posterior **soft palate**



HARD PALATE

Separates the oral cavity from the nasal cavities

Consists of a bony plate covered above and below by mucosa

Above:

covered by respiratory mucosa
and forms floor of nasal cavity

Below:

covered by oral mucosa and
forms much of the roof of oral
cavity

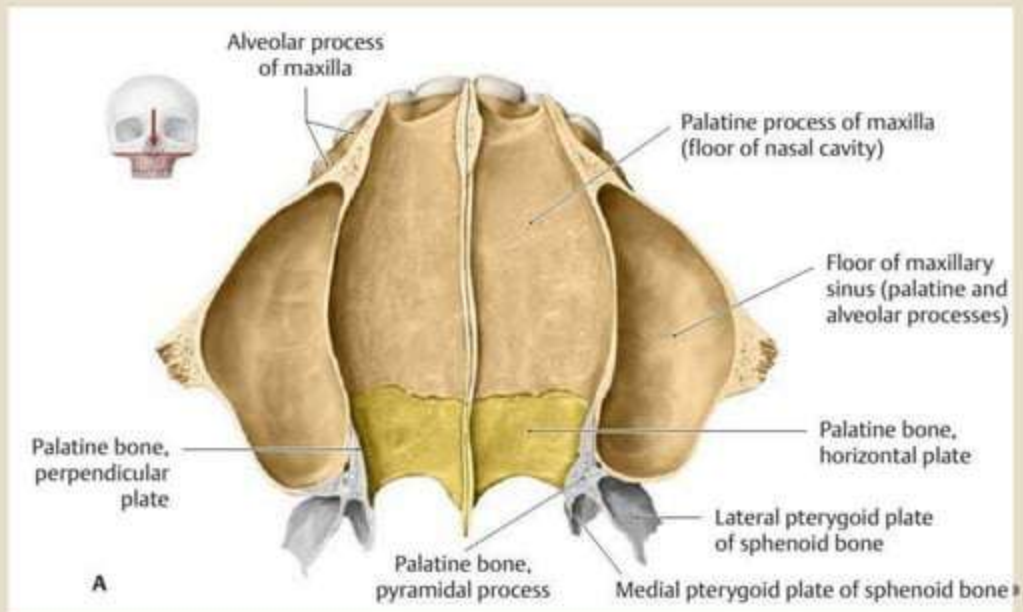


POSITION

- The anteriolateral margins of the palate are continuous with the *alveolar arches and gums*.
- The posterior margin gives attachment to the *soft palate*.
- The superior surface forms the *floor of the nose*.
- The inferior surface forms the roof of the *oral cavity*

OSTEOLOGY:

- Palatine processes of the maxillae form the anterior 3/4 of the hard palate
- Horizontal plates of the palatine bones form the posterior 1/4



SUTURE:

- INTERMAXILLARY SUTURE
- INTERPALATINE SUTURE
- PALATOMAXILLARY SUTURE

INCISIVE CANAL:

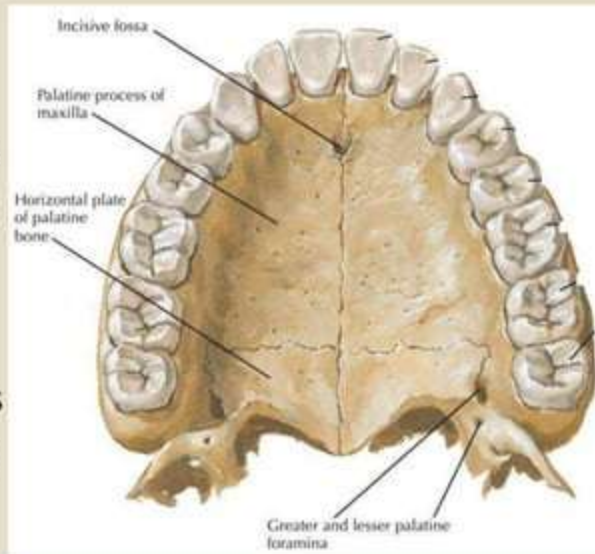
CONTENTS: Greater palatine vessels
Nasopalatine nerve
(terminal part)

GREATER PALATINE FORAMEN:

CONTENTS: Greater palatine vessels
Anterior palatine nerve

LESSER PALATINE FORAMEN:

CONTENTS: Middle and Posterior
palatine nerves



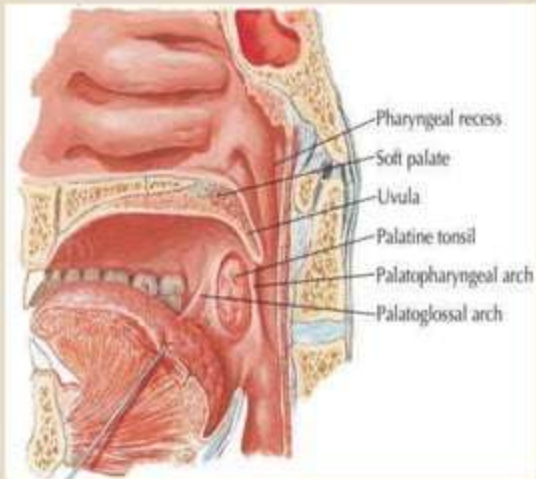
SOFT PALATE

Movable, muscular fold, suspended from the posterior border of the hard palate.

It separates the nasopharynx from the oropharynx.

Acts as a valve that can be:

- **depressed to help close the oropharyngeal isthmus;**
- **elevated to separate the nasopharynx from the oropharynx.**



MUSCLES OF SOFT PALATE

- Tensor velipalatini
- Levator velipalatini
- Musculus uvulae
- Palato pharyngeus
- Palato glossus

TENSOR VELI PALATINI

ORIGIN:

- Lateral side of auditory tube
- Scaphoid fossa of sphenoid bone

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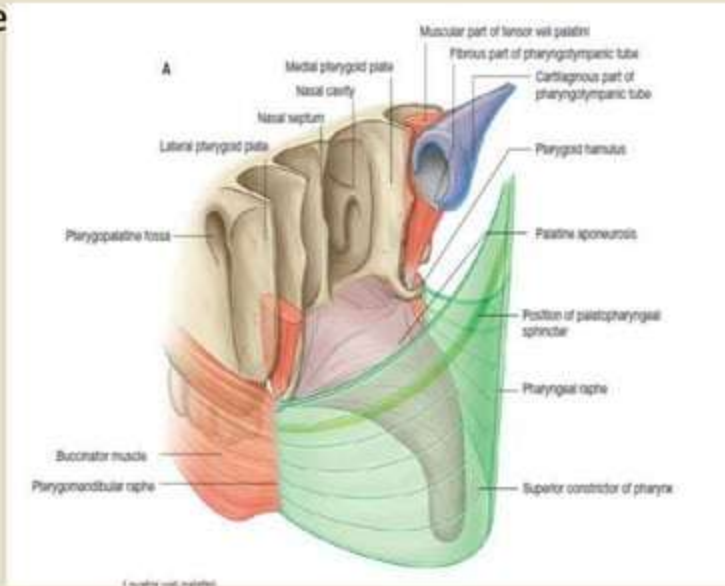
- Palatine aponeurosis

NERVE SUPPLY:

- Mandibular nerve via br to medial pterygoid muscle

ACTION:

- Tightens the soft palate
- Opens the auditory tube



LEVATOR VELI PALATINI

ORIGIN:

- Petrous temporal bone
- Inferior aspect of auditory tube

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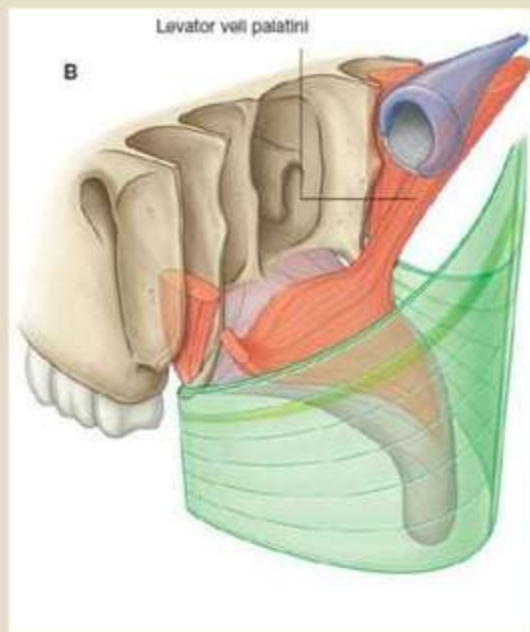
- Upper surface of palatine aponeurosis

NERVE SUPPLY:

- Vagus N via pharyngeal plexus

ACTION:

- Elevates the soft palate



MUSCULUS UVULAE

ORIGIN:

- Posterior nasal spine of hard palate

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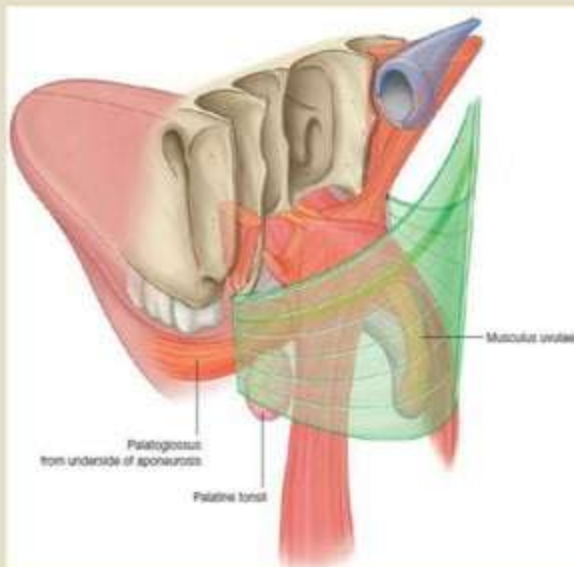
- Connective tissue of uvula

NERVE SUPPLY:

- Vagus N via pharyngeal plexus

ACTION:

- Elevates and retracts uvula
- thickens central region of soft palate



PALATOGLOSSUS

ORIGIN:

- Inferior surface of palatine aponeurosis

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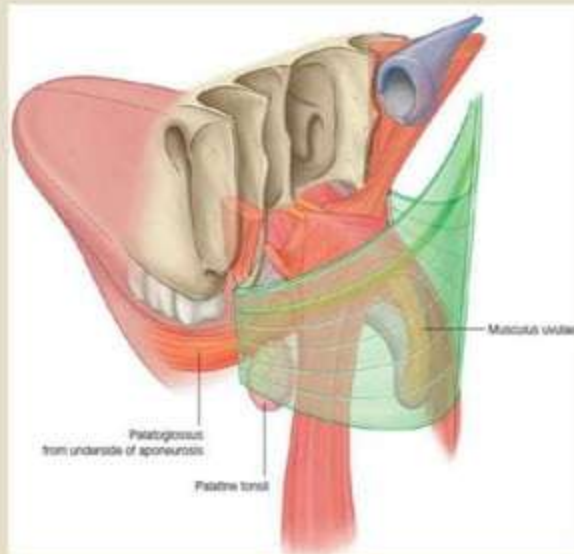
- Lateral margin of tongue

NERVE SUPPLY:

- Vagus N via pharyngeal plexus

ACTION:

- Depresses palate
- Moves palatoglossal arch toward midline
- elevates back of the tongue



PALATOPHARYNGEUS

ORIGIN:

- Superior surface of palatine aponeurosis

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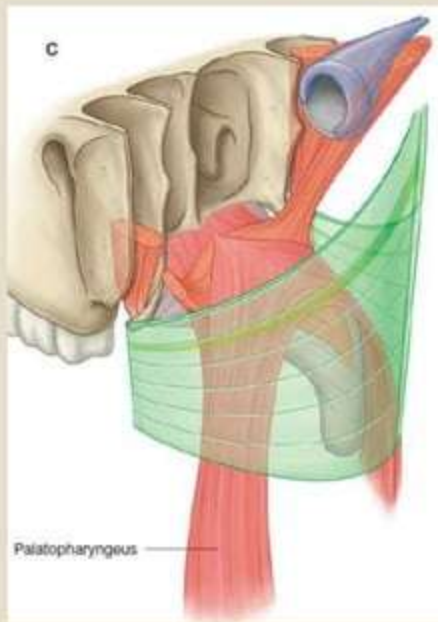
- Pharyngeal wall

NERVE SUPPLY:

- Vagus N via pharyngeal plexus

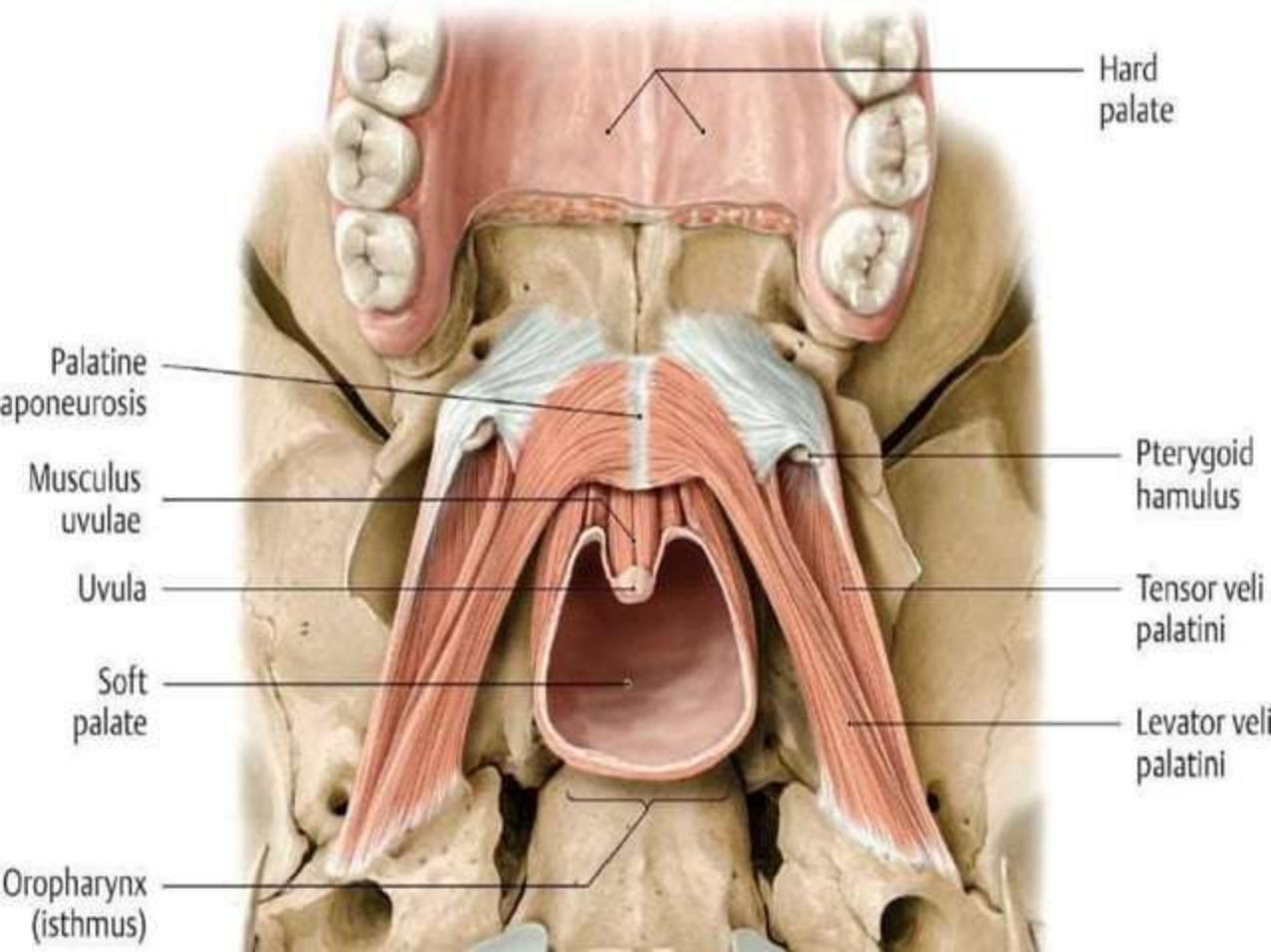
ACTION:

- Depresses soft palate
- moves palatopharyngeal arch toward midline
- elevates pharynx



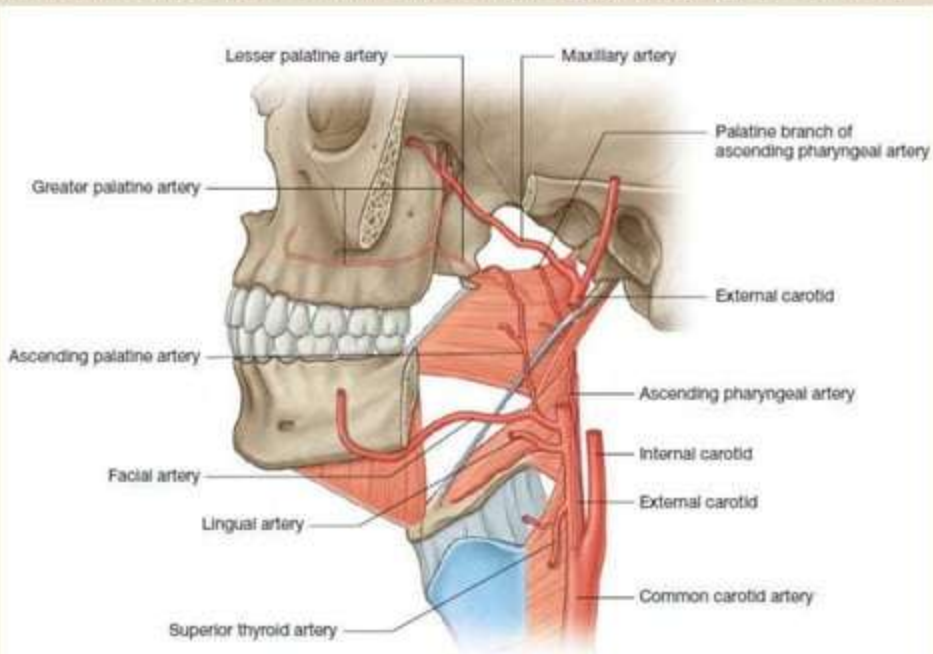
PASSAVANT'S RIDGE

- Some of the upper fibres of the palatopharyngeus passes circularly deep to mucous membrane of the pharynx
- Forms a sphincter internal to the superior constrictor
- This constitute the passavant's muscle
- On contraction raises a ridge called passavant's ridge
- Best developed in cleft palate cases



BLOOD SUPPLY

- Greater palatine branch of the maxillary artery
- Ascending palatine branch of the facial artery
- Palatine branch of the Ascending pharyngeal artery

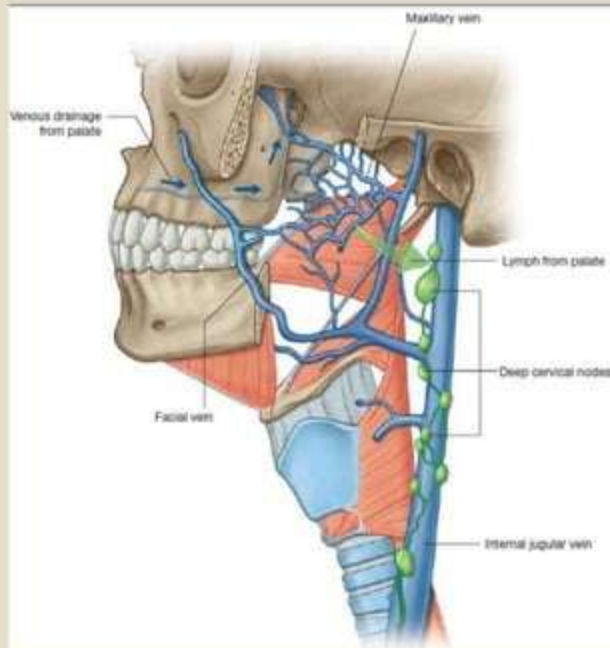


VEINS:

- Pterygoid plexuses
- tonsillar plexuses of veins.

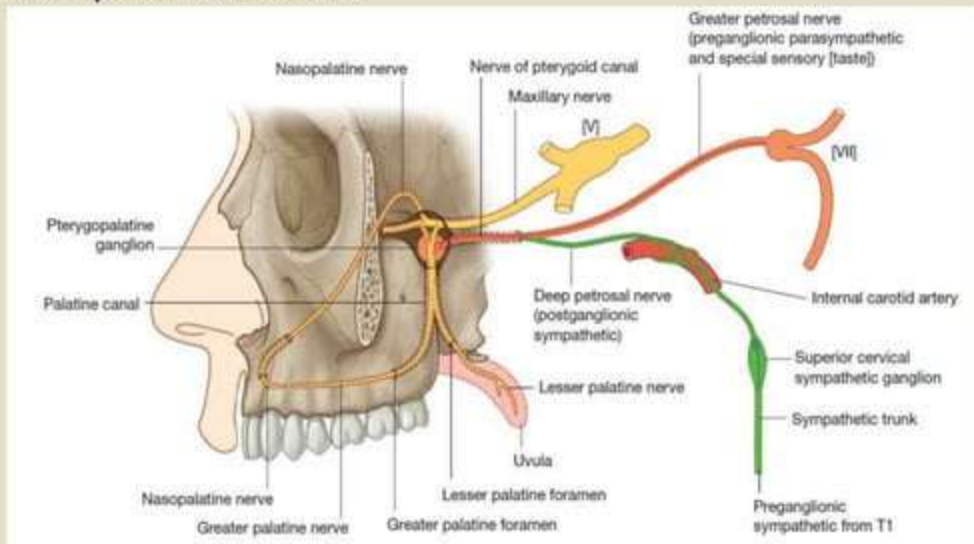
LYMPHATICS:

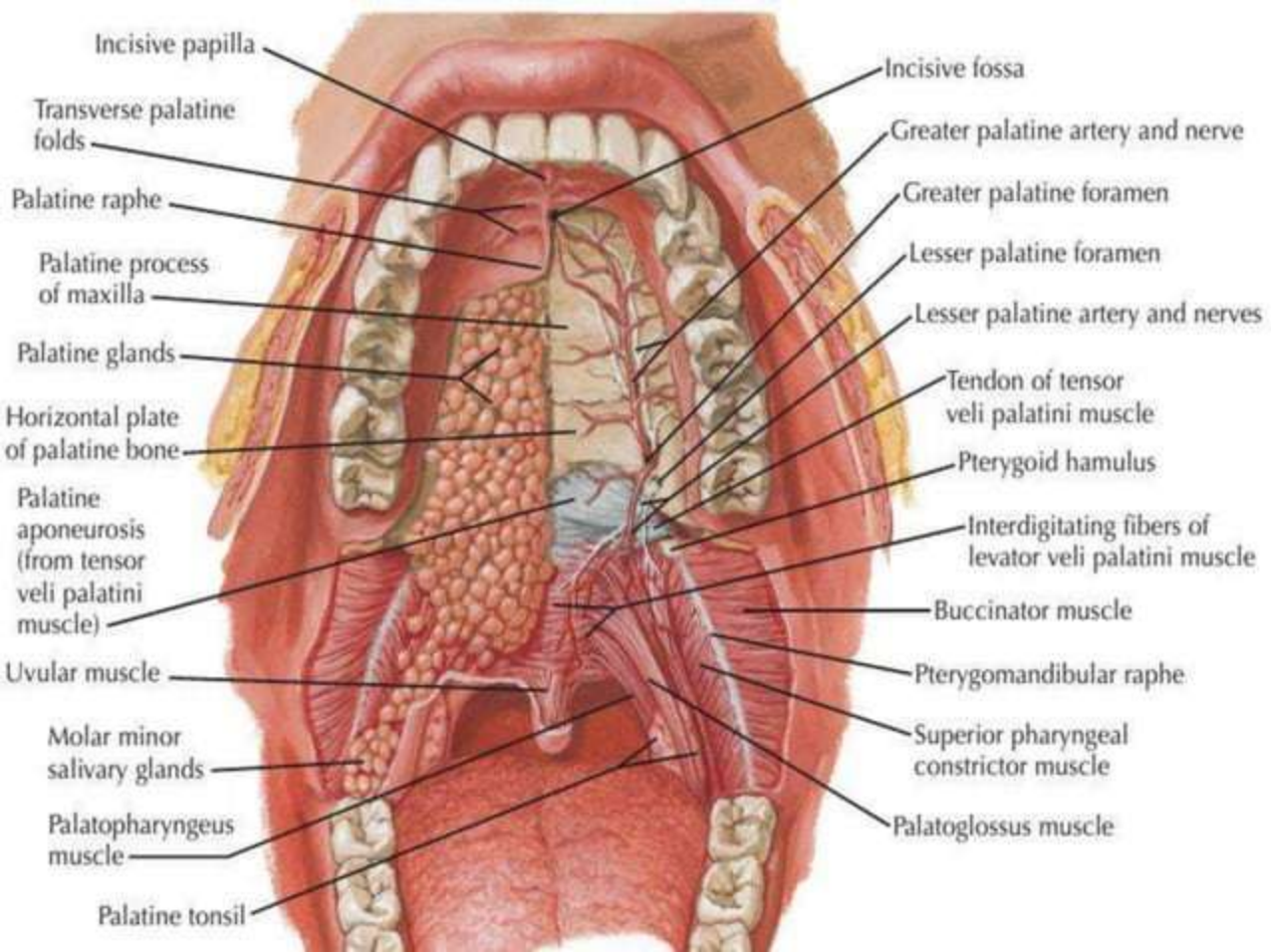
- Upper deep cervical
- retropharyngeal lymph nodes.



NERVE SUPPLY

- Supplied by the **greater and lesser palatine nerves and the nasopalatine nerve**
- General sensory fibers carried in all these nerves originate in the pterygopalatine fossa from the maxillary nerve
- Special sensory and scretomotor nerves are contained in lesser palatine nerves.





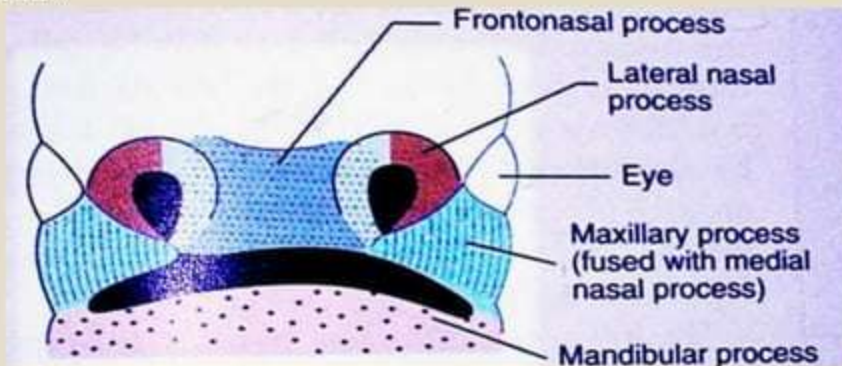
DEVELOPMENT OF PALATE

develops as two parts

- The Primary Palate
- The Secondary Palate

Development Of The Primary Palate :

Fusion of the two medial nasal processes with the fronto nasal process results in the formation of primary palate.



Development of Secondary Palate:

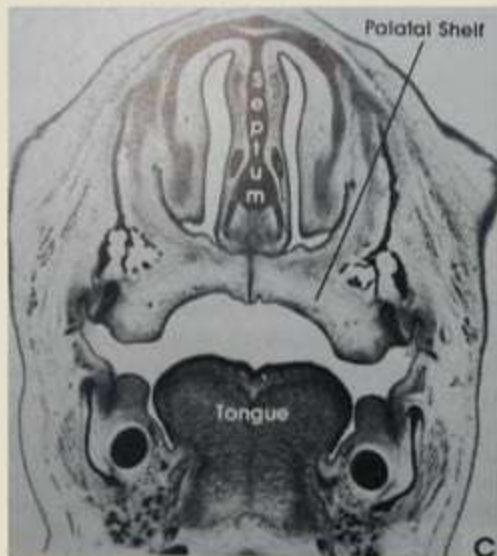
The formation of secondary palate commences between 7 and 8 weeks and completes around the 3rd month of the gestation.

Three outgrowth appear in the oral cavity

- The two palatal process
- The nasal septum



- Each palatal process grows downwards first then upwards after the withdrawal of tongue(7th week)
- septum and the two shelves converges and fuse in the midline
- The closure of the secondary palate proceeds gradually from the primary palate in a posterior direction.



CLINICAL CONSIDERATIONS

CLEFT PALATE:

Congenital birth defect

Defective fusion of the various components of palate gives rise to cleft in palate



Cleft of palate occurs in number of ways:

- **Defective growth of palatal shelves**
- **Delayed or total failure of shelves to elevate and attain a horizontal position**
- **Lack of contact between shelves**
- **Post fusion rupture of shelves**





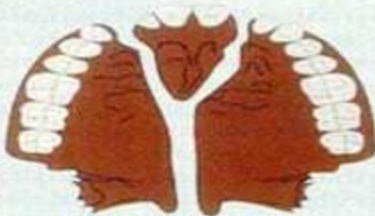
Cleft uvula



Incomplete cleft palate



Unilateral cleft palate
and cleft lip



Bilateral cleft palate
and cleft lip

Problems associated with cleft palate

- Dental problems
- Aesthetic problems
- Hearing and speech problems
- Psychological problems



Dental problems

- Congenitally missing teeth(mostly upper lateral incisors)
- Presence of supernumerary, neonatal and natal teeth
- Ectopically erupted tooth
- Enamel hypoplasia
- Microdontia, macrodontia
- Fused teeth
- Gemination, dilaceration
- Tendency towards class III skeletal pattern
- Posterior and anterior cross bite
- Deep bite
- Spacing/ crowding
- Protruding premaxilla

TORUS PALATINUS

- Localized nodular enlargement (exostosis) of the cortical bone
- Usually – midline of the palate
- Pose a mechanical problem in the construction of denture



INFLAMMATORY PAPILLARY HYPERPLASIA

- Common lesion that develops on the central hard palate
- in response to chronic denture irritation



SMOKER'S PALATE

- Nicotine stomatitis
- An erythematous irritation is initially seen, followed by a whitish palatal mucosa reflecting a hyperkeratosis
- Red dots representing orifices of accessory salivary glands seen



HIGH ARCHED PALATE

- Developmental feature that may occur in isolation or in association with a number of conditions
- Acquired condition caused by chronic thumb sucking
- High arched palate may cause narrowed airway and sleep disordered breathing
- Pose difficulty in the construction of denture



REFERENCE

- Grays anatomy for students 2nd edition
- B D Chaurasia's human anatomy 5th edition
- Human emnryology – inderbir singh 5th edition
- Burket's oral medicine 11th edition
- Orban' s oral histology and embryology