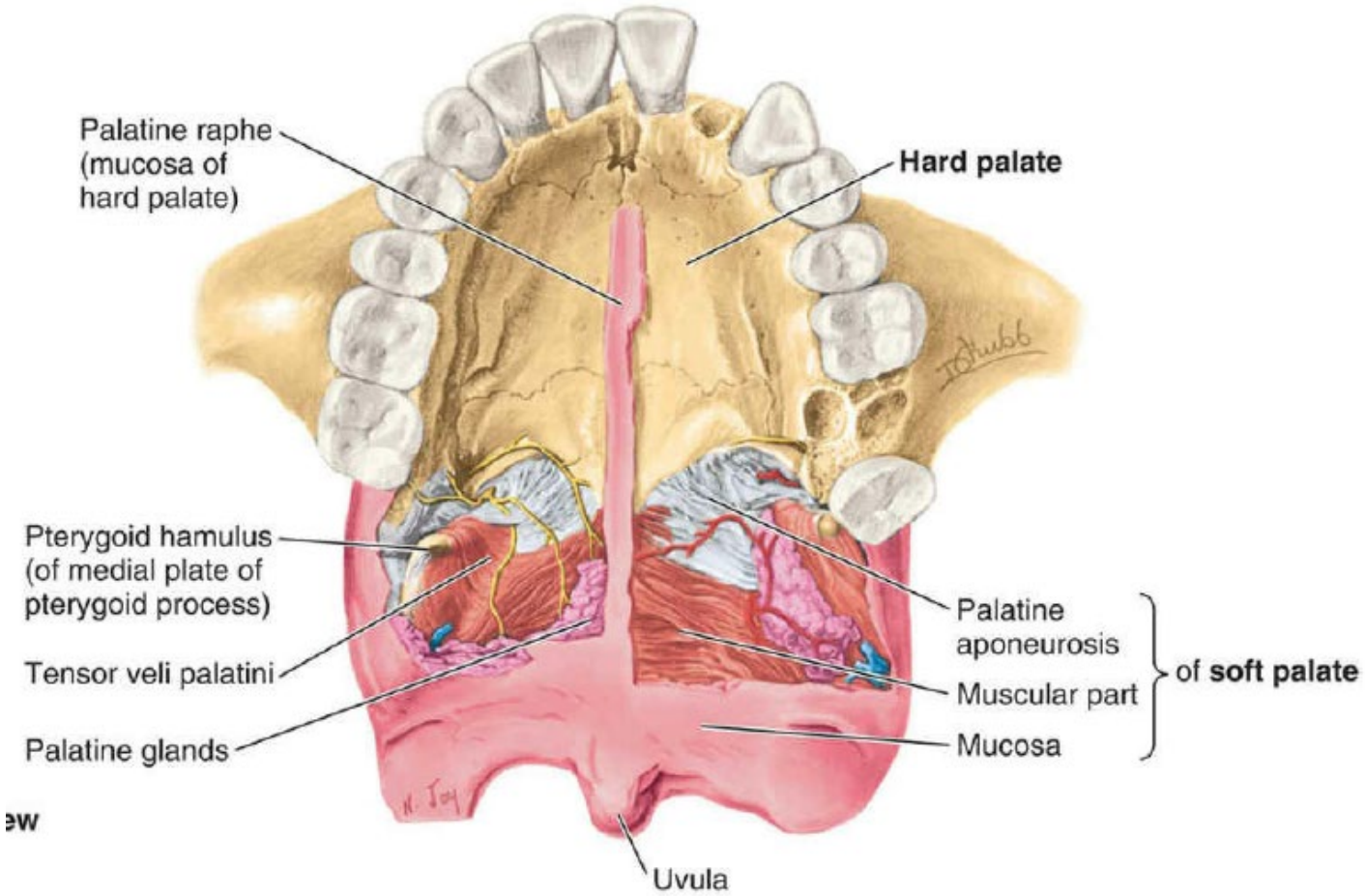
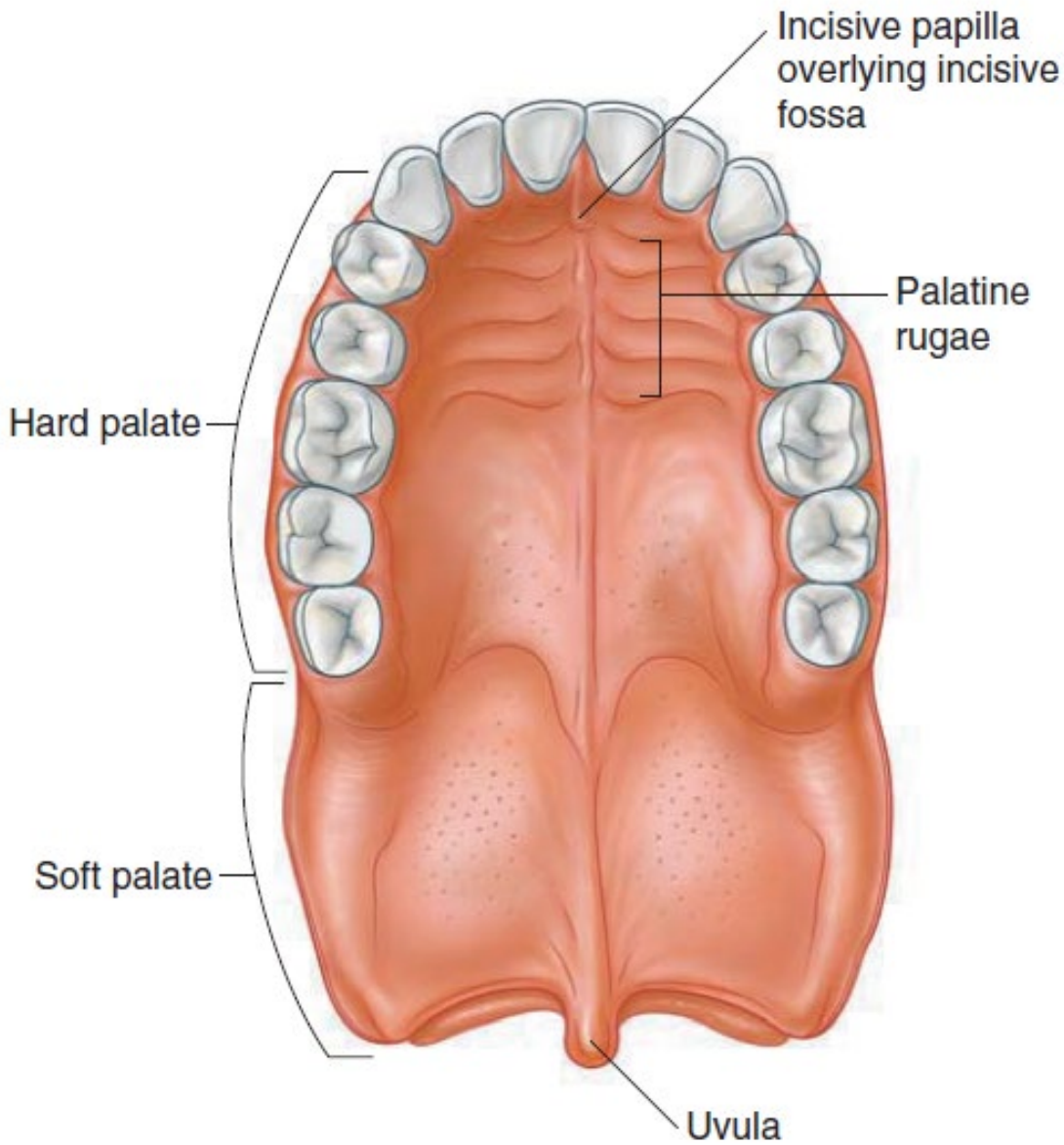
ORAL CAVITY – Part 2

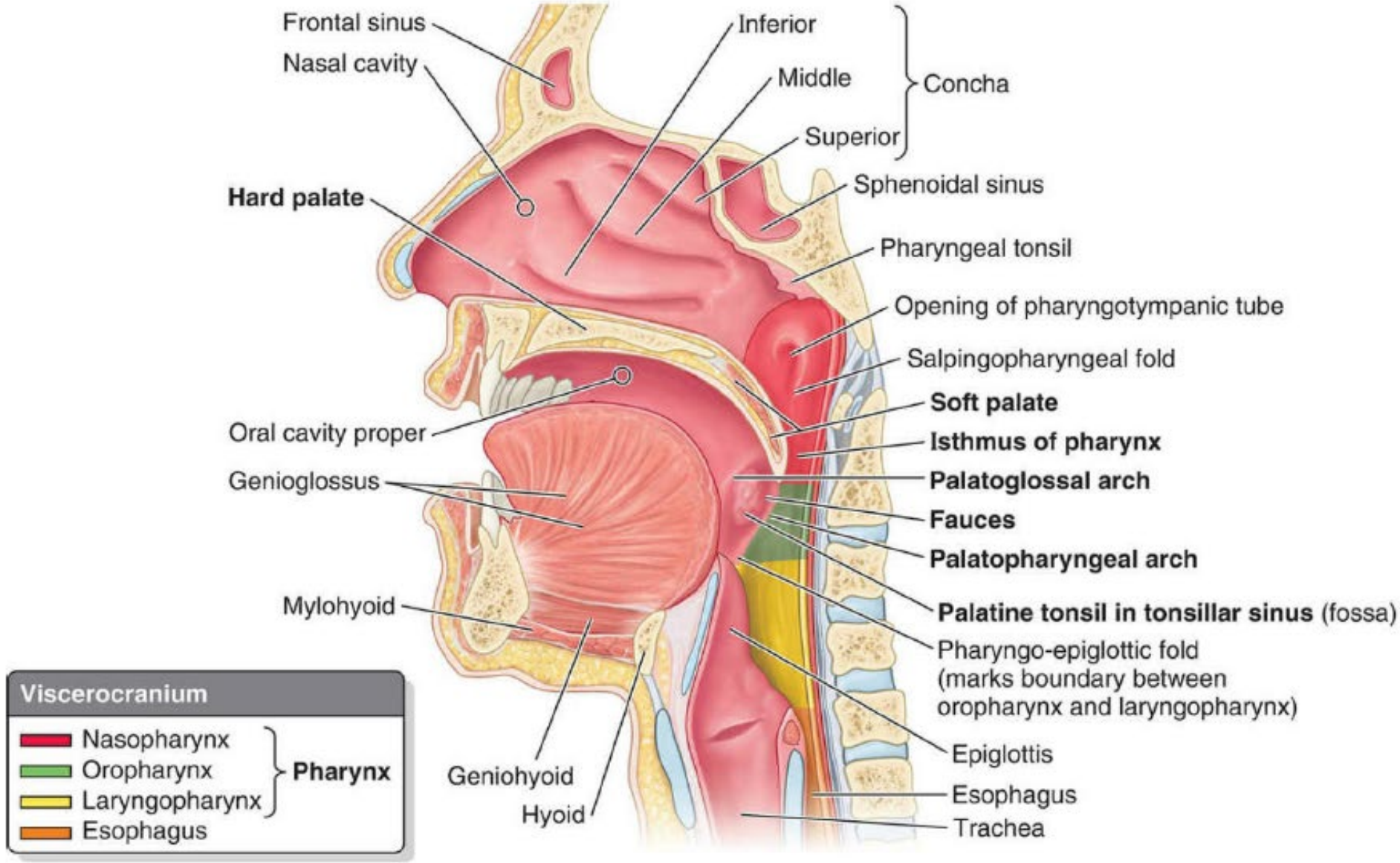
Department of human anatomy – mucom 2019

Objectives

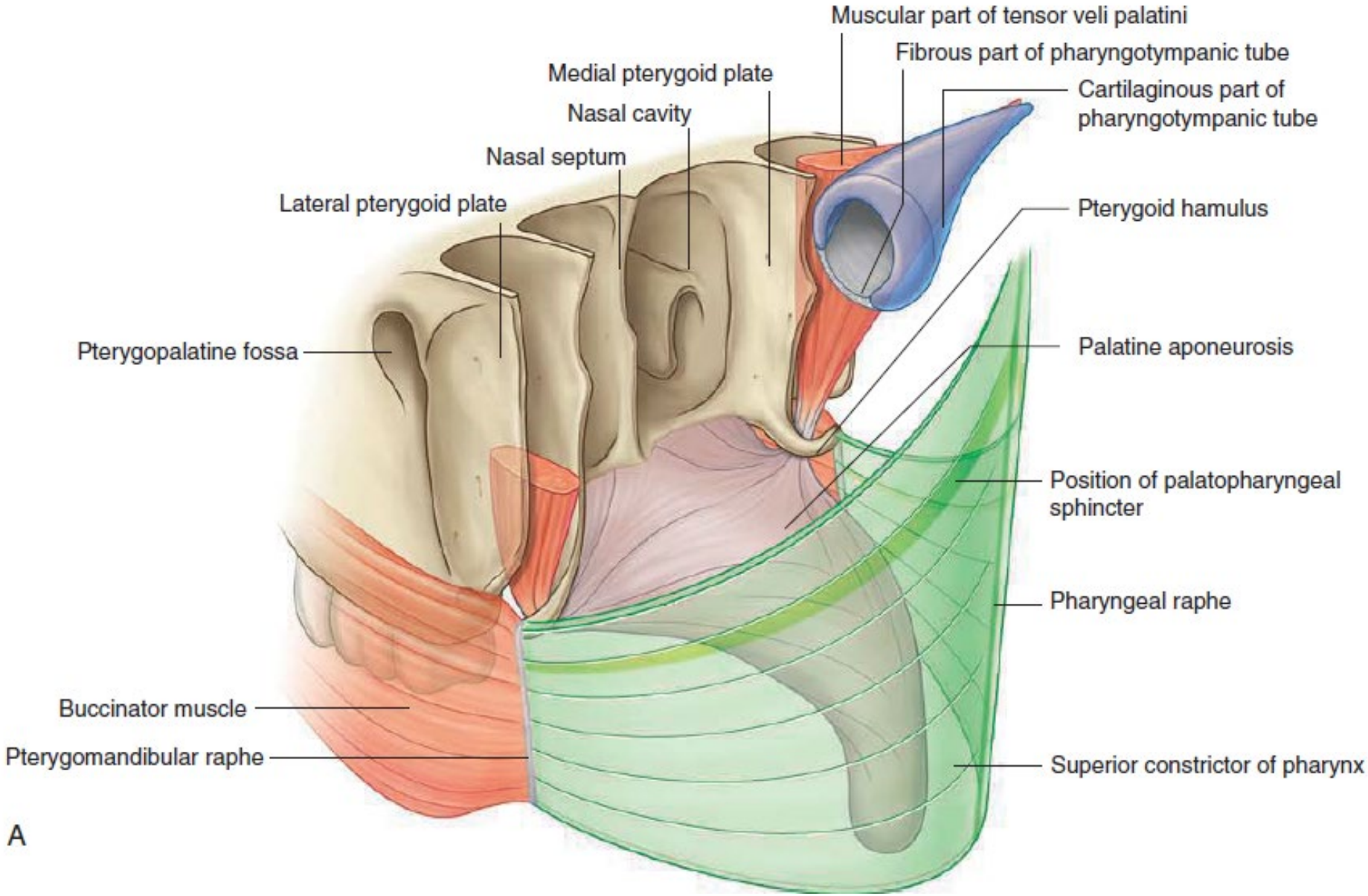
- Learn about anatomical features of hard and soft palate, including forming bones and muscles, blood supply and innervation.
- Understand the main features of the oral fissure and lips.
- Know the components and function of oropharyngeal isthmus.
- Know the general anatomical features of teeth and gingiva.

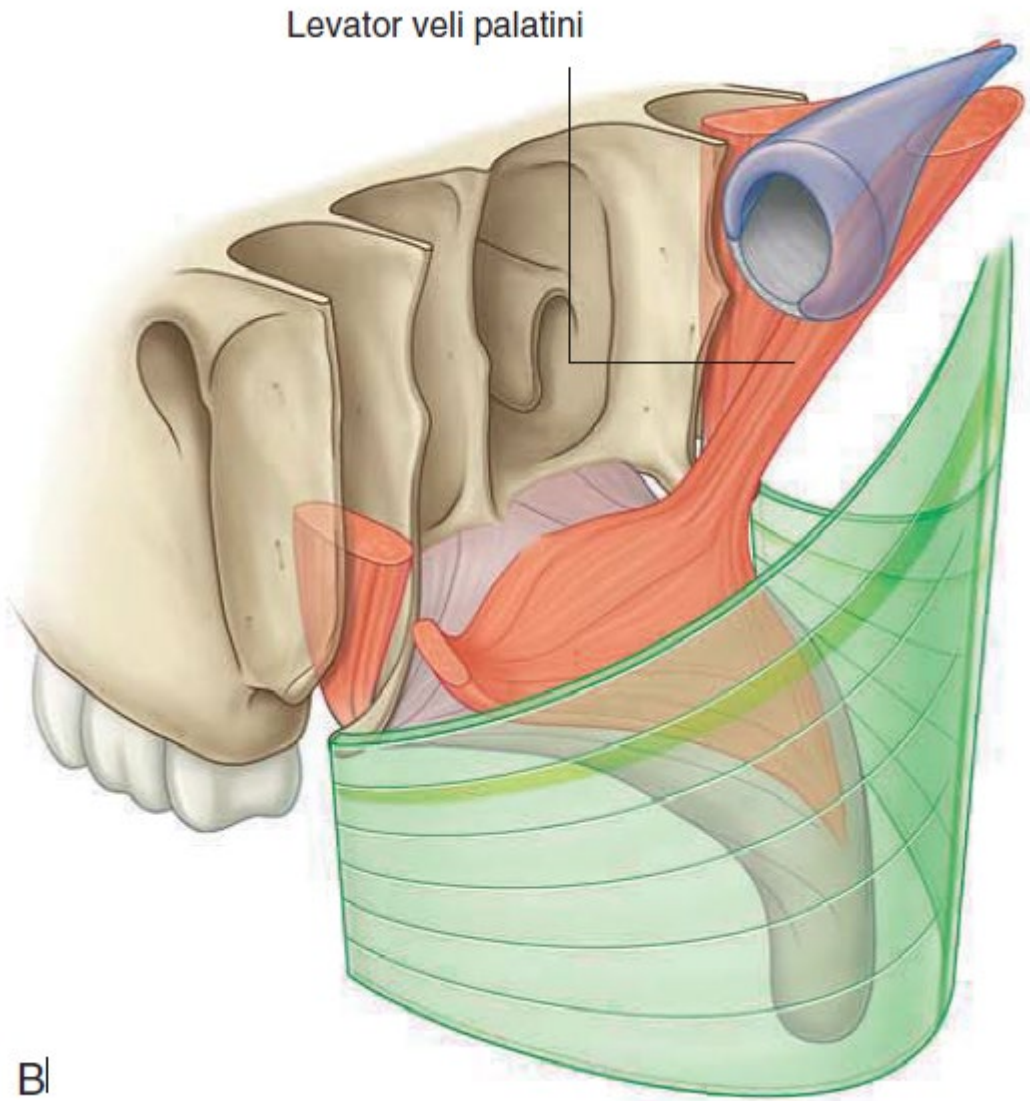

Palatine raphe
(mucosa of
hard palate)
Hard palate
Pterygoid hamulus
(of medial plate of
pterygoid process)
Tensor veli palatini
Palatine glands
Palatine
aponeurosis
Muscular part
Mucosa
of soft palate
Uvula

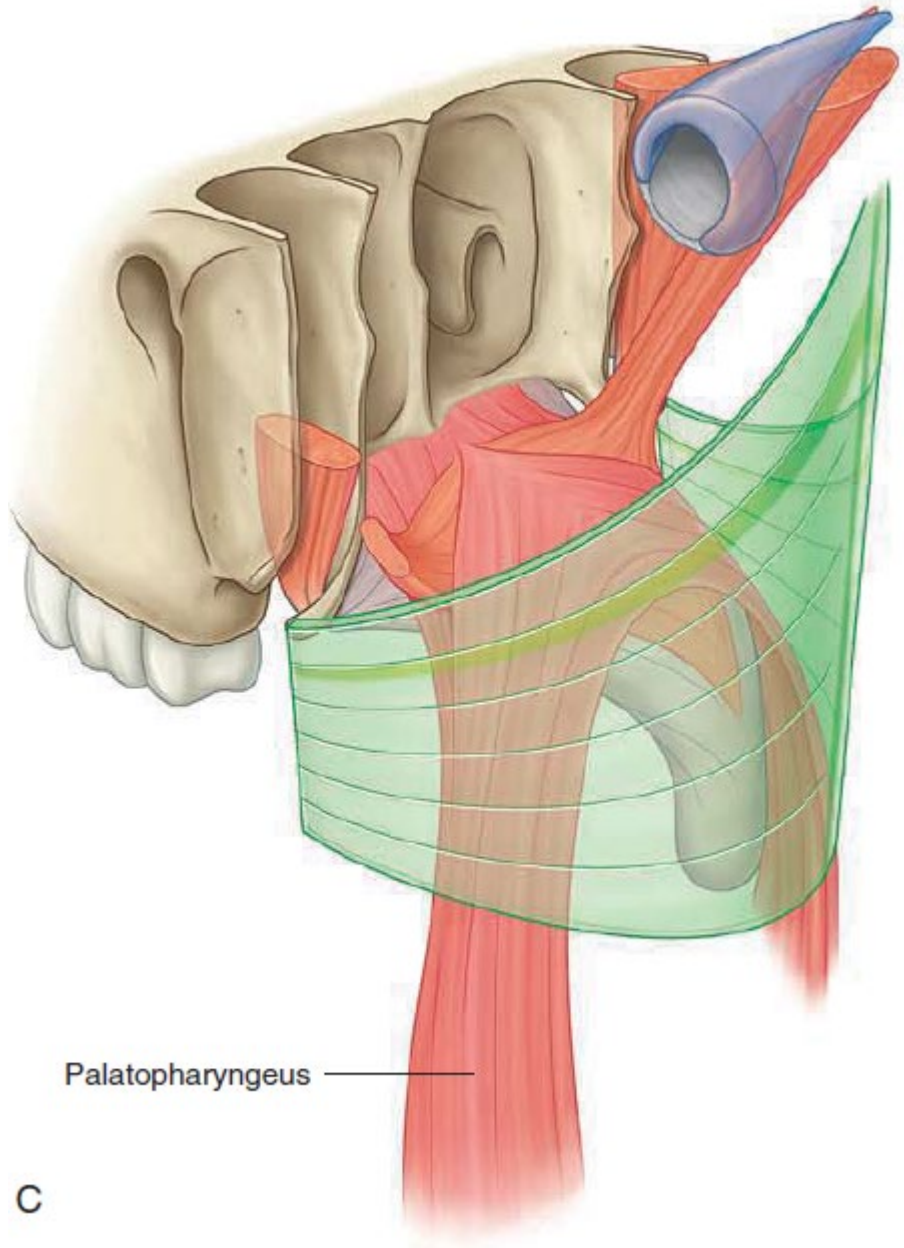

Incisive papilla
overlying incisive
fossa
Palatine
rugae
Hard palate
Soft palate
Uvula

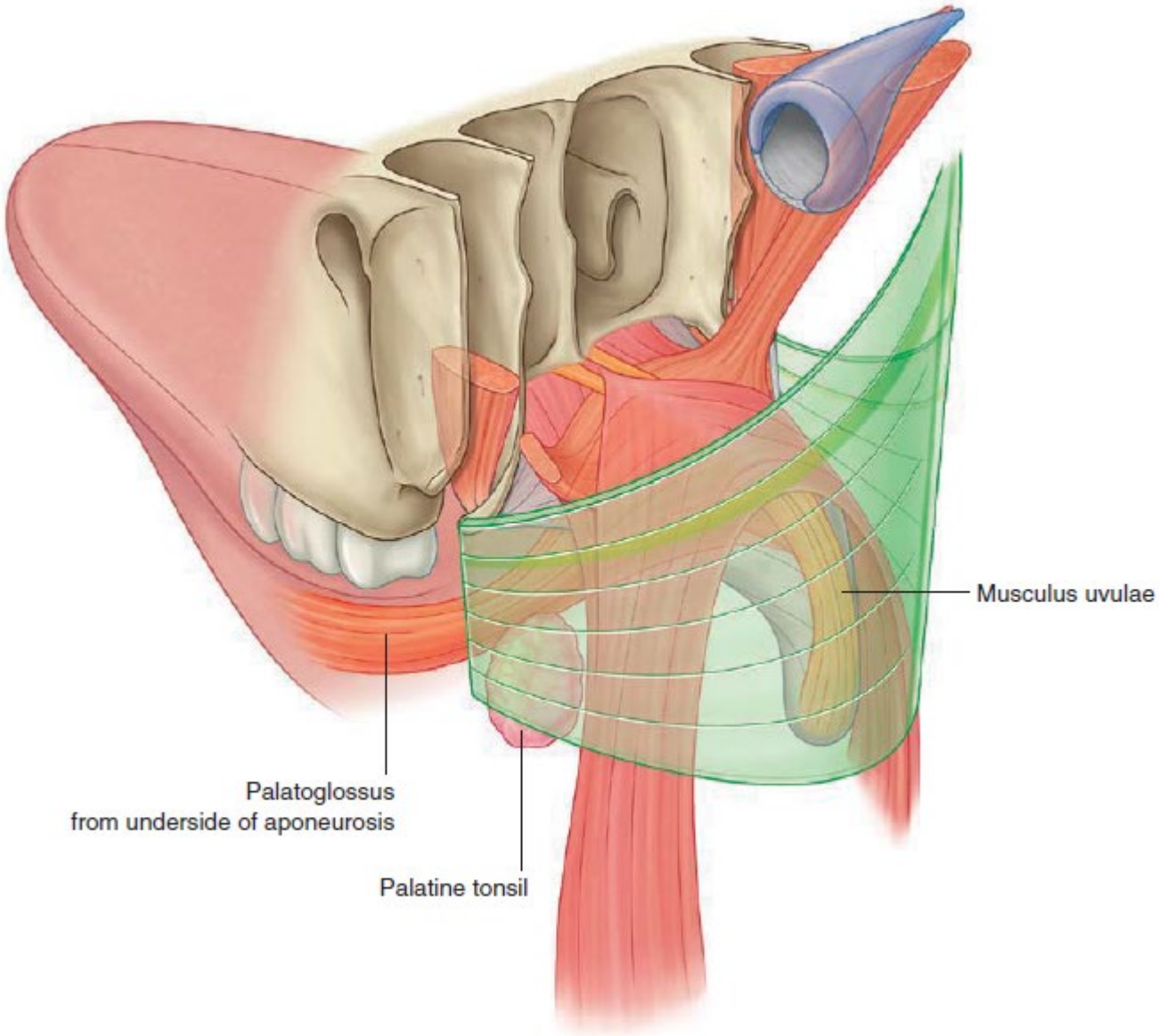


Medial view of right half of viscerocranium


Muscular part of tensor veli palatini
Fibrous part of pharyngotympanic tube
Medial pterygoid plate
Cartilaginous part of pharyngotympanic tube
Nasal cavity
Nasal septum
Lateral pterygoid plate
Pterygoid hamulus
Pterygopalatine fossa
Palatine aponeurosis
Position of palatopharyngeal sphincter
Pharyngeal raphe
Buccinator muscle
Pterygomandibular raphe
Superior constrictor of pharynx
A


Levator veli palatini
B


Palatopharyngeus
C


Musculus uvulae
Palatoglossus
from underside of aponeurosis
Palatine tonsil

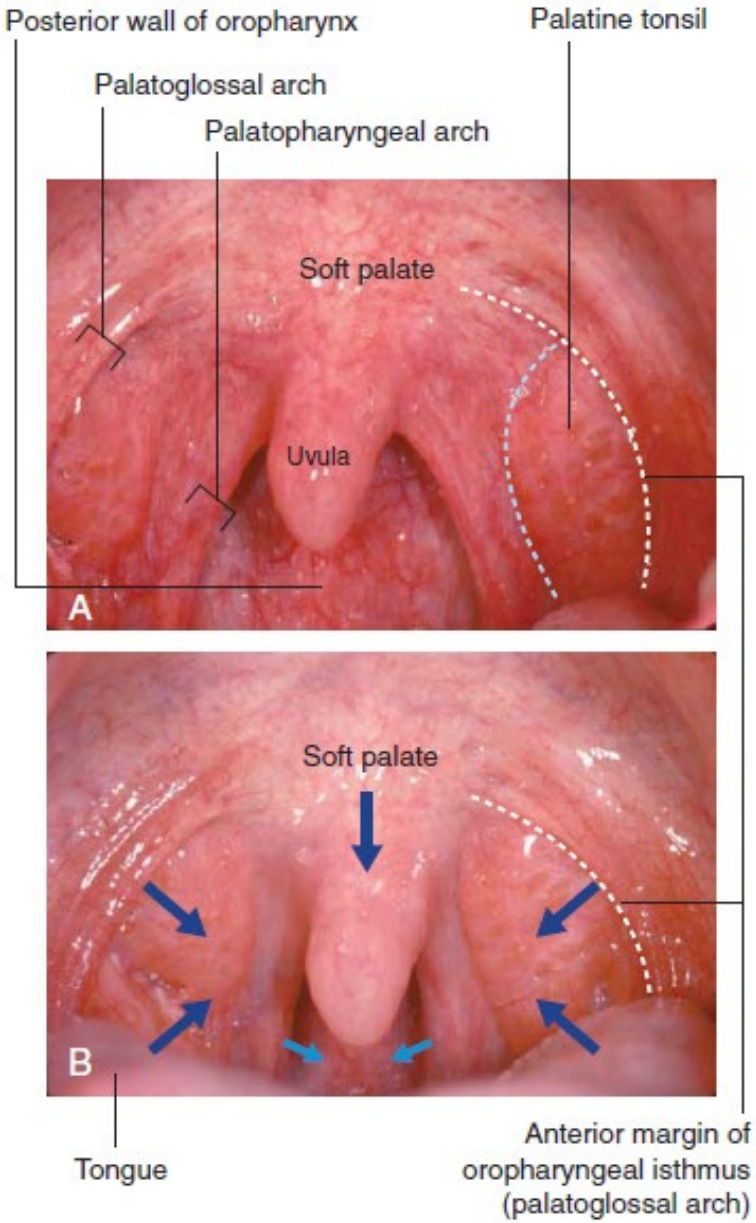
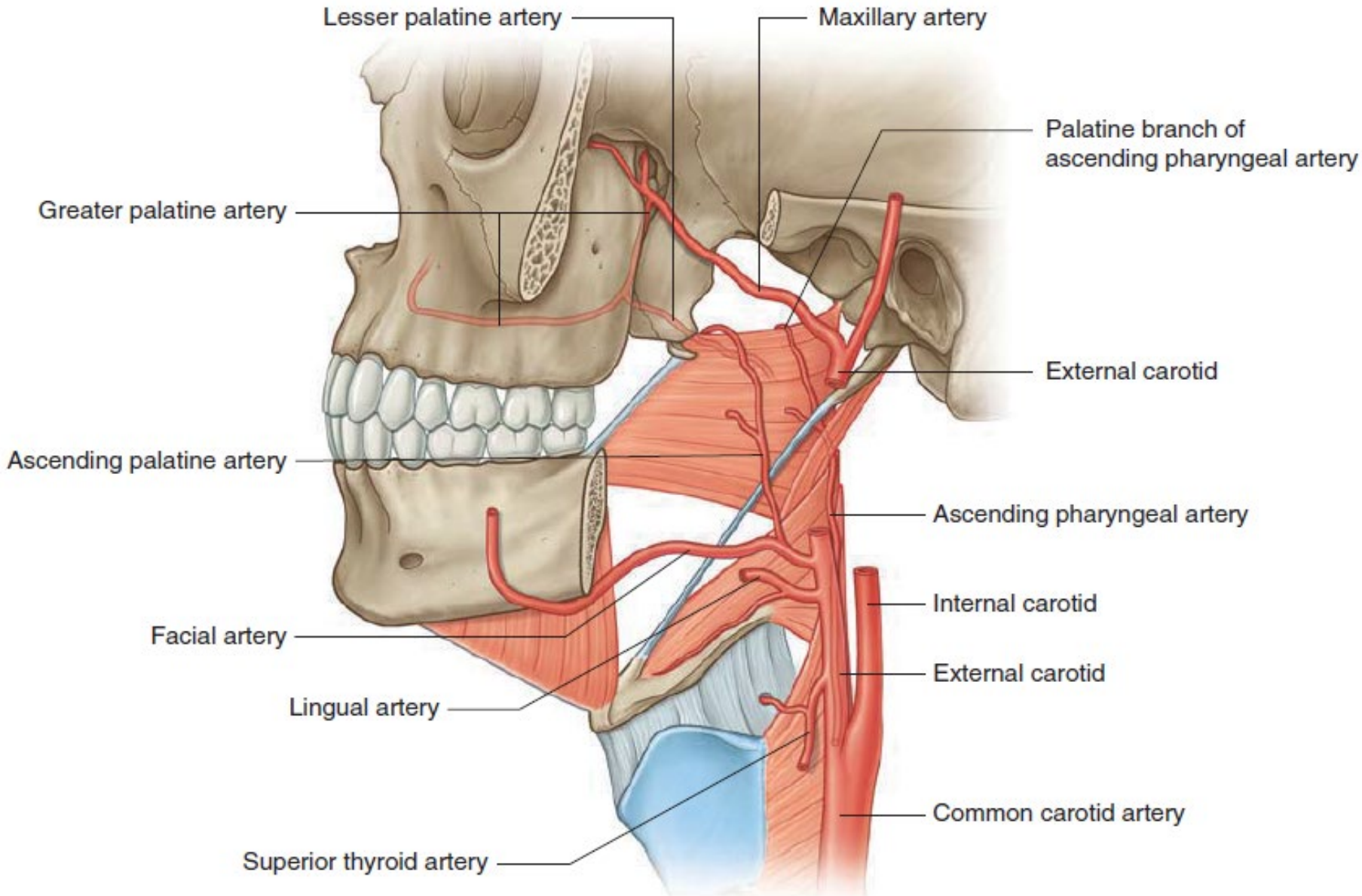
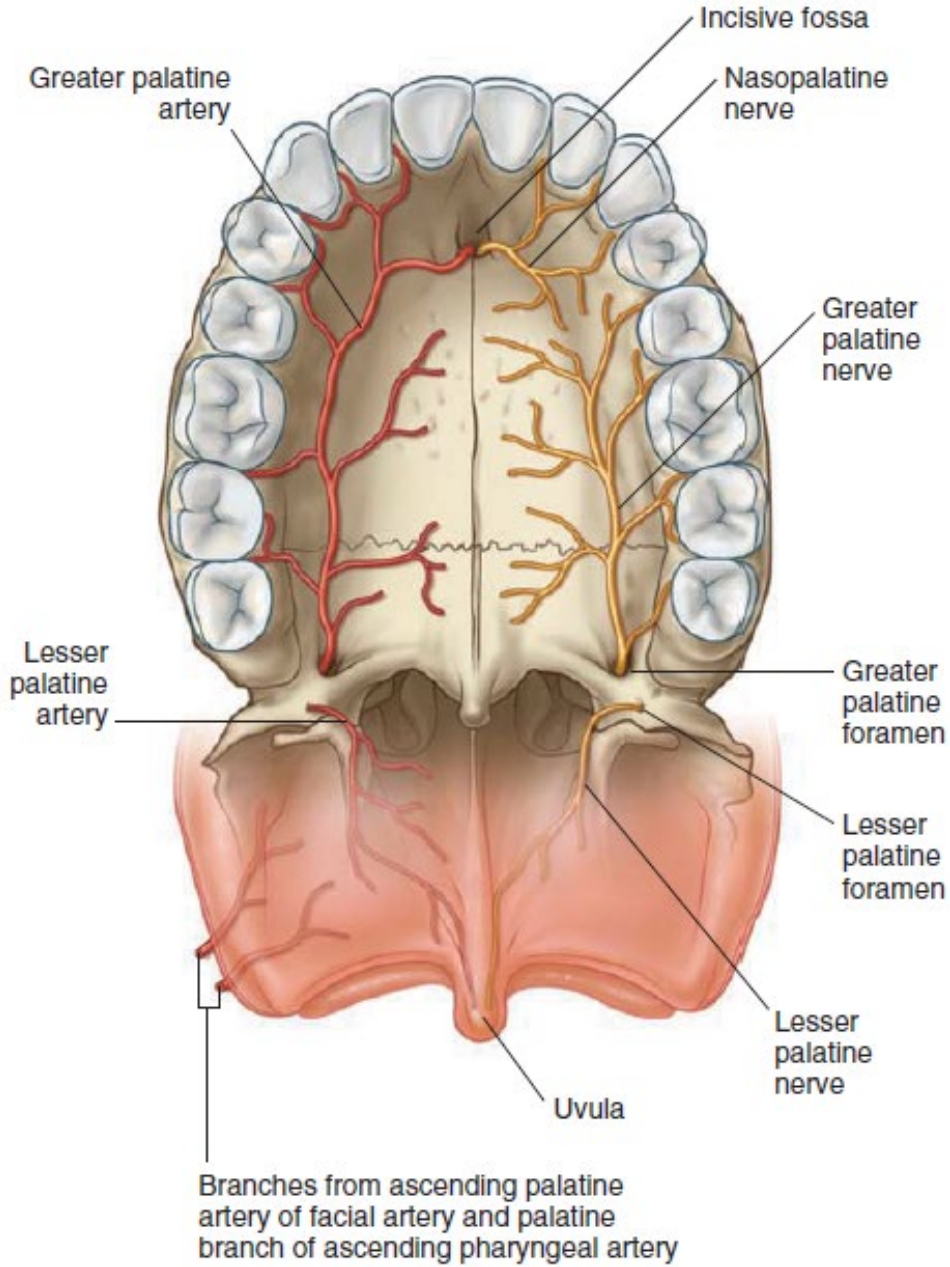
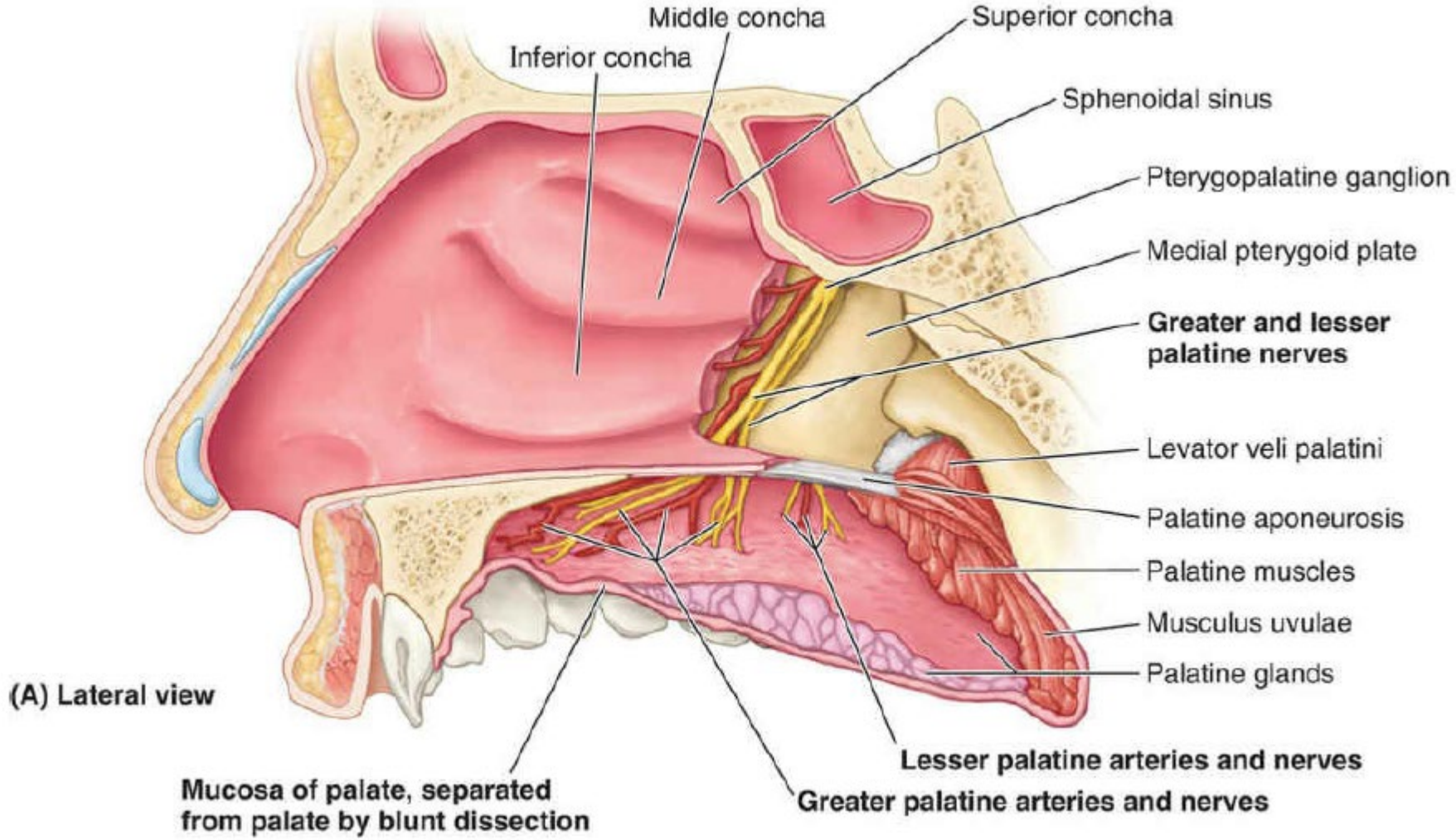

Posterior wall of oropharynx
Palatine tonsil
Palatoglossal arch
Palatopharyngeal arch
Soft palate
Uvula
A
Soft palate
B
Tongue
Anterior margin of
oropharyngeal isthmus
(palatoglossal arch)

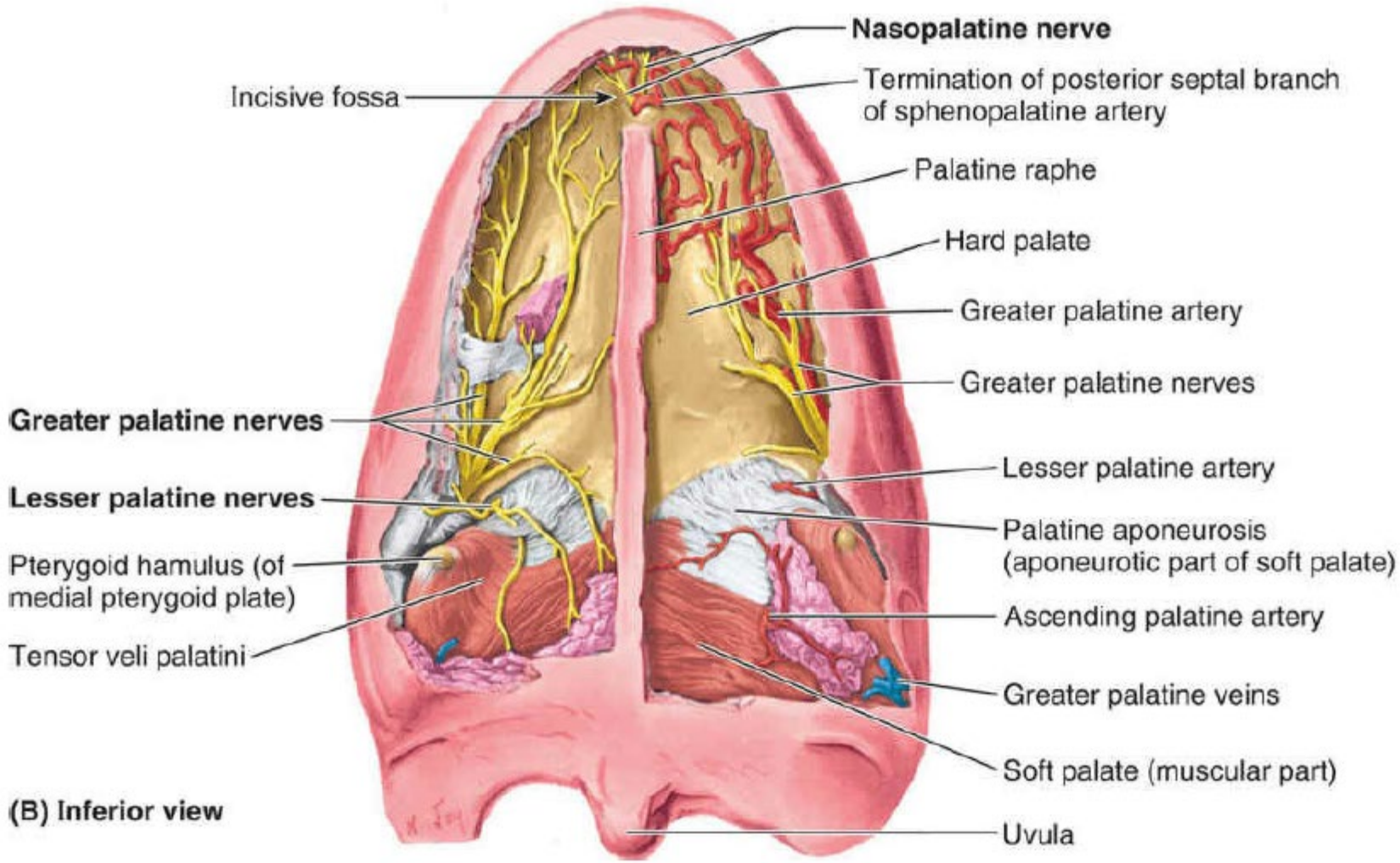
Table 8.22 Muscles of the soft palate

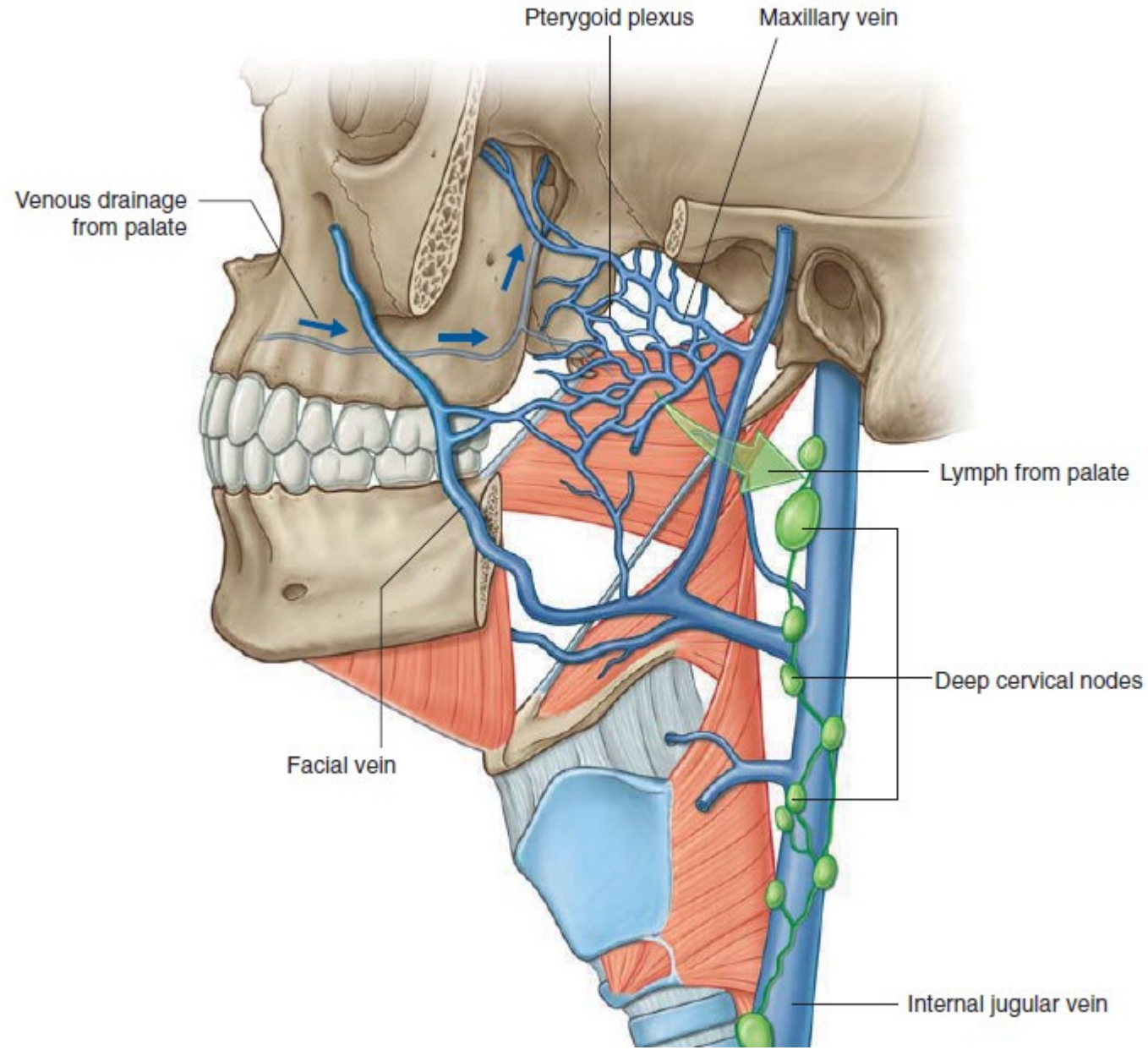
Muscle	Origin	Insertion	Innervation	Function
Tensor veli palatini	Scaphoid fossa of sphenoid bone; fibrous part of pharyngotympanic tube; spine of sphenoid	Palatine aponeurosis	Mandibular nerve [V_3] via the branch to medial pterygoid muscle	Tenses the soft palate; opens the pharyngotympanic tube
Levator veli palatini	Petrous part of temporal bone anterior to opening for carotid canal	Superior surface of palatine aponeurosis	Vagus nerve [X] via pharyngeal branch to pharyngeal plexus	Only muscle to elevate the soft palate above the neutral position
Palatopharyngeus	Superior surface of palatine aponeurosis	Pharyngeal wall	Vagus nerve [X] via pharyngeal branch to pharyngeal plexus	Depresses soft palate; moves palatopharyngeal arch toward midline; elevates pharynx
Palatoglossus	Inferior surface of palatine aponeurosis	Lateral margin of tongue	Vagus nerve [X] via pharyngeal branch to pharyngeal plexus	Depresses palate; moves palatoglossal arch toward midline; elevates back of the tongue
Musculus uvulae	Posterior nasal spine of hard palate	Connective tissue of uvula	Vagus nerve [X] via pharyngeal branch to pharyngeal plexus	Elevates and retracts uvula; thickens central region of soft palate

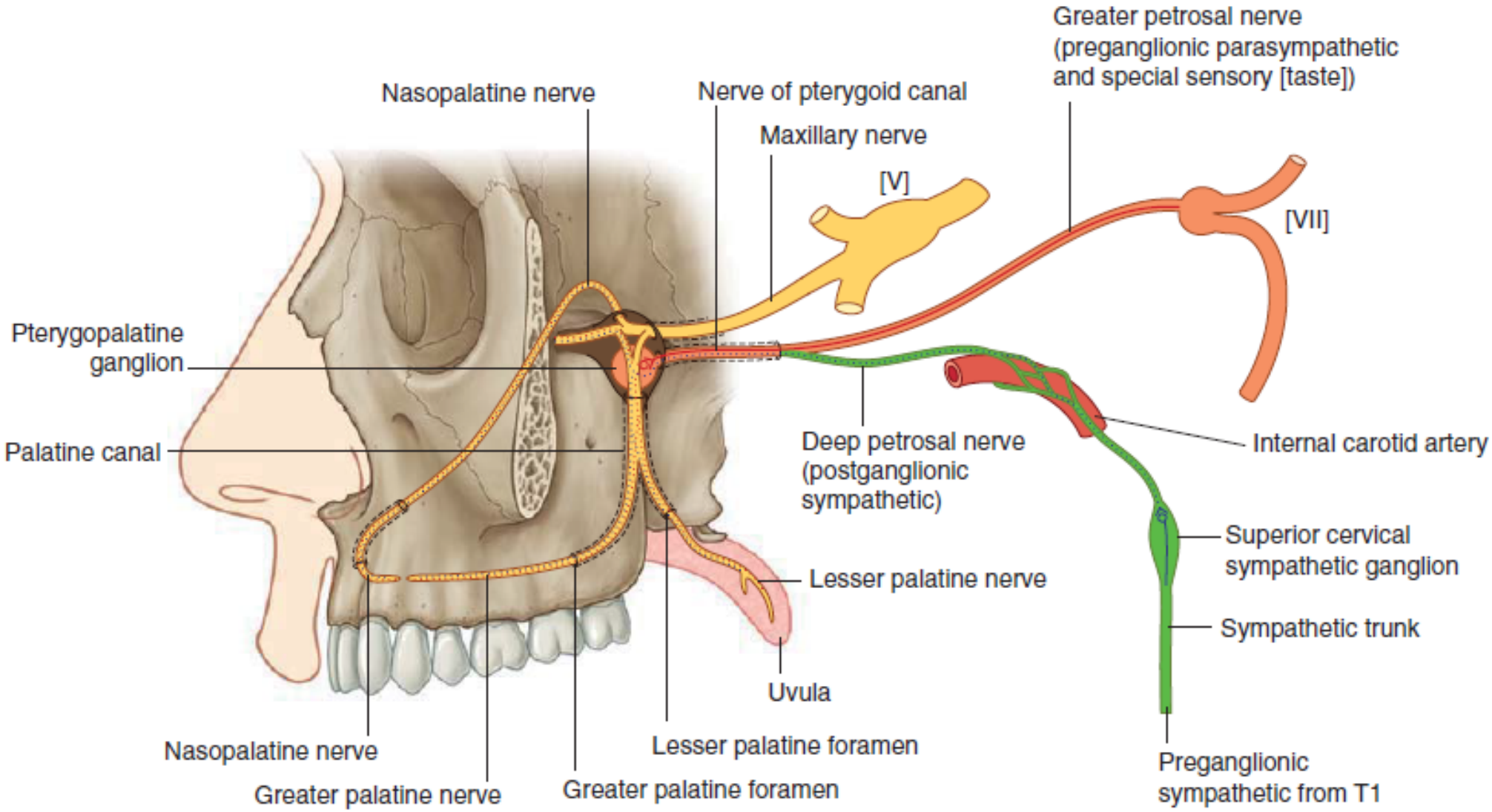

Lesser palatine artery
Maxillary artery
Palatine branch of ascending pharyngeal artery
Greater palatine artery
External carotid
Ascending palatine artery
Ascending pharyngeal artery
Internal carotid
Facial artery
External carotid
Lingual artery
Common carotid artery
Superior thyroid artery

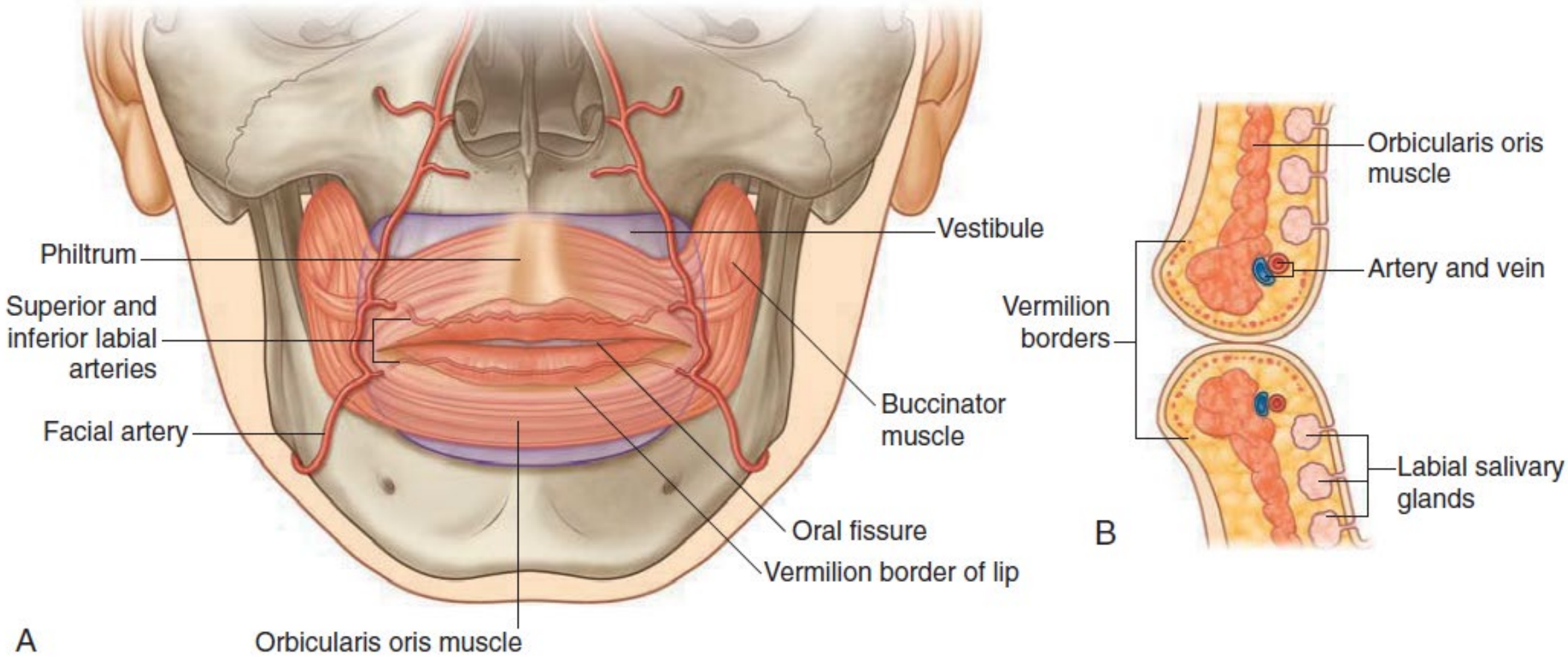

Incisive fossa
Greater palatine artery
Nasopalatine nerve
Greater palatine nerve
Lesser palatine artery
Greater palatine foramen
Lesser palatine foramen
Lesser palatine nerve
Uvula
Branches from ascending palatine artery of facial artery and palatine branch of ascending pharyngeal artery

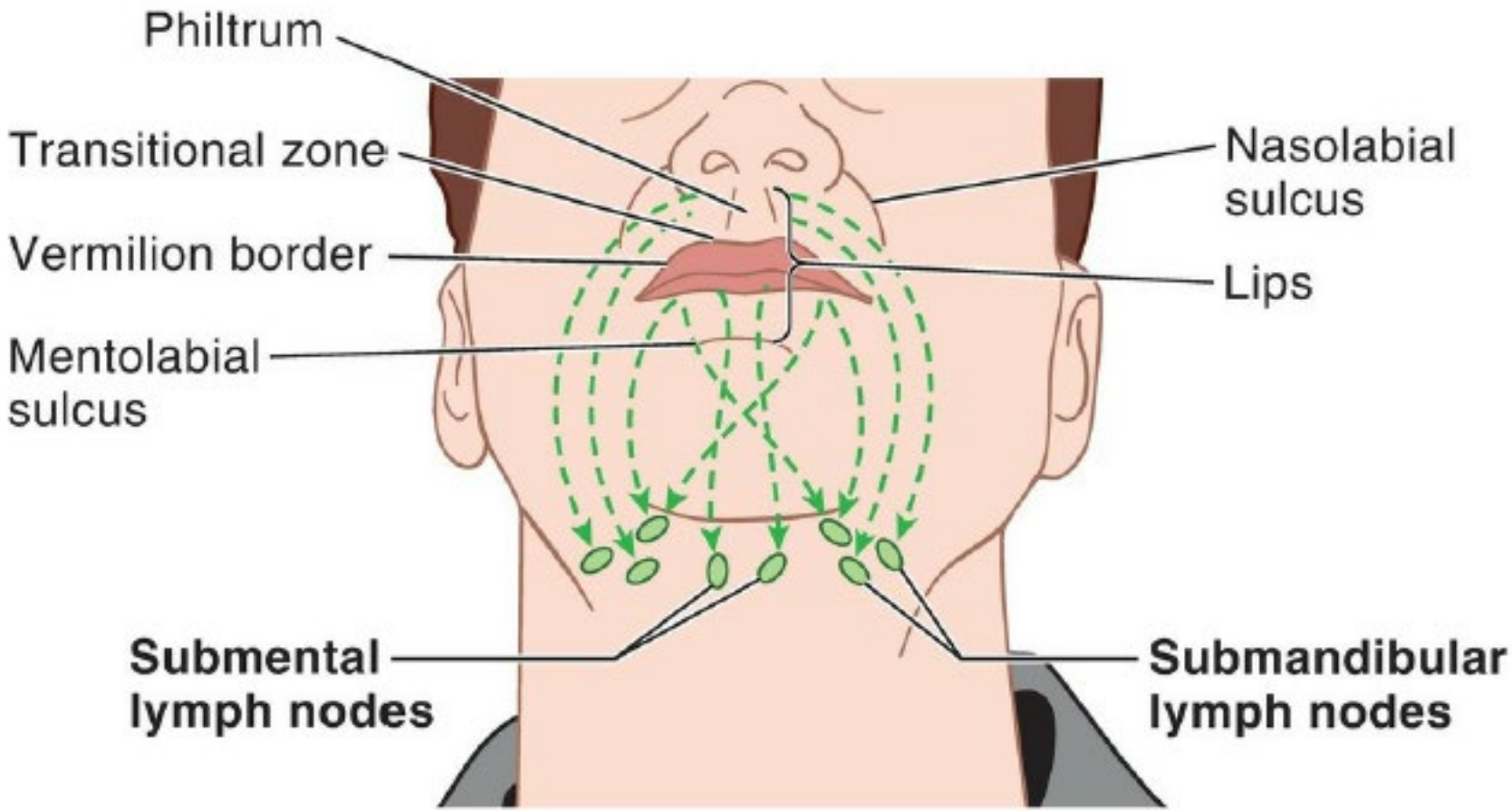

Middle concha
Superior concha
Inferior concha
Sphenoidal sinus
Pterygopalatine ganglion
Medial pterygoid plate
Greater and lesser palatine nerves
Levator veli palatini
Palatine aponeurosis
Palatine muscles
Musculus uvulae
Palatine glands
(A) Lateral view
Lesser palatine arteries and nerves
Mucosa of palate, separated from palate by blunt dissection
Greater palatine arteries and nerves


Nasopalatine nerve
Incisive fossa
Termination of posterior septal branch of sphenopalatine artery
Palatine raphe
Hard palate
Greater palatine artery
Greater palatine nerves
Greater palatine nerves
Lesser palatine artery
Lesser palatine nerves
Palatine aponeurosis (aponeurotic part of soft palate)
Pterygoid hamulus (of medial pterygoid plate)
Ascending palatine artery
Tensor veli palatini
Greater palatine veins
Soft palate (muscular part)
(B) Inferior view
Uvula


Pterygoid plexus
Maxillary vein
Venous drainage from palate
Lymph from palate
Deep cervical nodes
Facial vein
Internal jugular vein

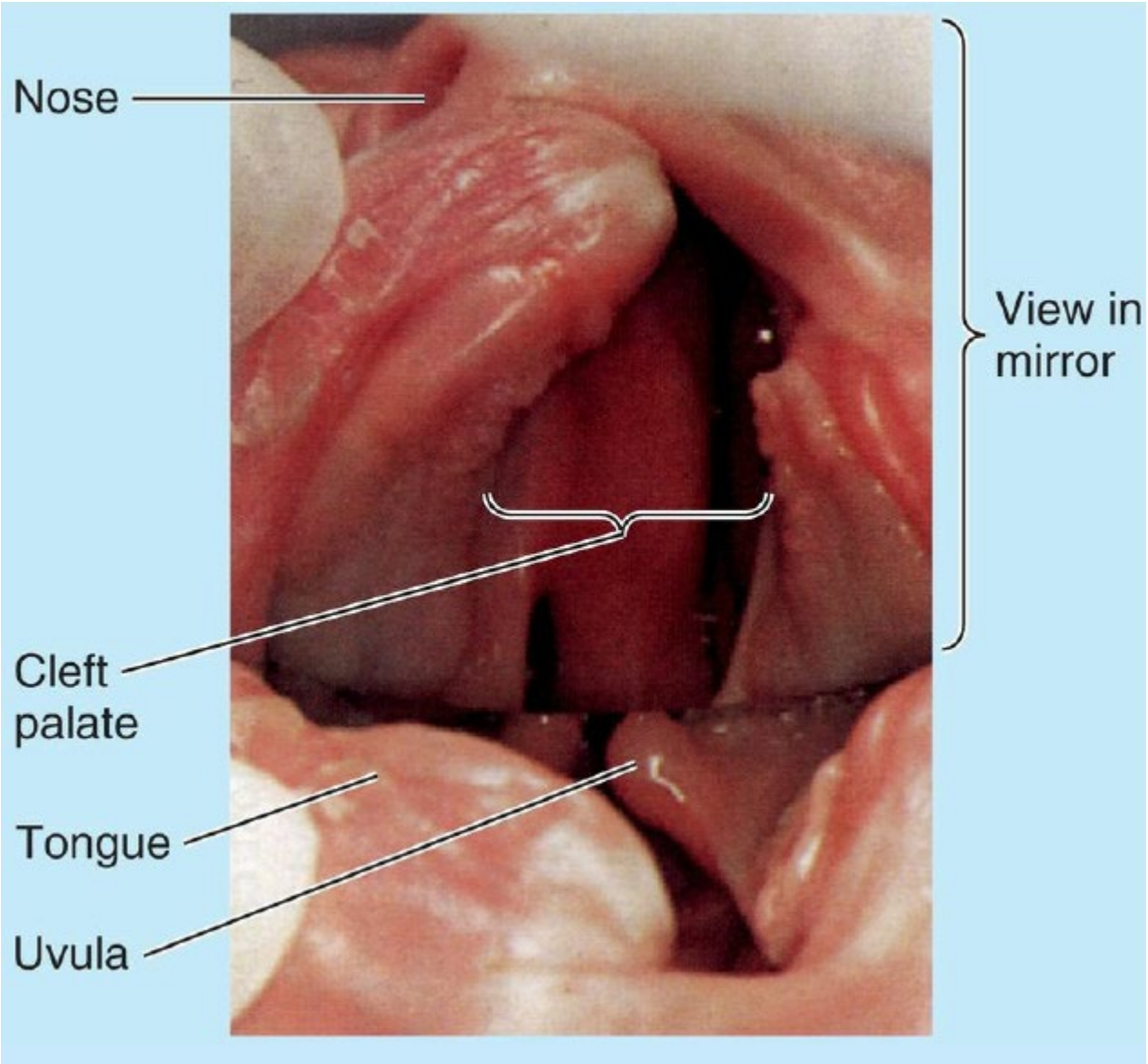

Greater petrosal nerve
(preganglionic parasympathetic
and special sensory [taste])
Nasopalatine nerve
Nerve of pterygoid canal
Maxillary nerve
[V]
[VII]
Pterygopalatine
ganglion
Palatine canal
Deep petrosal nerve
(postganglionic
sympathetic)
Internal carotid artery
Superior cervical
sympathetic ganglion
Lesser palatine nerve
Sympathetic trunk
Uvula
Nasopalatine nerve
Lesser palatine foramen
Greater palatine nerve
Greater palatine foramen
Preganglionic
sympathetic from T1


Philtrum
Superior and inferior labial arteries
Facial artery
Vestibule
Buccinator muscle
Oral fissure
Vermilion border of lip
Orbicularis oris muscle
A
Orbicularis oris muscle
Artery and vein
Vermilion borders
Labial salivary glands
B


Philtrum
Transitional zone
Vermilion border
Mentolabial sulcus
Nasolabial sulcus
Lips
Submental lymph nodes
Submandibular lymph nodes

Cleft Lip

Cleft lip is a birth defect (usually of the upper lip) that occurs in 1 of 1,000 births; 60–80% of affected infants are males. The clefts vary from a small notch in the transitional zone of the lip and vermilion border to a notch that extends through the lip into the nose. In severe cases, the cleft extends deeper and is continuous with a cleft in the palate. Cleft lip may be unilateral or bilateral (Moore et al., 2016).

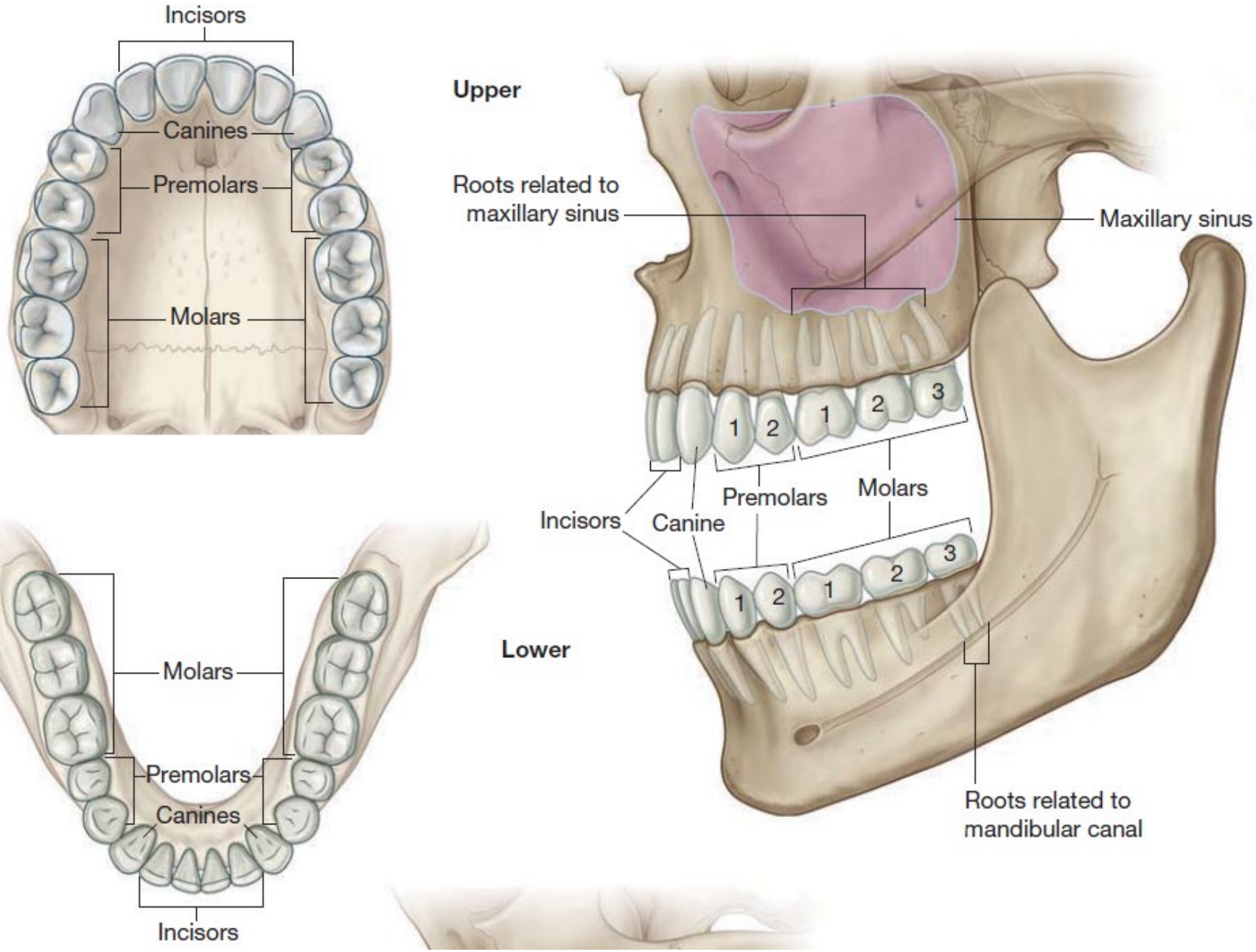


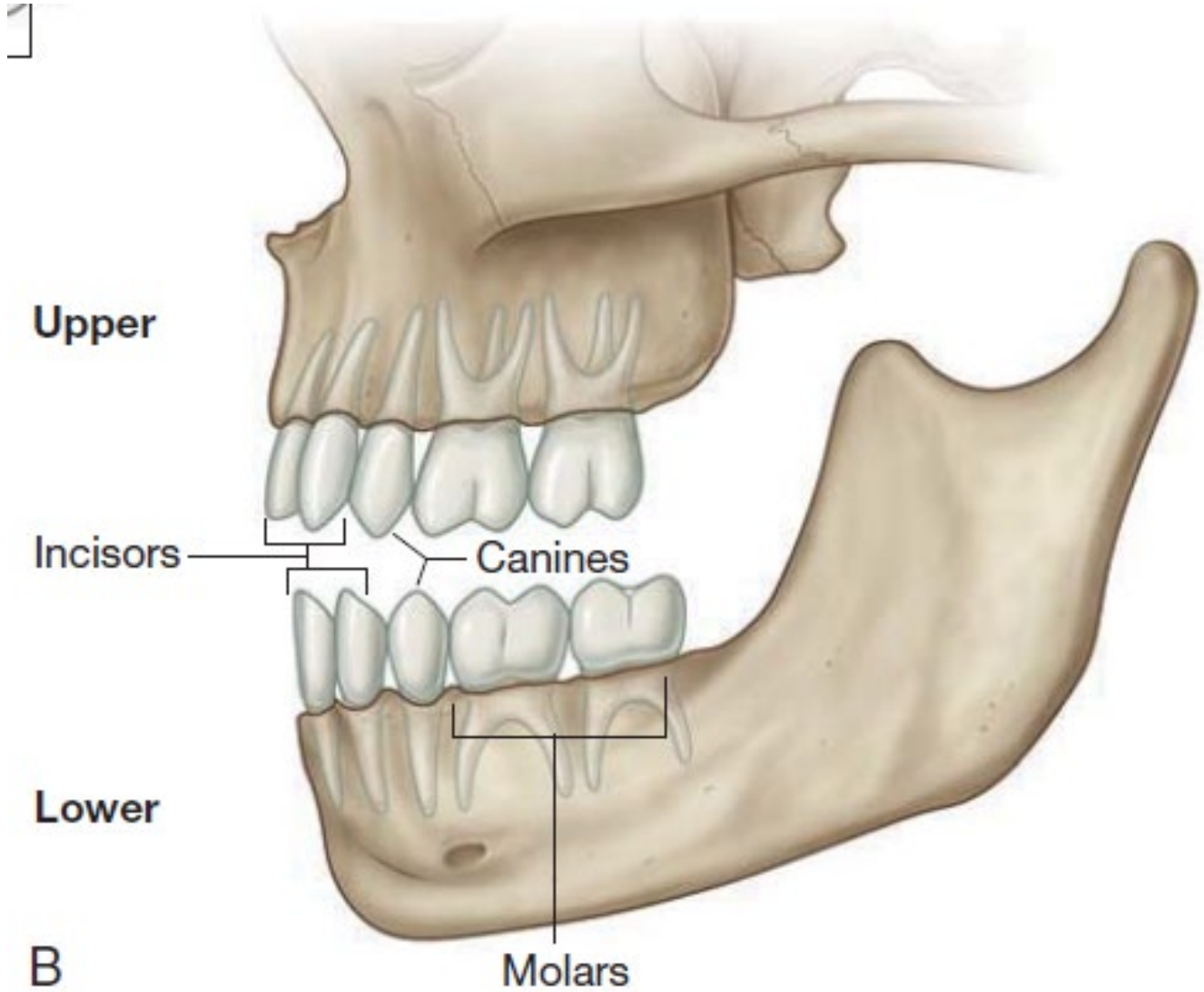
Cleft Palate

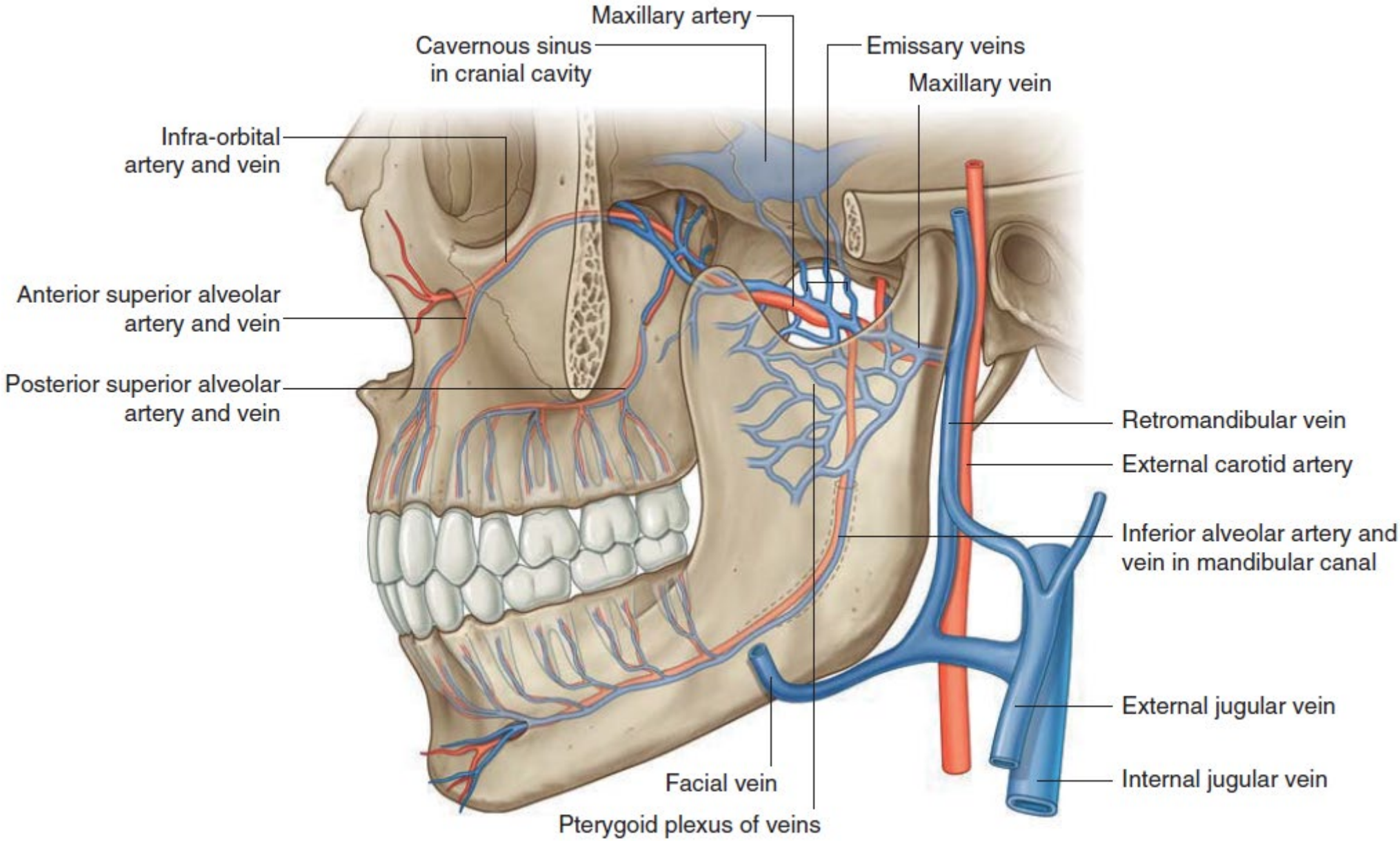
Cleft palate, with or without cleft lip, occurs in approximately 1 of 2,500 births and is more common in females than in males. The cleft may involve only the uvula, giving it a fishtail appearance, or it may extend through the soft and hard regions of the palate. In severe cases associated with cleft lip, the cleft palate extends through the alveolar processes of the maxillae and the lips on both sides. (Moore et al., 2016).

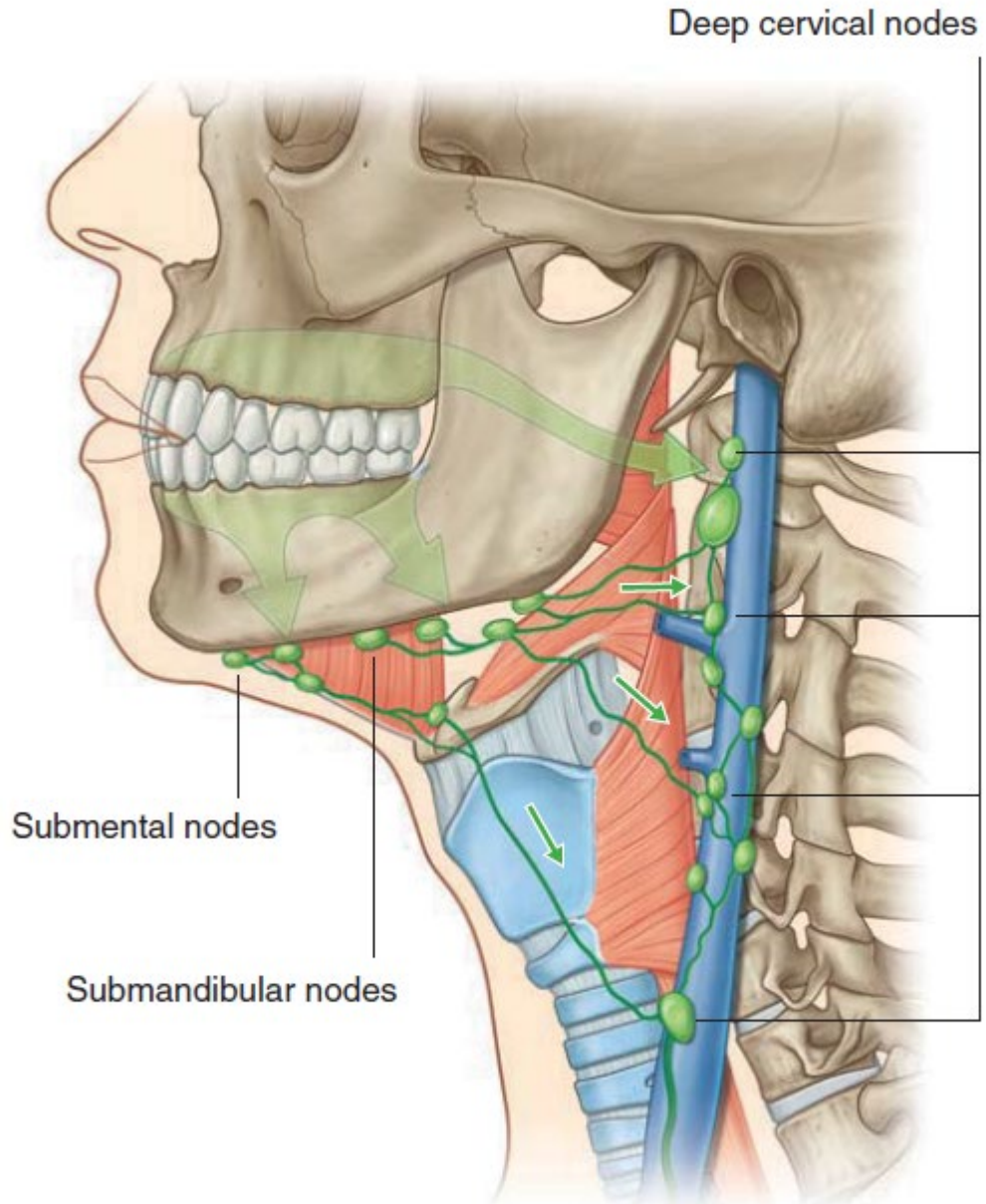
Gag Reflex

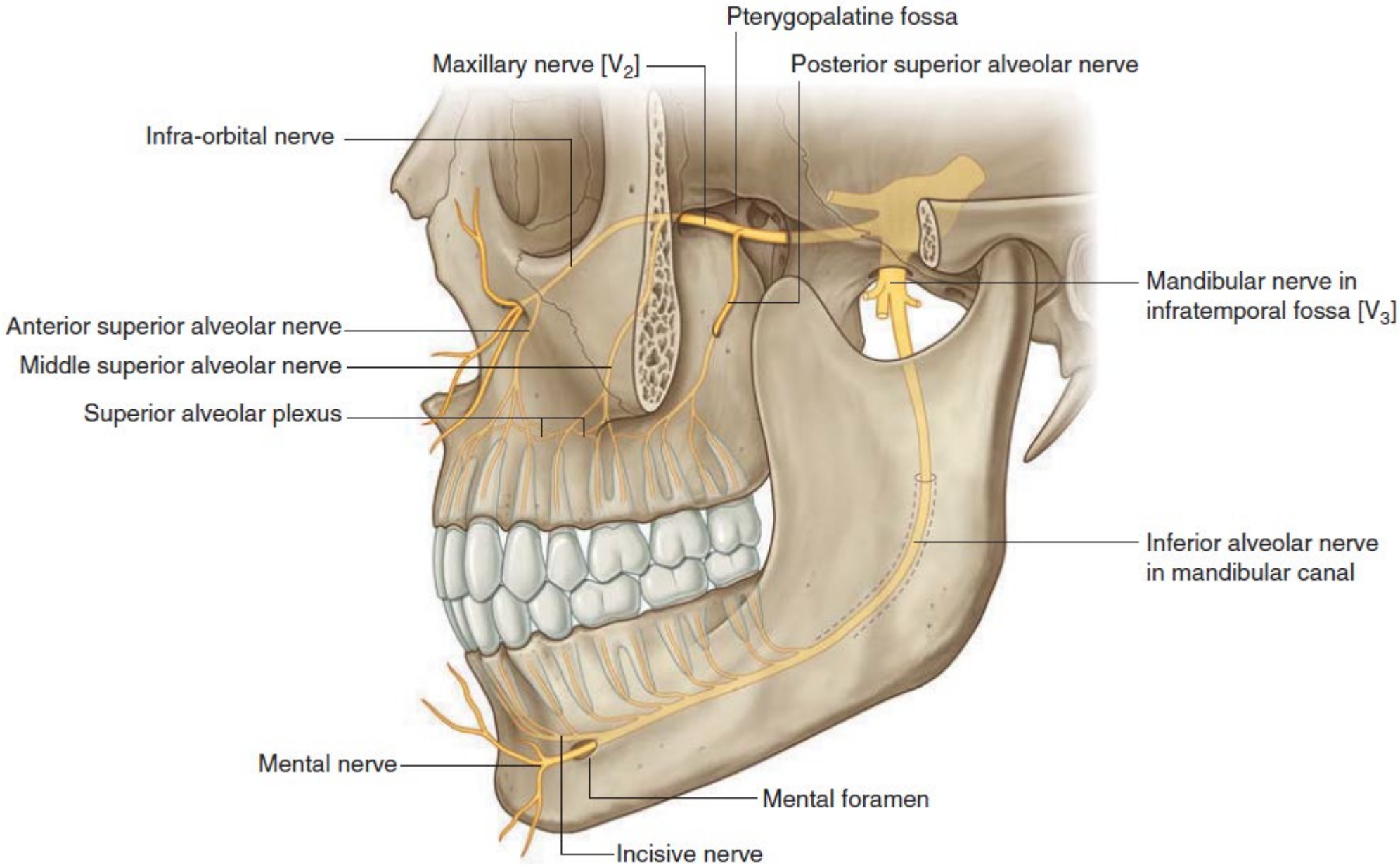
It is possible to touch the anterior part of the tongue without feeling discomfort. However, when the posterior part is touched, the individual gags. CN IX and CN X are responsible for the muscular contraction of each side of the pharynx. Glossopharyngeal branches provide the afferent limb of the gag reflex.

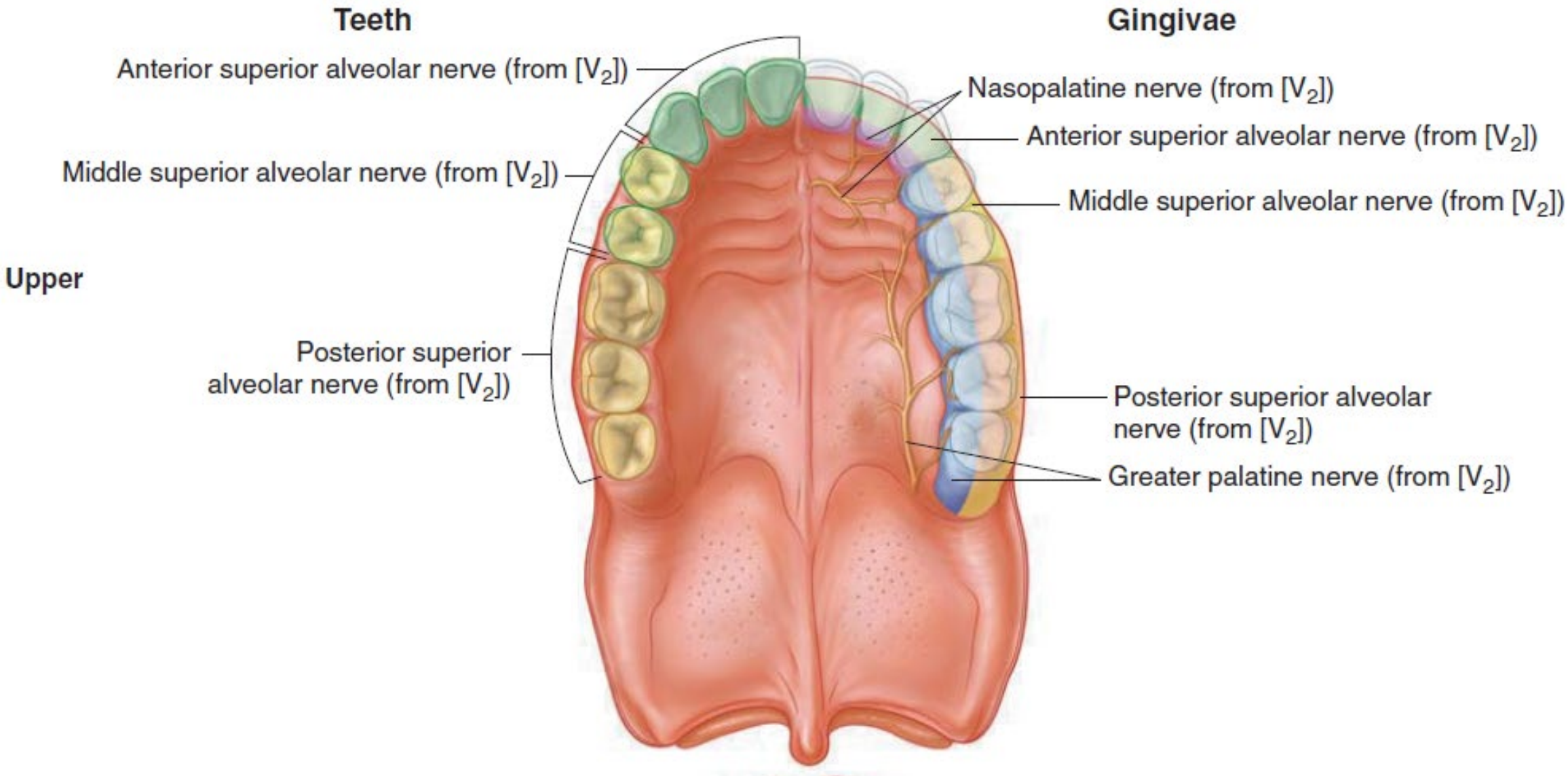

Incisors
Canines
Premolars
Molars
Upper
Roots related to maxillary sinus
Maxillary sinus
1
2
1
2
3
Premolars
Molars
Incisors
Canine
1
2
1
2
3
Lower
Roots related to mandibular canal
Molars
Premolars
Canines
Incisors
A


Upper
Incisors
Canines
Lower
B
Molars

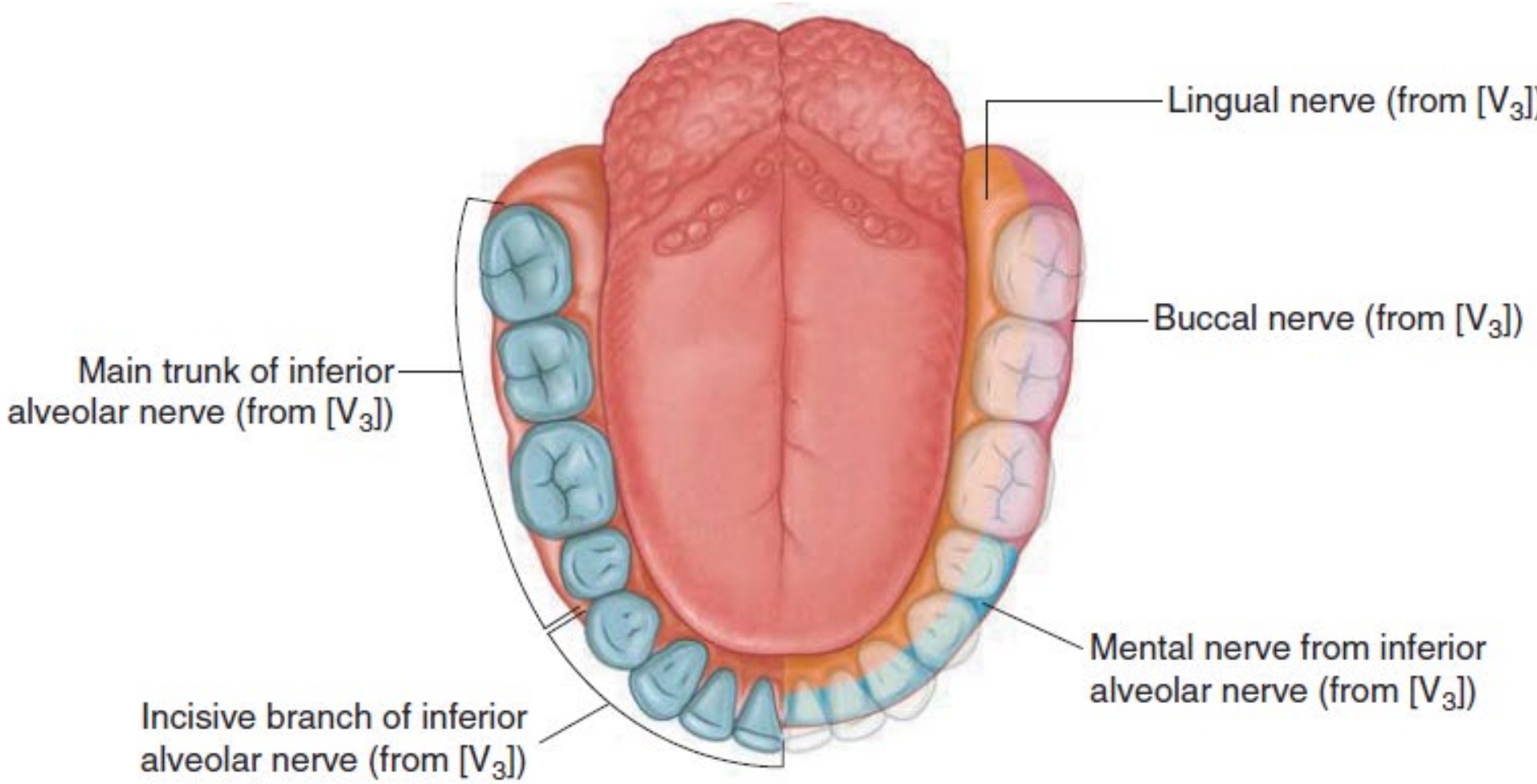

Maxillary artery
Cavernous sinus in cranial cavity
Emissary veins
Maxillary vein
Infra-orbital artery and vein
Anterior superior alveolar artery and vein
Posterior superior alveolar artery and vein
Retromandibular vein
External carotid artery
Inferior alveolar artery and vein in mandibular canal
External jugular vein
Internal jugular vein
Facial vein
Pterygoid plexus of veins


Deep cervical nodes
Submental nodes
Submandibular nodes


Pterygopalatine fossa
Maxillary nerve [V2]
Posterior superior alveolar nerve
Infra-orbital nerve
Mandibular nerve in infratemporal fossa [V3]
Anterior superior alveolar nerve
Middle superior alveolar nerve
Superior alveolar plexus
Inferior alveolar nerve in mandibular canal
Mental nerve
Mental foramen
Incisive nerve


Teeth
Gingivae
Anterior superior alveolar nerve (from [V2])
Middle superior alveolar nerve (from [V2])
Upper
Posterior superior alveolar nerve (from [V2])
Nasopalatine nerve (from [V2])
Anterior superior alveolar nerve (from [V2])
Middle superior alveolar nerve (from [V2])
Posterior superior alveolar nerve (from [V2])
Greater palatine nerve (from [V2])

Lower


Lingual nerve (from [V3])
Buccal nerve (from [V3])
Main trunk of inferior alveolar nerve (from [V3])
Mental nerve from inferior alveolar nerve (from [V3])
Incisive branch of inferior alveolar nerve (from [V3])