

In the name of GOD



**General Anatomy
For
Paramedicine
Student
By
Dr. Saeednia**

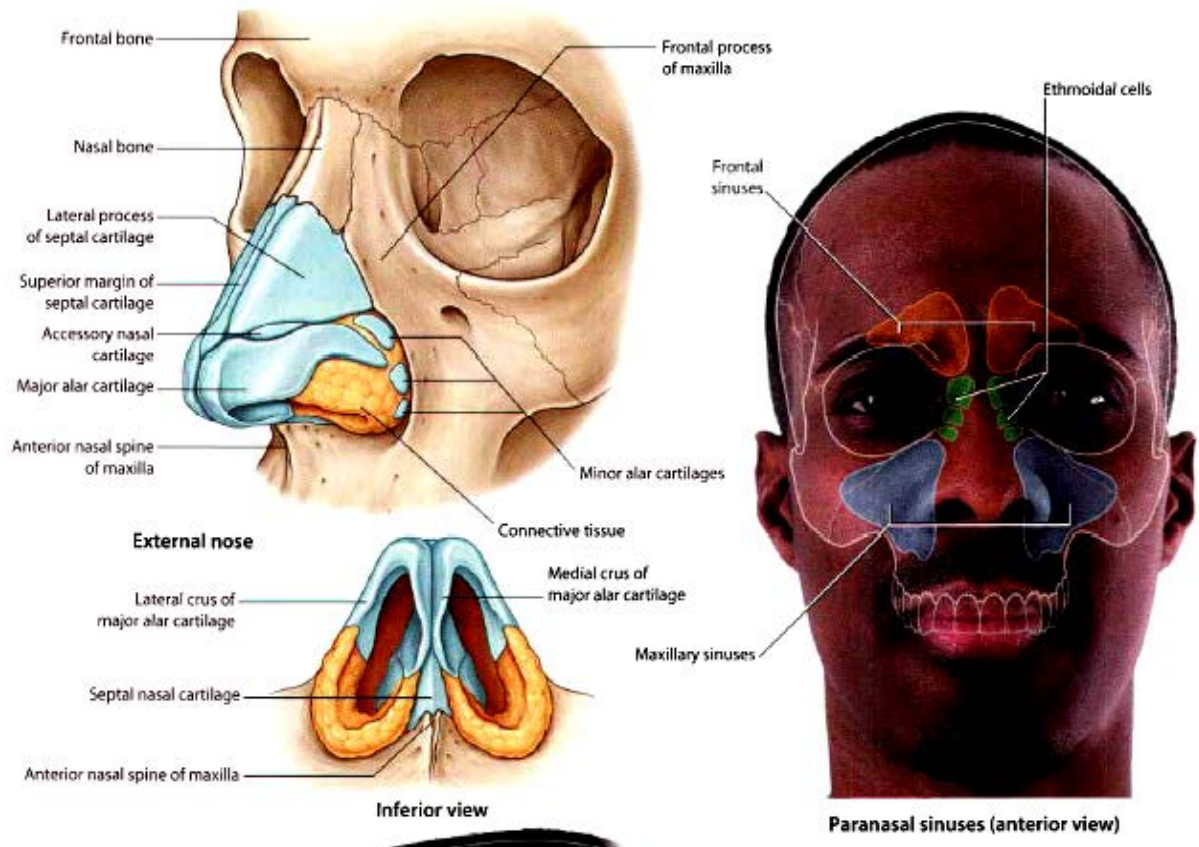
Respiratory system

Conducting :

Nose/Nasopharynx
/Larynge / Trachea /
Broch/Bronchiol/Ter
minal bronchiol

Respiratory :

Respiratory
bronchiol / alveolar
duct / alveoli



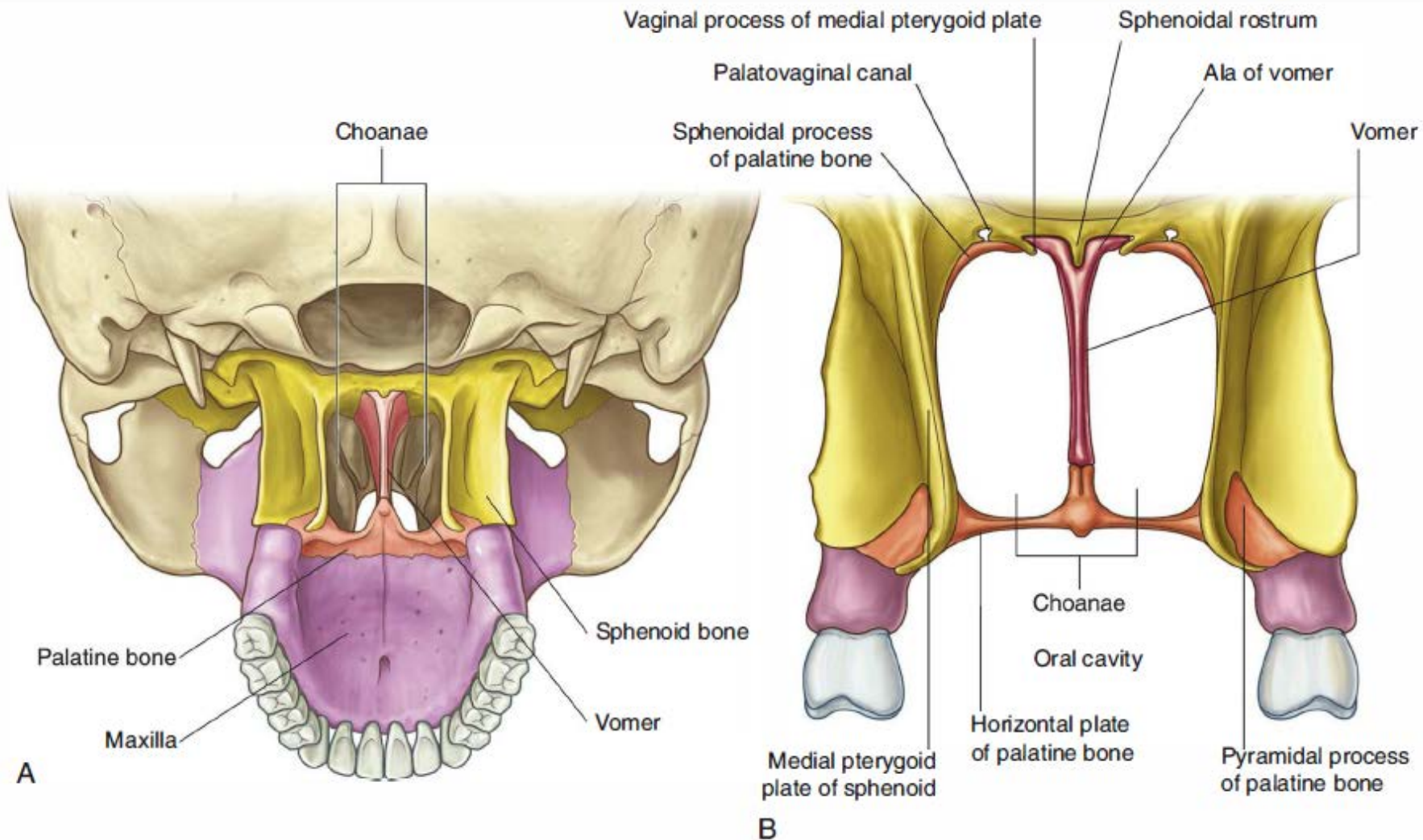


Fig. 8.237 Choanae (posterior view). **A.** Overview. **B.** Magnified view.

Nose

- Ext. Nose :
- Apex / base / lat. surface

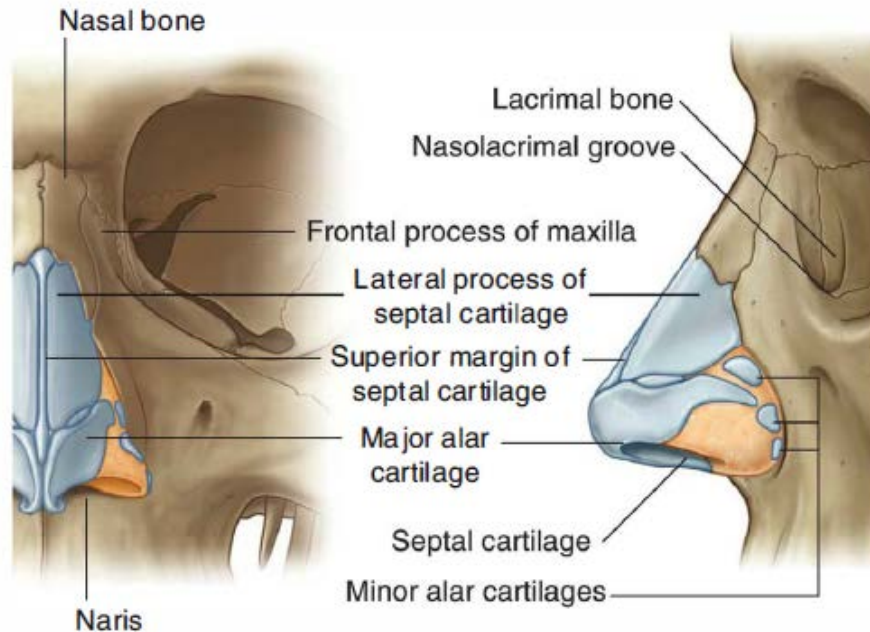
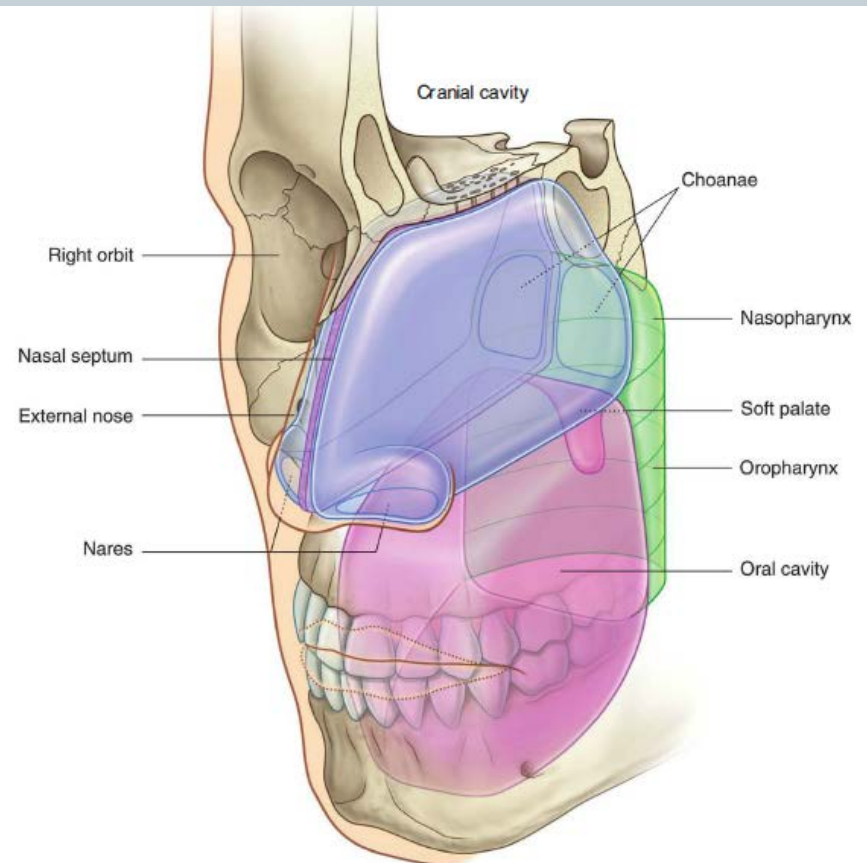


Fig. 8.230 External nose.

- Nasal Cavity



Ext. Nose

Nasal cartilages

Artery :

Facial / ophtalmic /
maxillary

Vain :

Facial / ophtalmic

Sensory nerve :

ophtalmic / maxillary

Motor nerve :

Facial

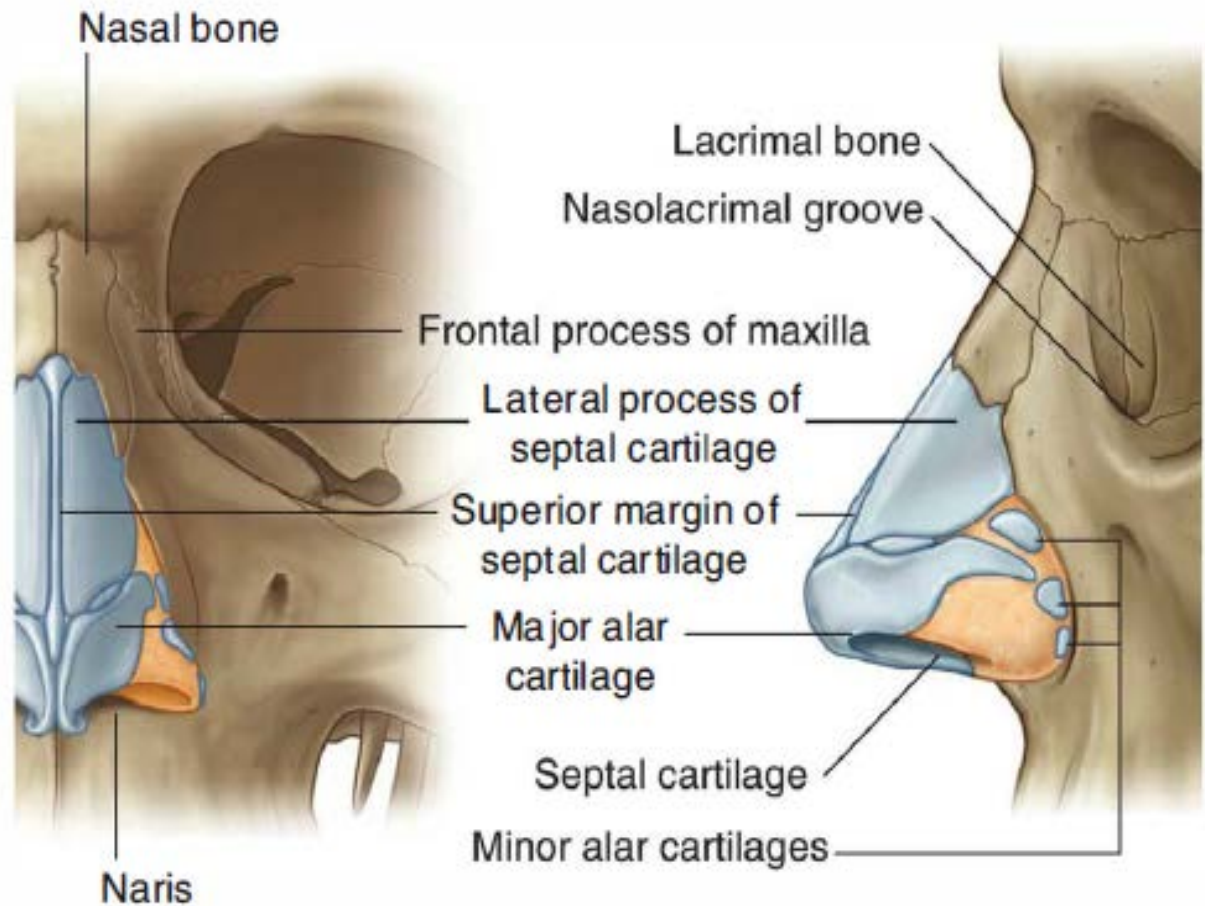


Fig. 8.230 External nose.

Nasal cavity

Med. Wall (septum)

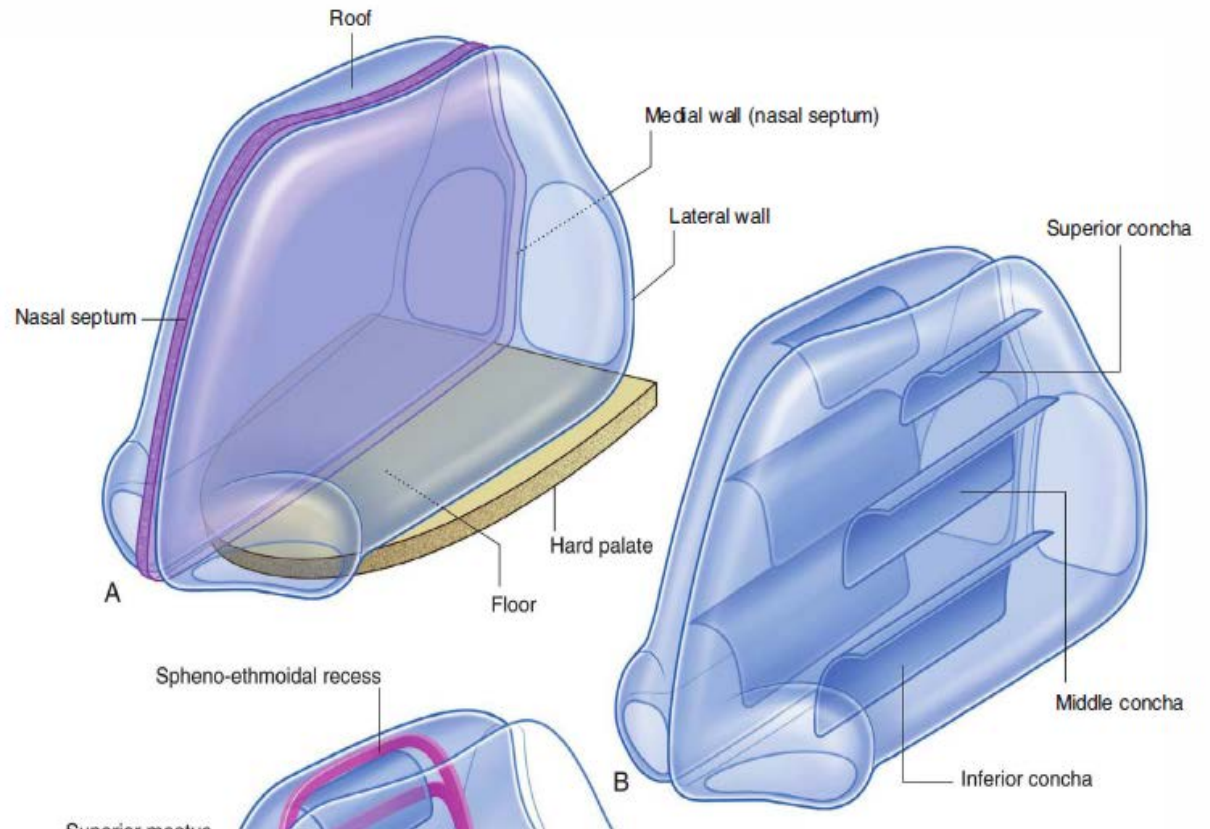
Lat. Wall

Floor

Roof

Sinus : frontal /
maxillary /
ethmoidal

Nasolacrimal duct



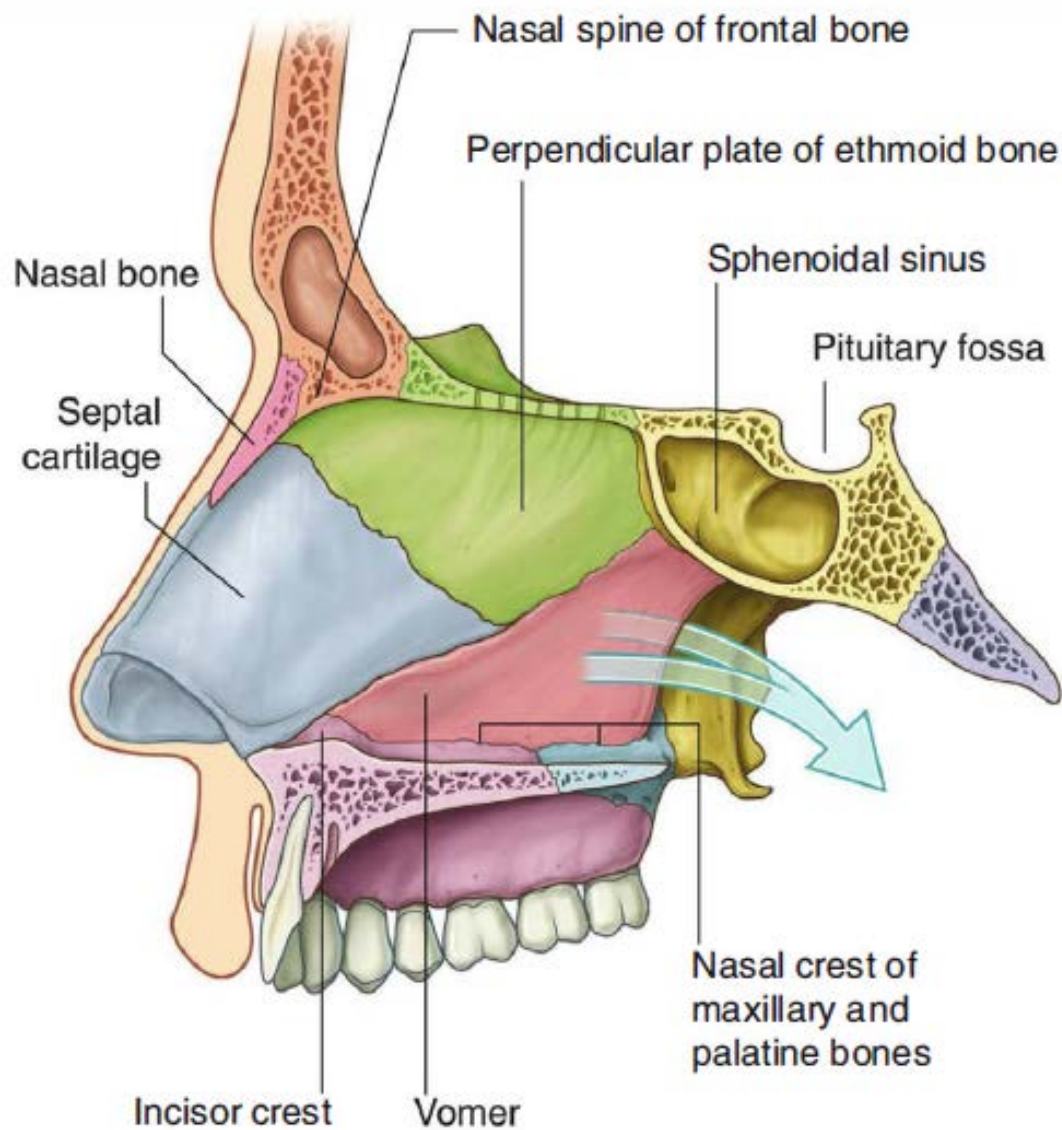


Fig. 8.232 Medial wall of the nasal cavity—the nasal septum.

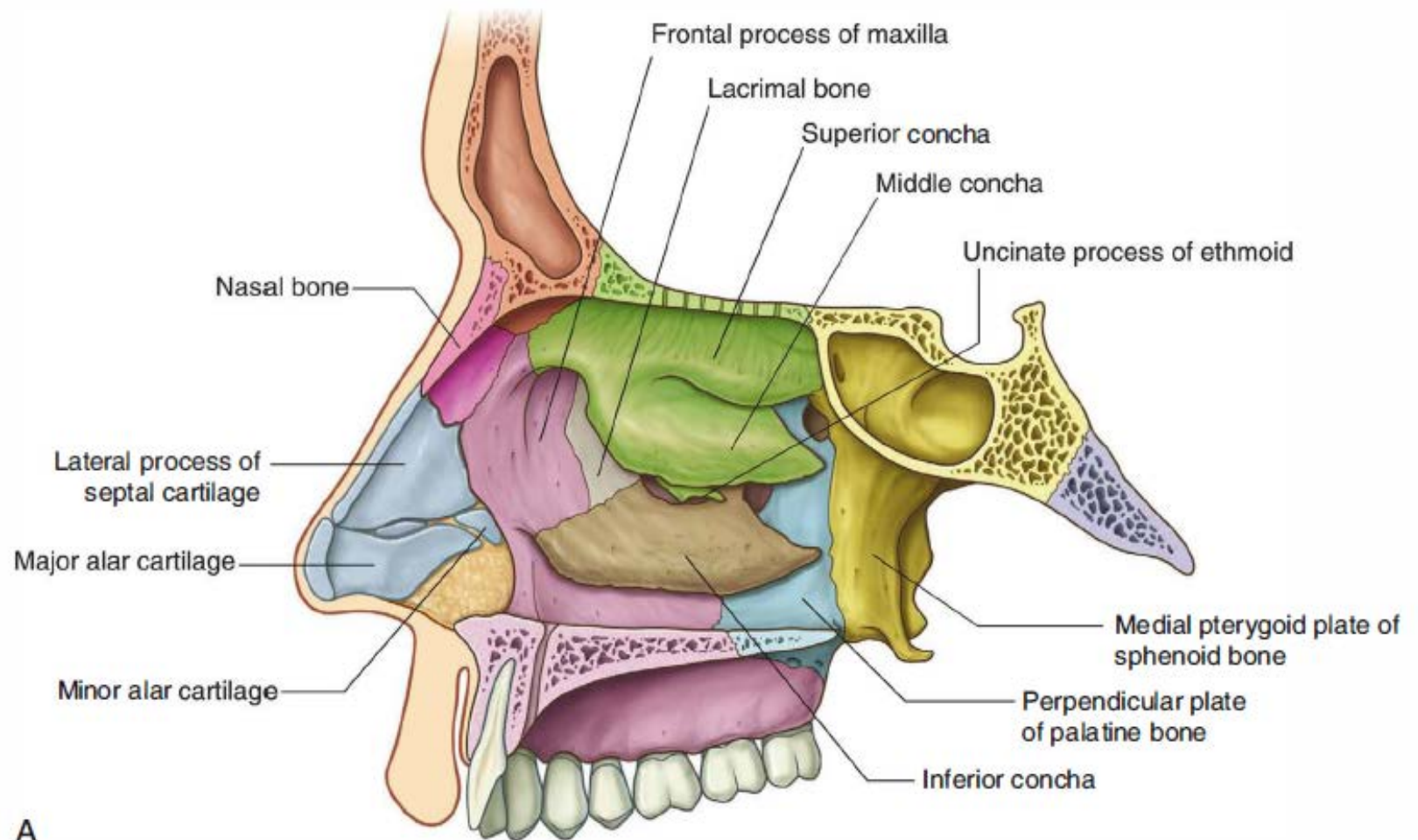


Fig. 8.235 Lateral wall of the nasal cavity. **A.** Bones.

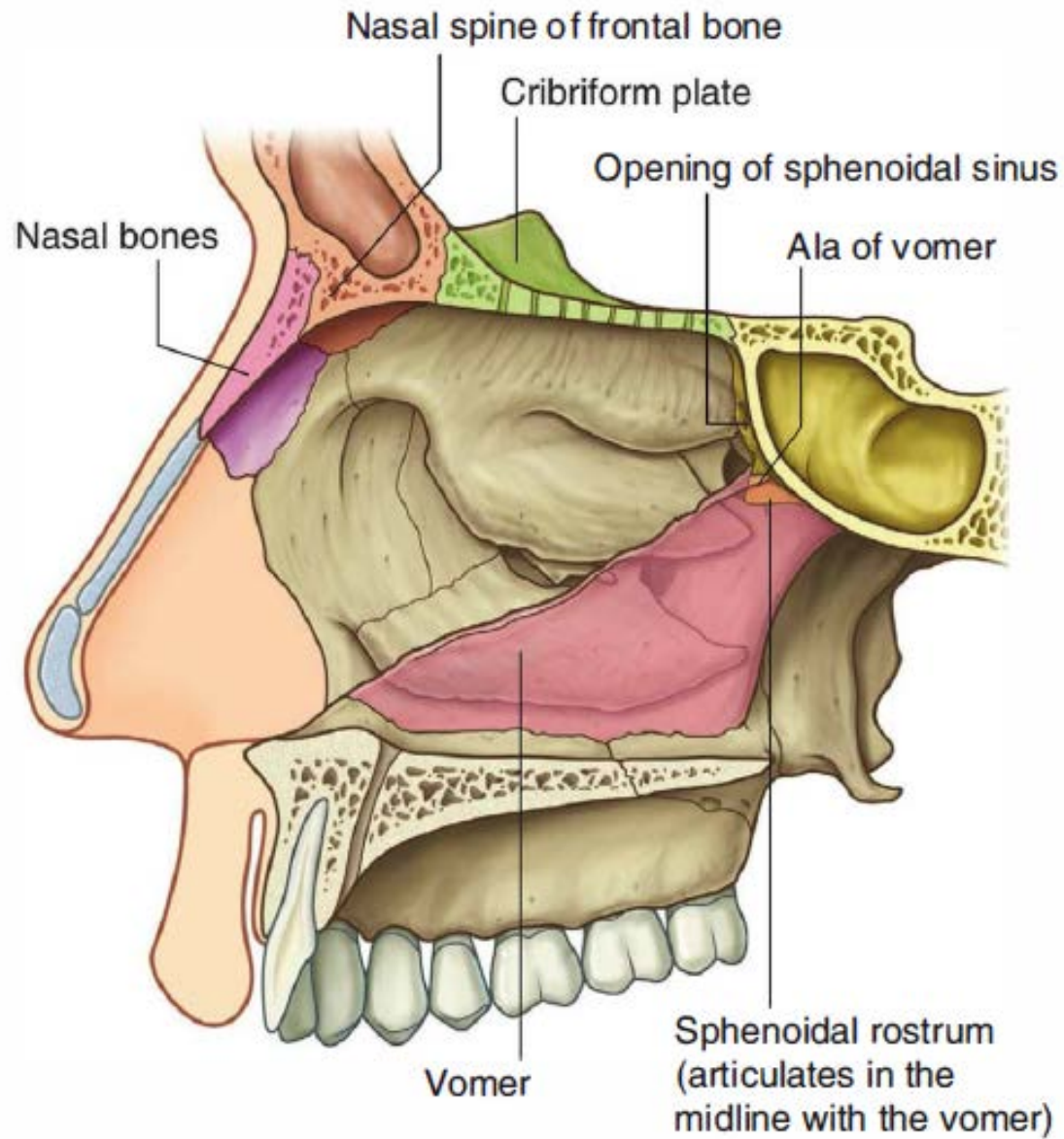


Fig. 8.234 Roof of the nasal cavity.

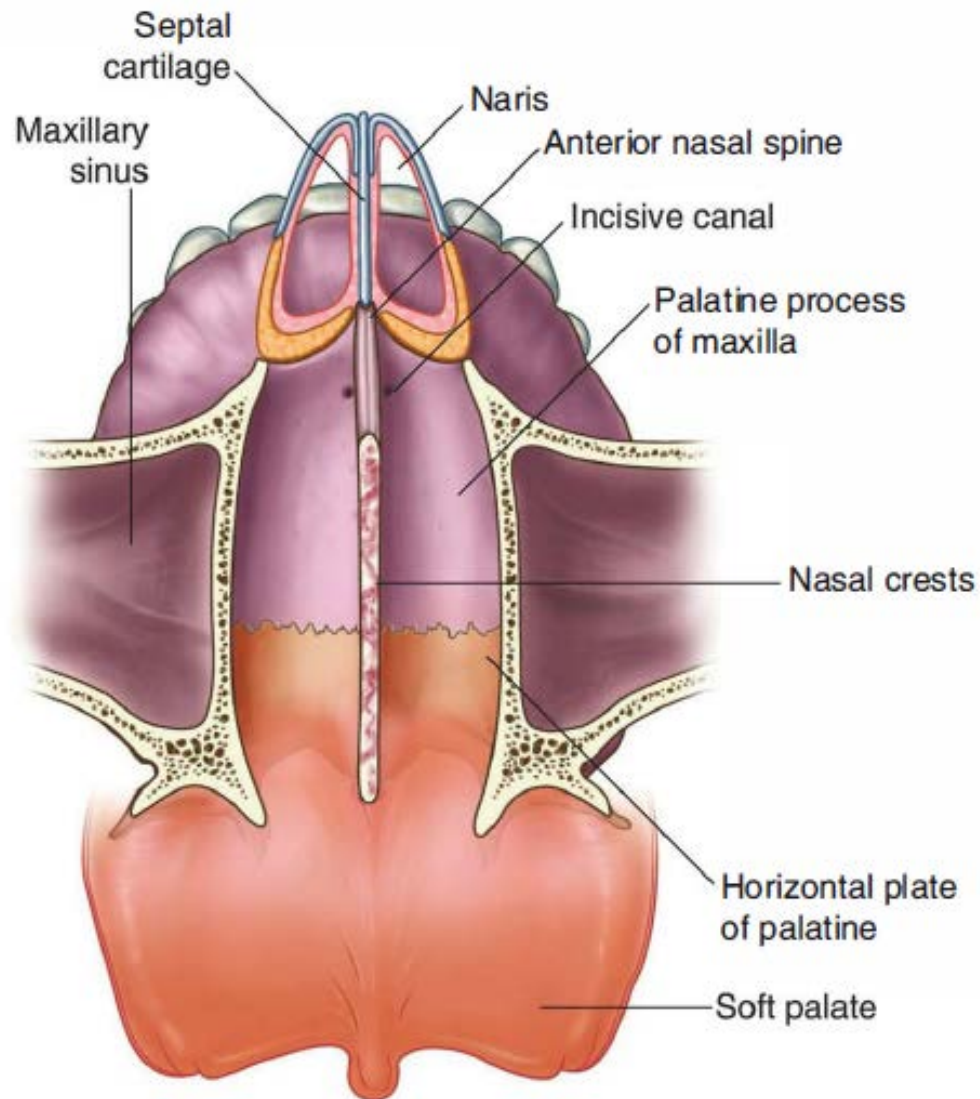


Fig. 8.233 Floor of the nasal cavity (superior view).

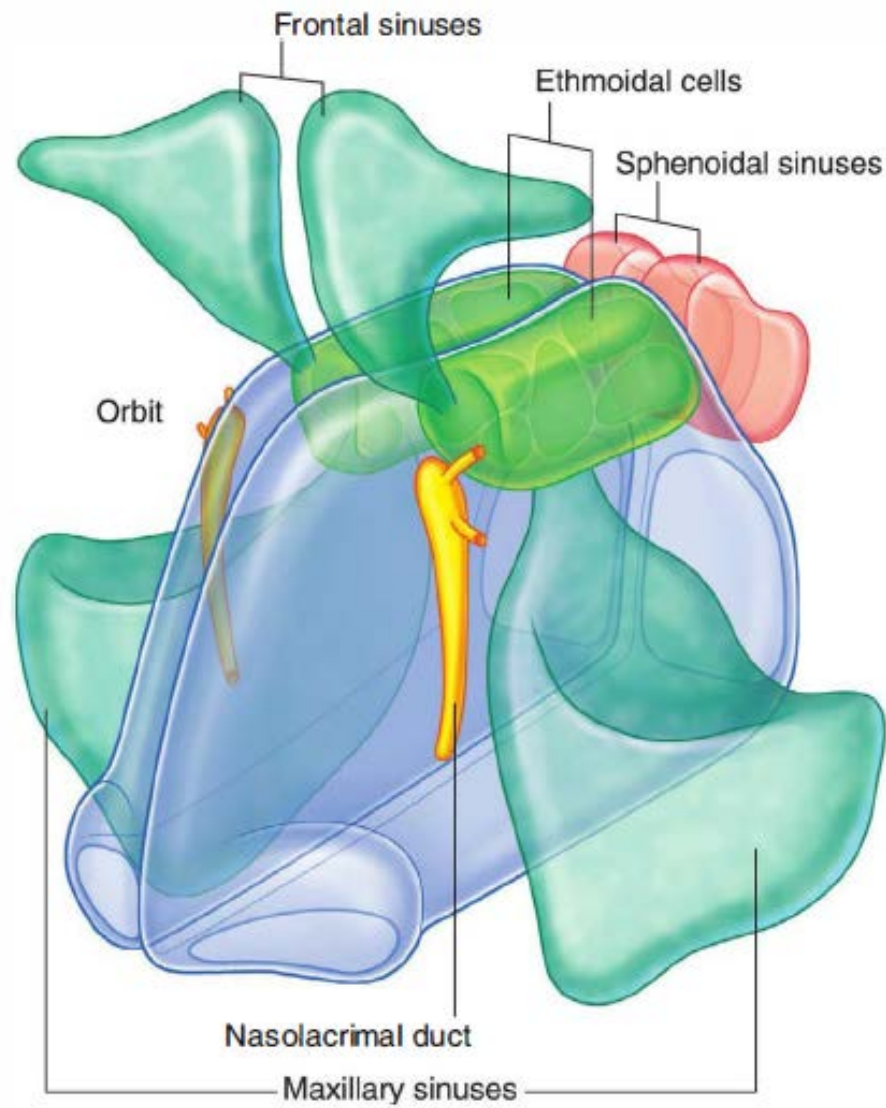
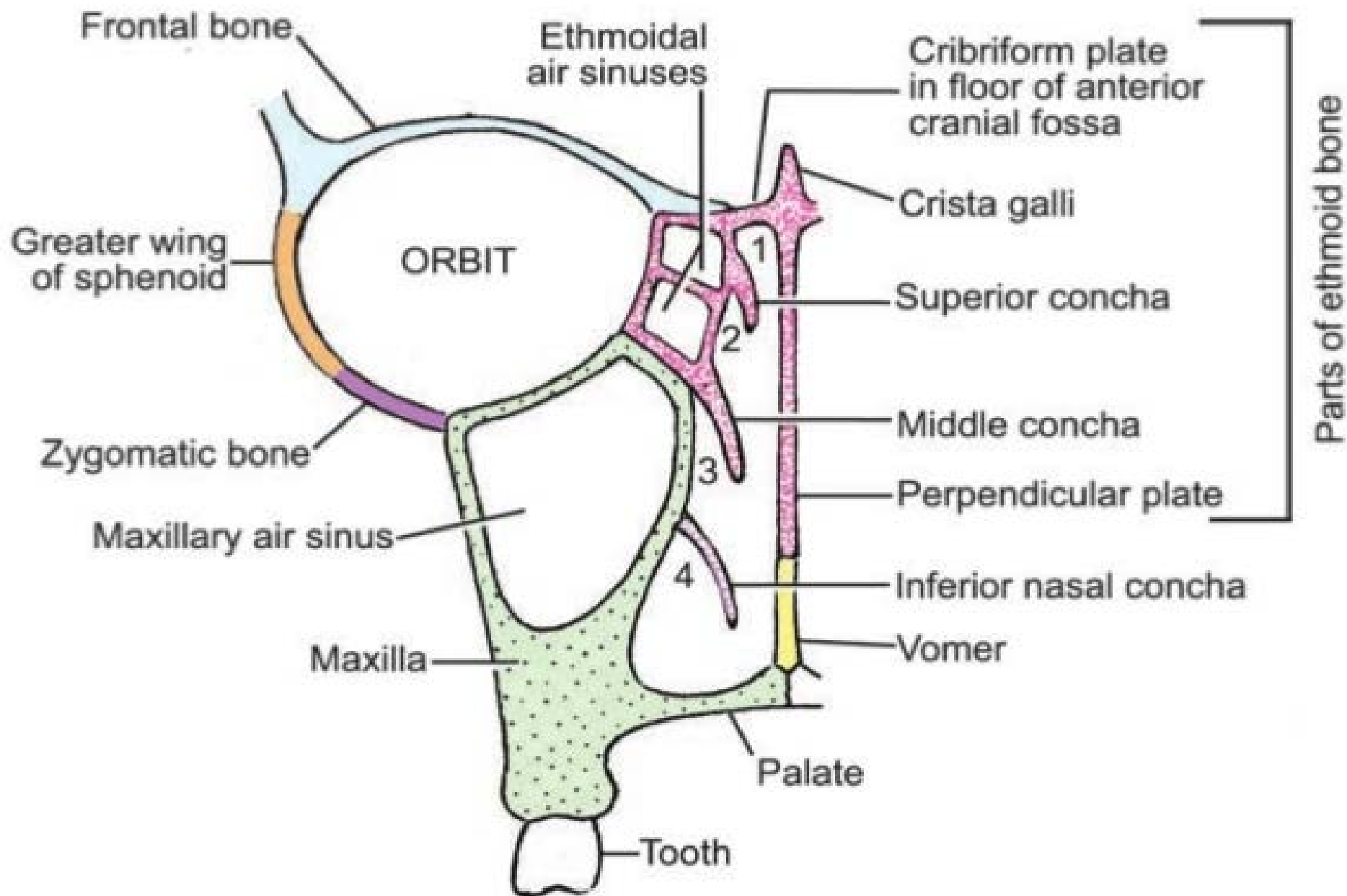
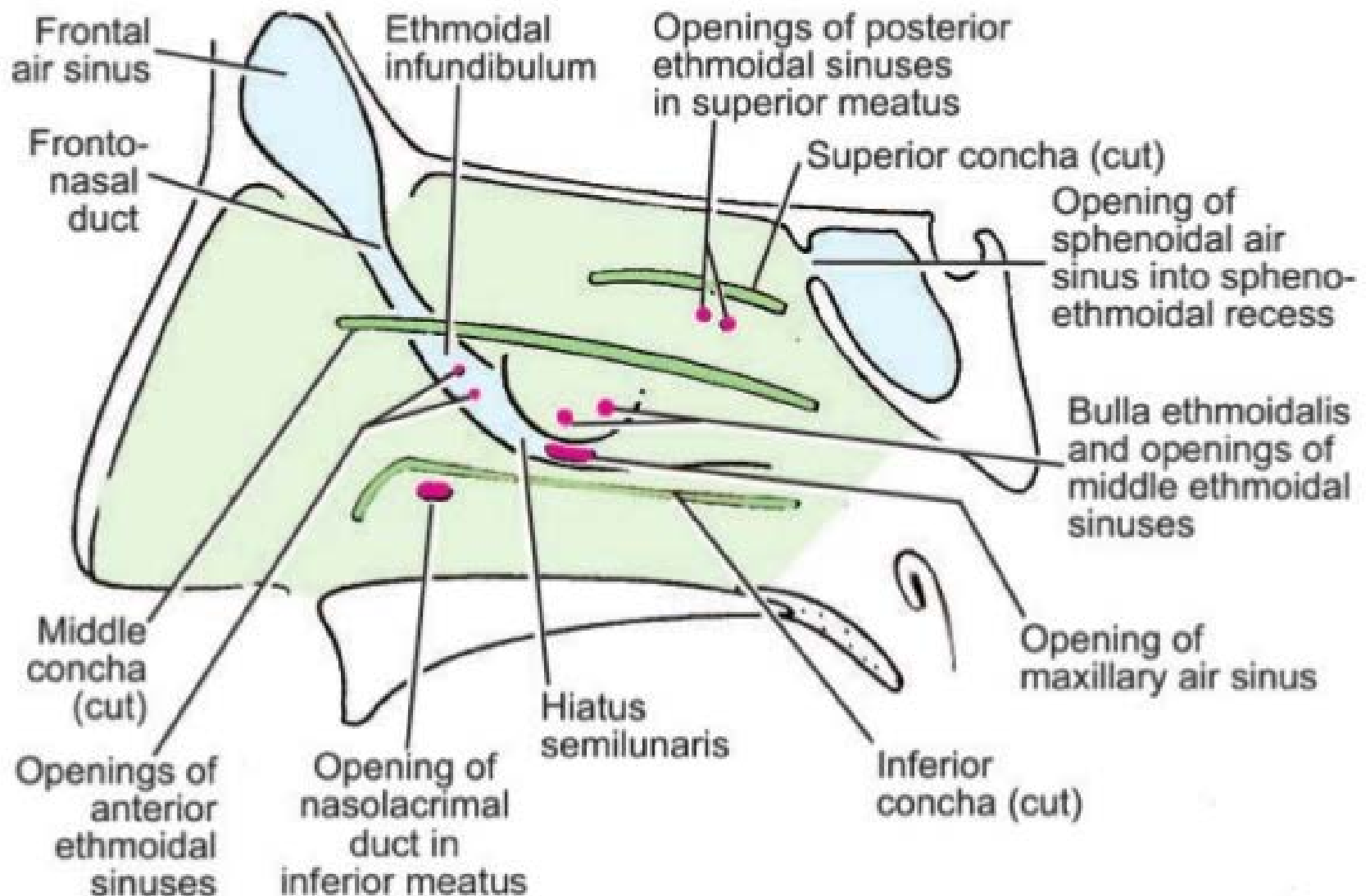


Fig. 8.227 Paranasal sinuses and nasolacrimal duct.



45.6: Lateral wall of the nasal cavity with the mucous membrane intact



45.8A: Lateral wall of the nasal cavity after removing the conchae to reveal structures deep to them

Nasal cavity

Each Nasal cavity divided to 3 parts:

- ❖ *Vestibular part*
- ❖ *Olfactory part*
- ❖ *Respiratory part*

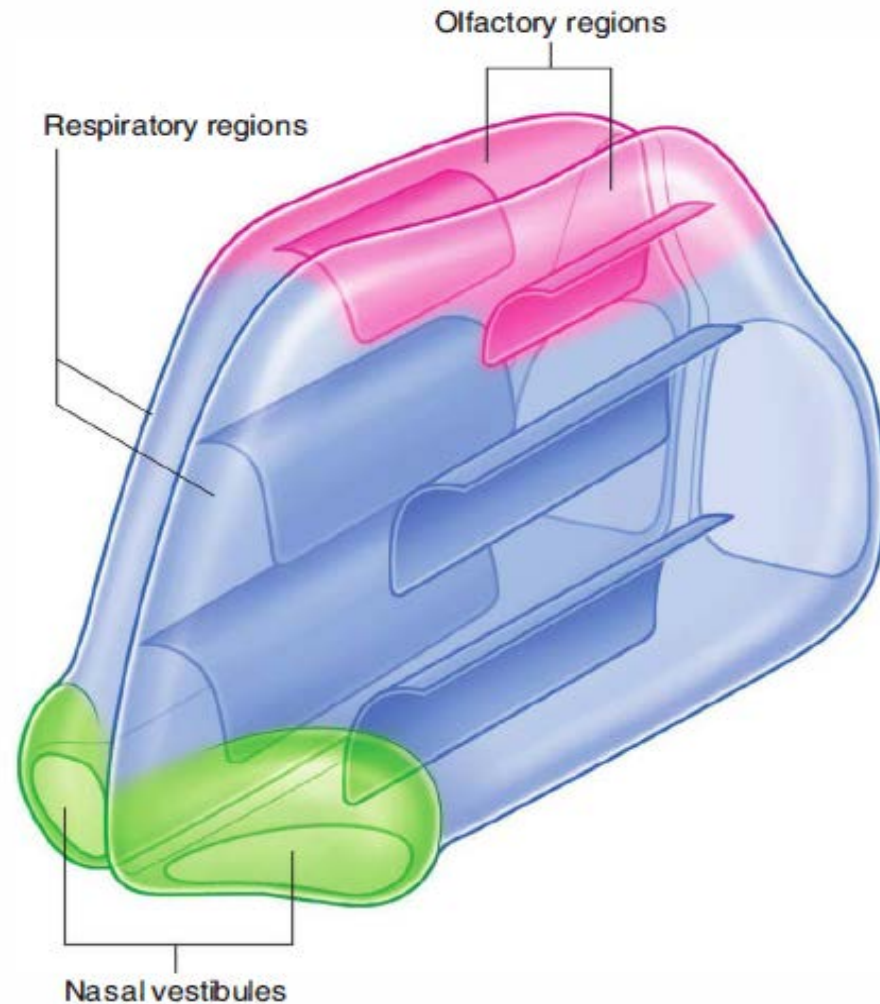


Fig. 8.228 Regions of the nasal cavities.

Nasal cavity



Artery :

Facial / Ophthalmic / Maxillary

Vain :

Facial / Ophthalmic / Maxillary

General Sense:

Nasal Branch Of Maxillary

Lat. Nasal N.

Ant. Ethmoidal N.

Spicial Sense:

Olfactory N. (1 St Cranial Nerve)

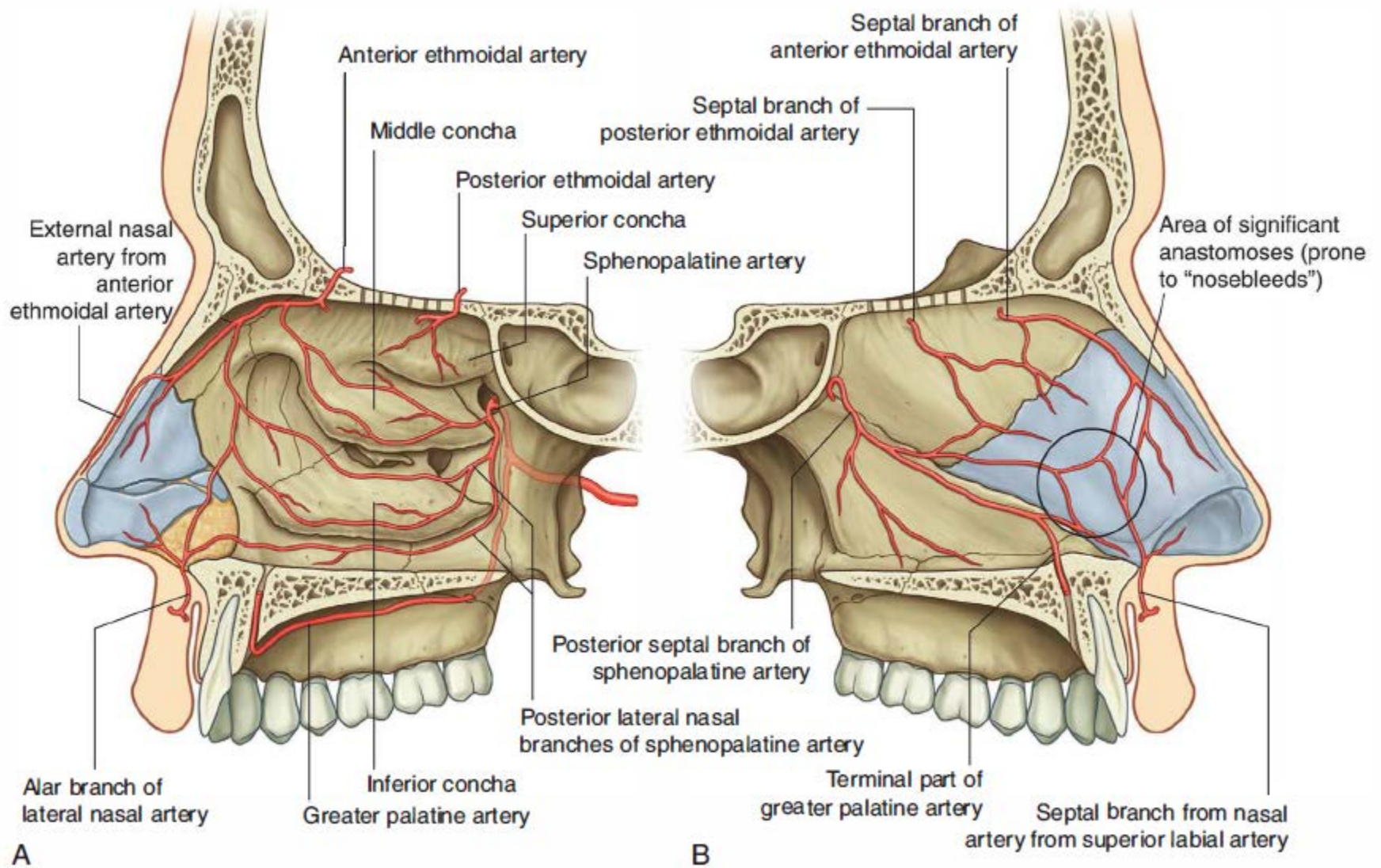


Fig. 8.239 Arterial supply of the nasal cavities. **A.** Lateral wall of the right nasal cavity. **B.** Septum (medial wall of right nasal cavity).

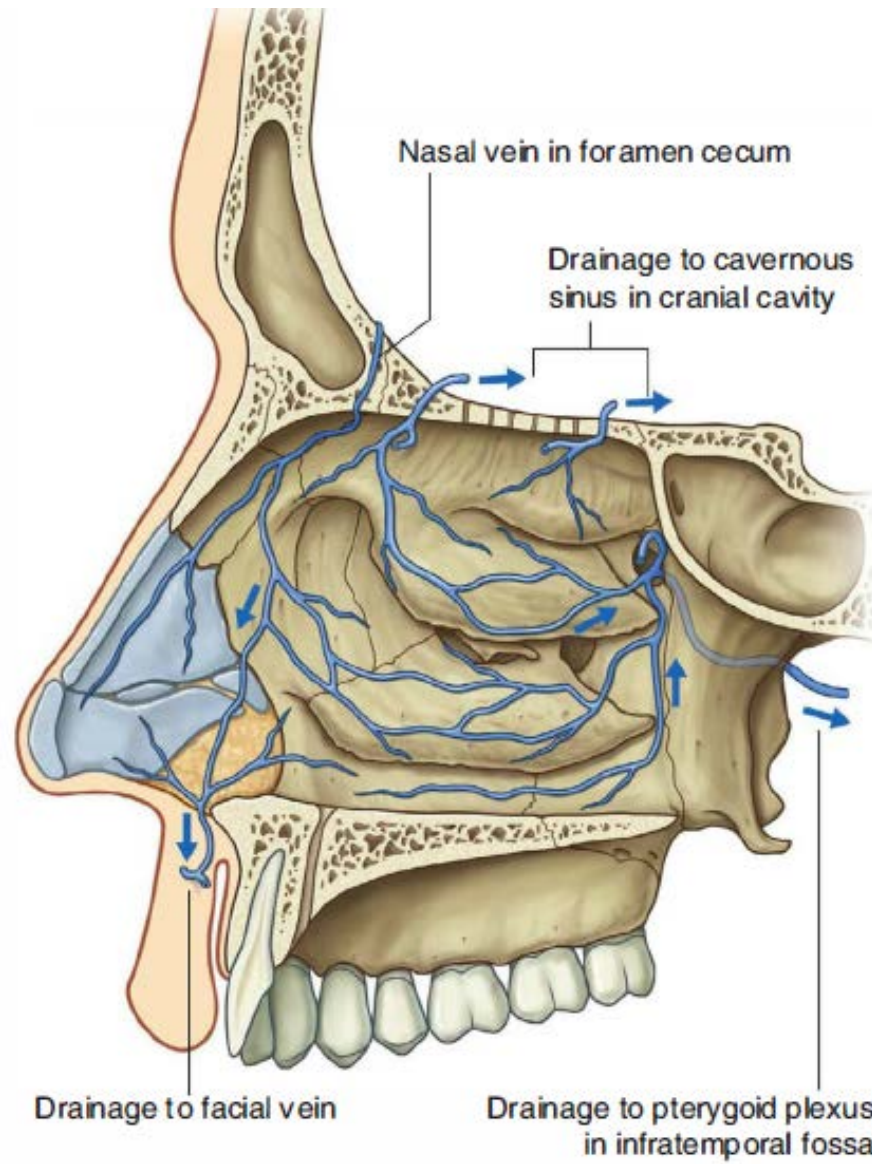
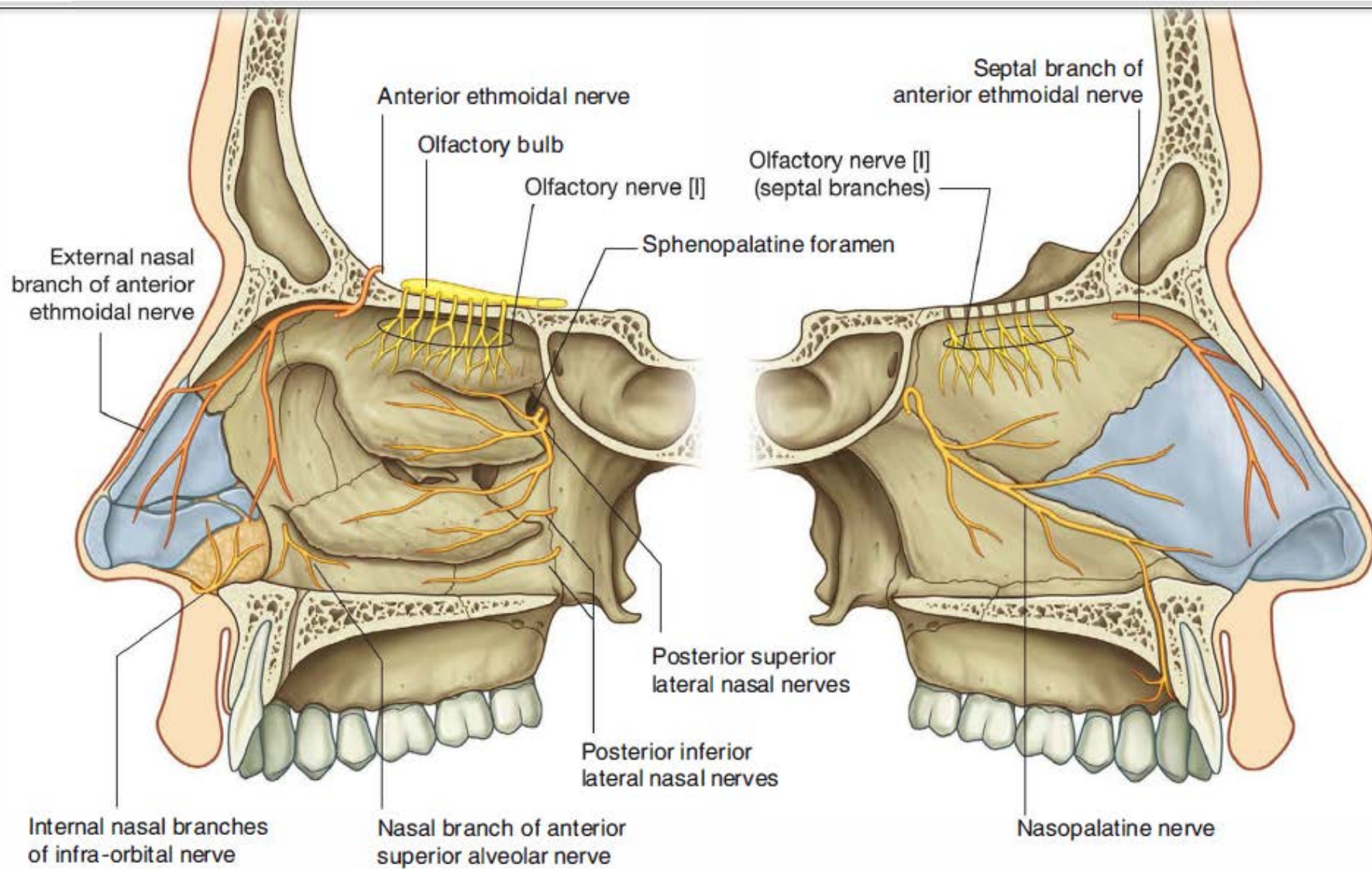
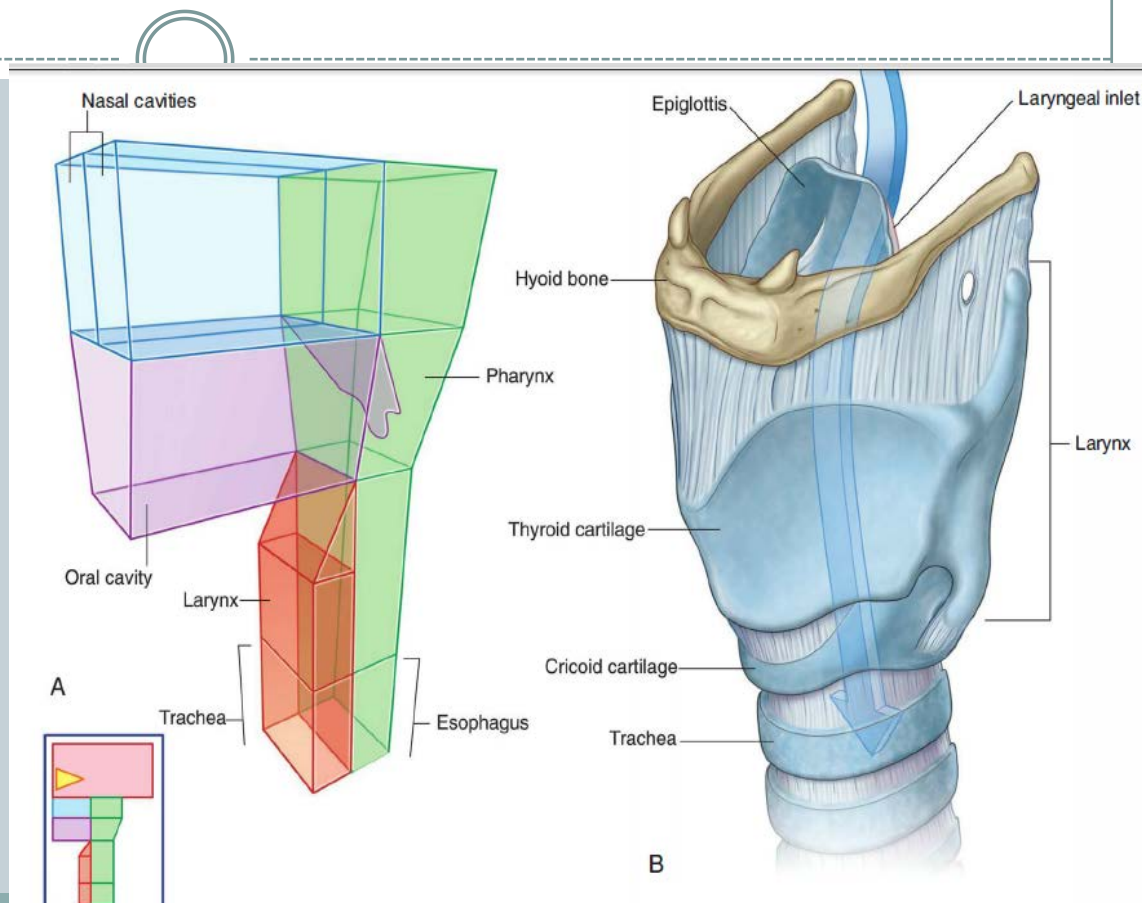


Fig. 8.240 Venous drainage of the nasal cavities.



Larynx

- Located Between C3 – C6
- Located Posterior To Hyoid M.
- Located Posterior To Thyroid Gland



Laryngeal cartilage

Functions:

Supporting

Phonation

Contain:

Thyroid

Cricoid

Epiglott

Arytenoid

Cuniculate

Cuneiform

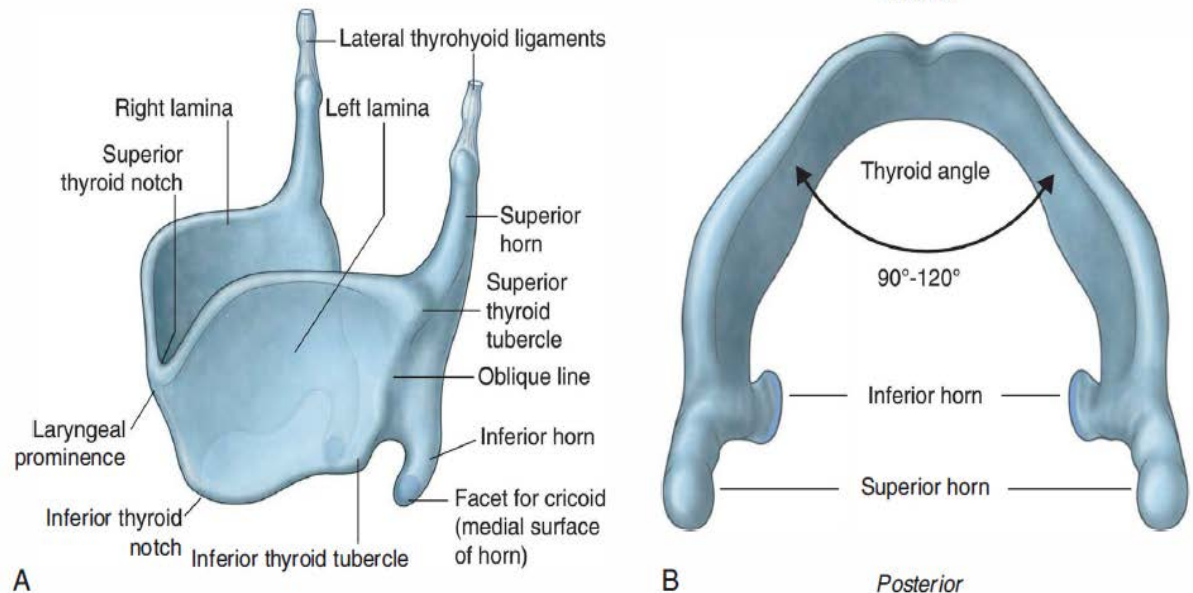


Fig. 8.207 Thyroid cartilage. A. Anterolateral view. B. Superior view.

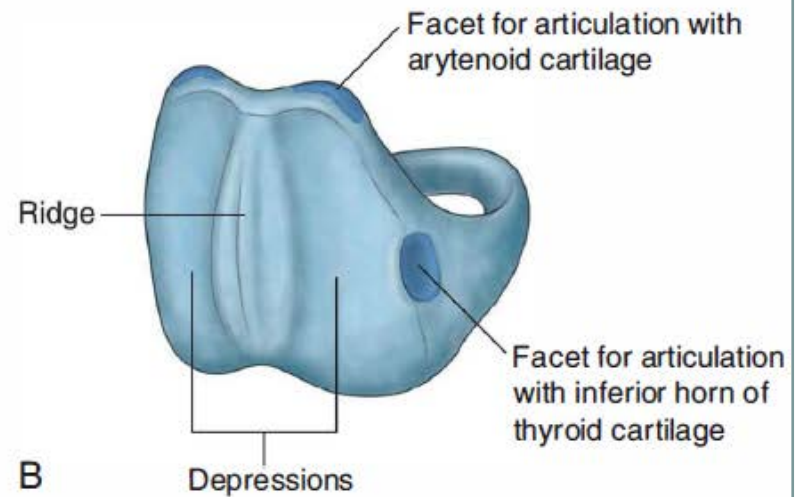
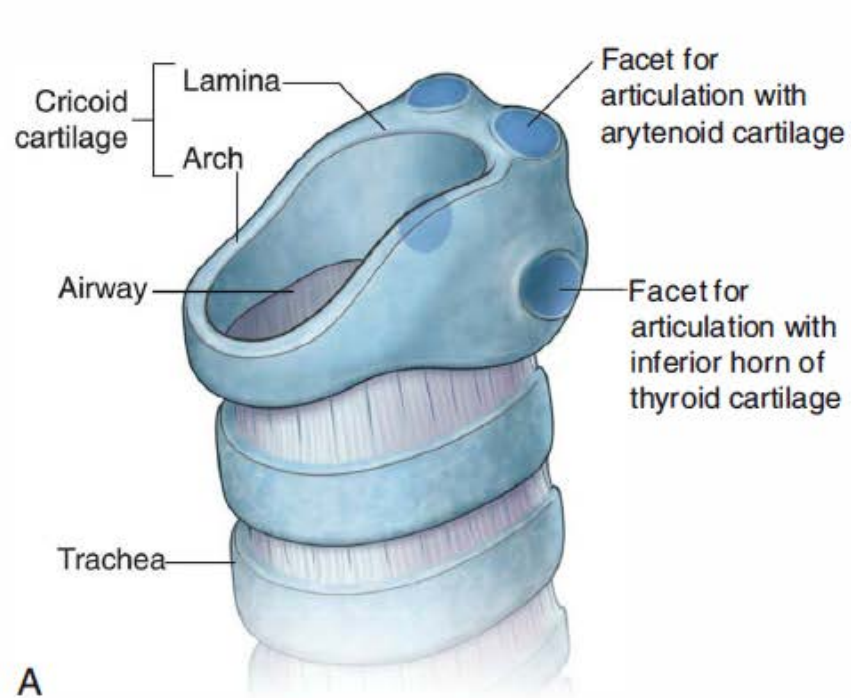


Fig. 8.206 Cricoid cartilage. **A.** Anterolateral view. **B.** Posterior view.

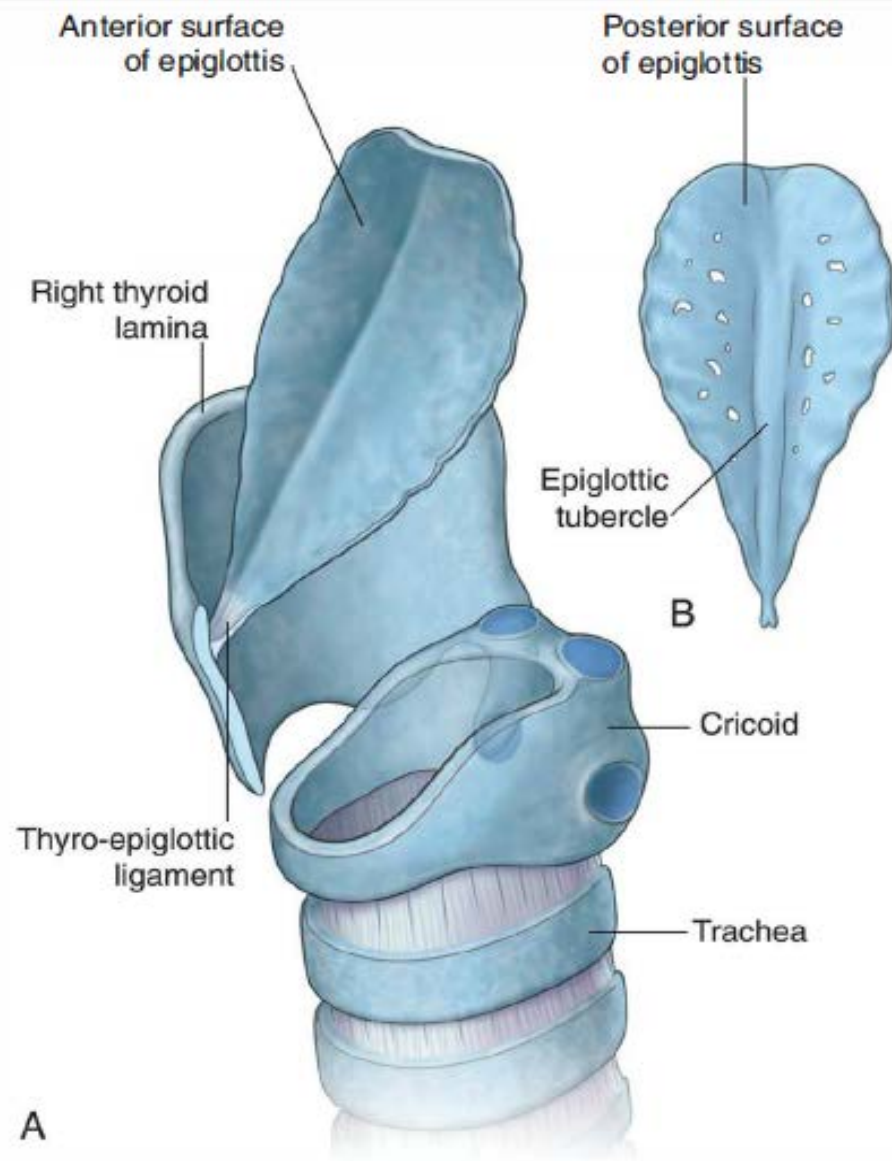


Fig. 8.208 Epiglottis. **A.** Anterolateral view. **B.** Posterior surface.

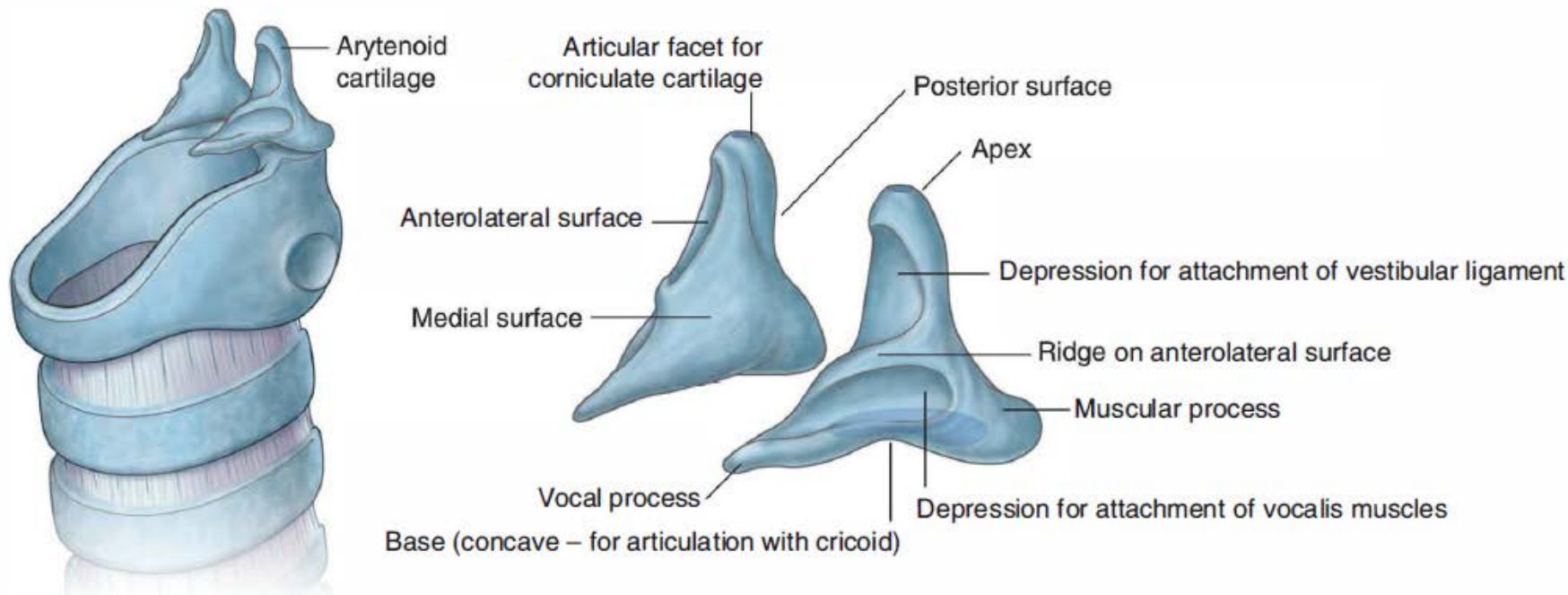


Fig. 8.209 Arytenoid cartilages.

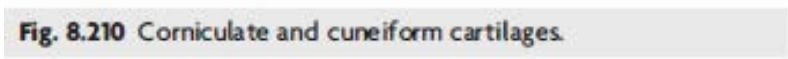
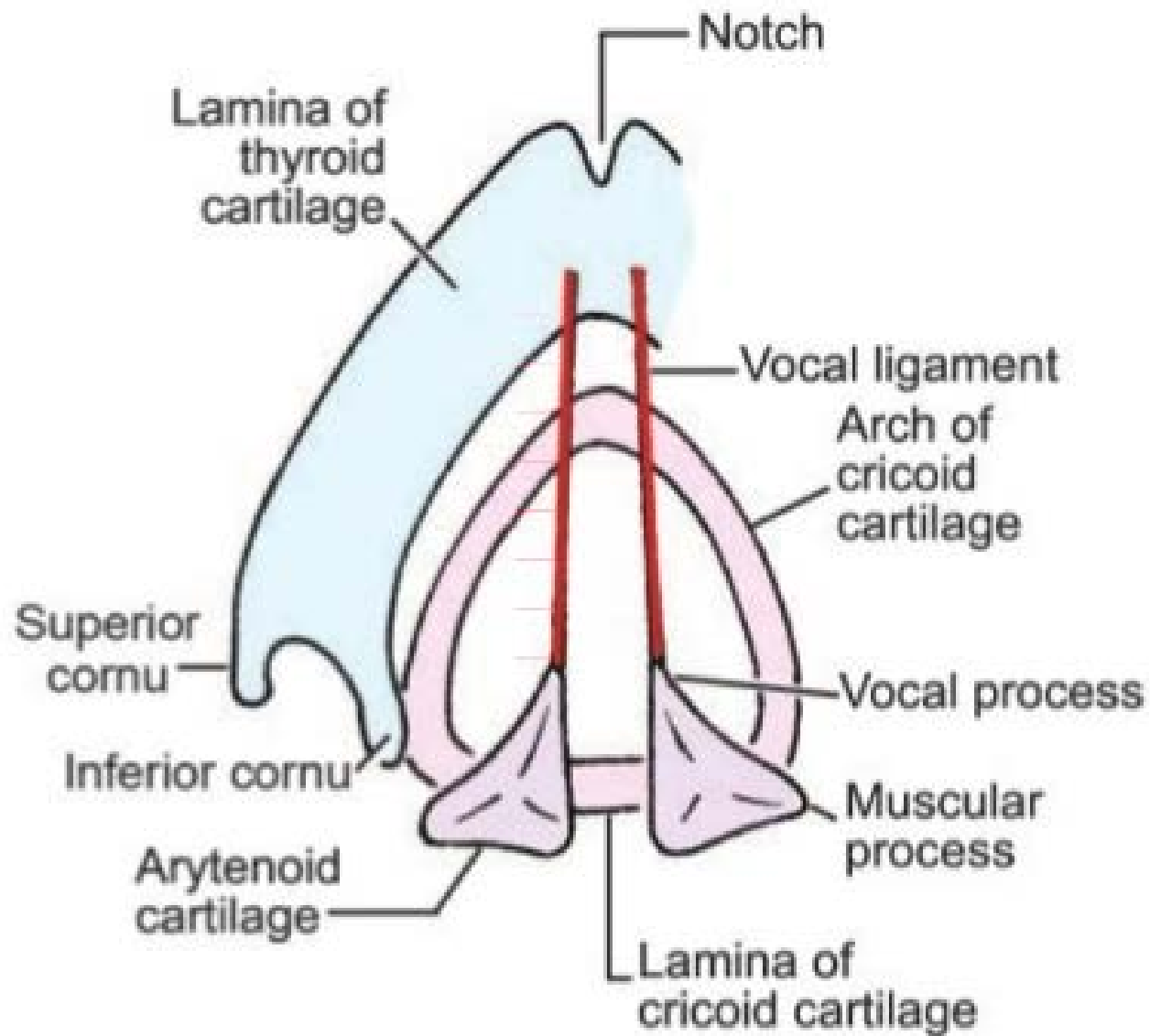


Fig. 8.210 Corniculate and cuneiform cartilages.



45.15: Cartilages of the larynx seen from above

Membrane And Ligament Of Larynx

Ext. laryngeal lig.

Thyrohyoid

Thyroepiglottic

Hyoepiglottic

cricotracheal

Int. laryngeal lig.

Quadriangular

Cricithyroid

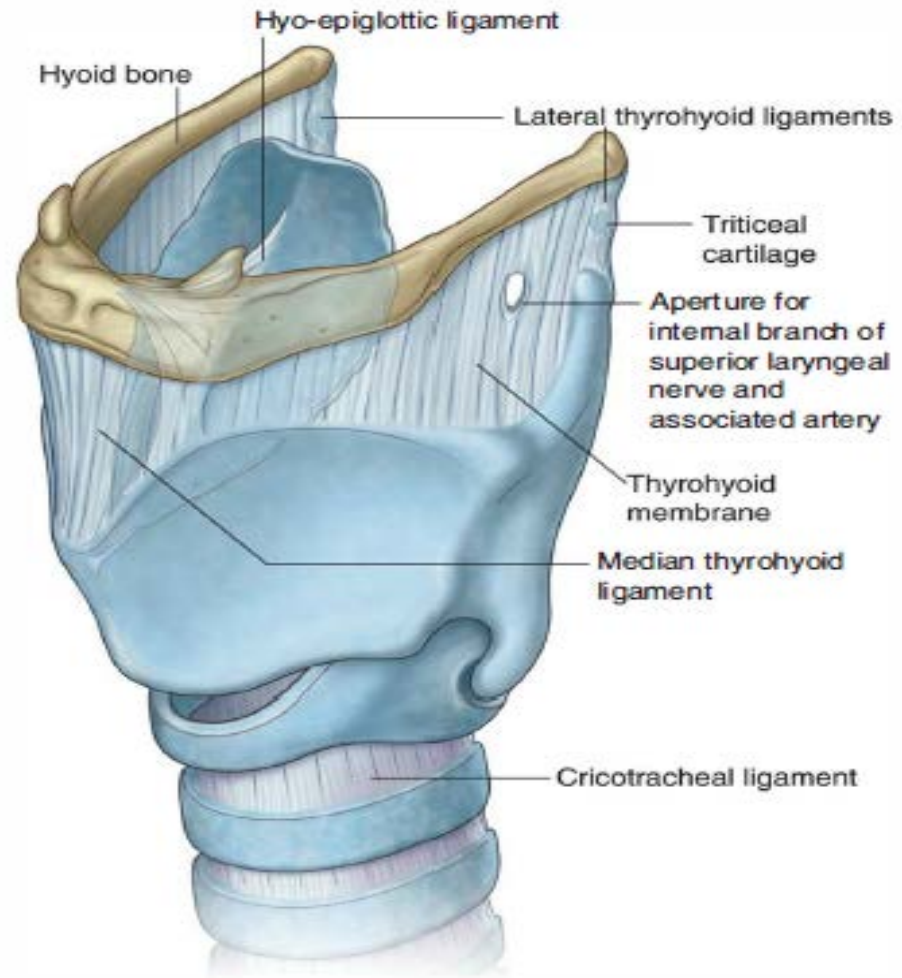


Fig. 8.211 Extrinsic ligaments of the larynx.

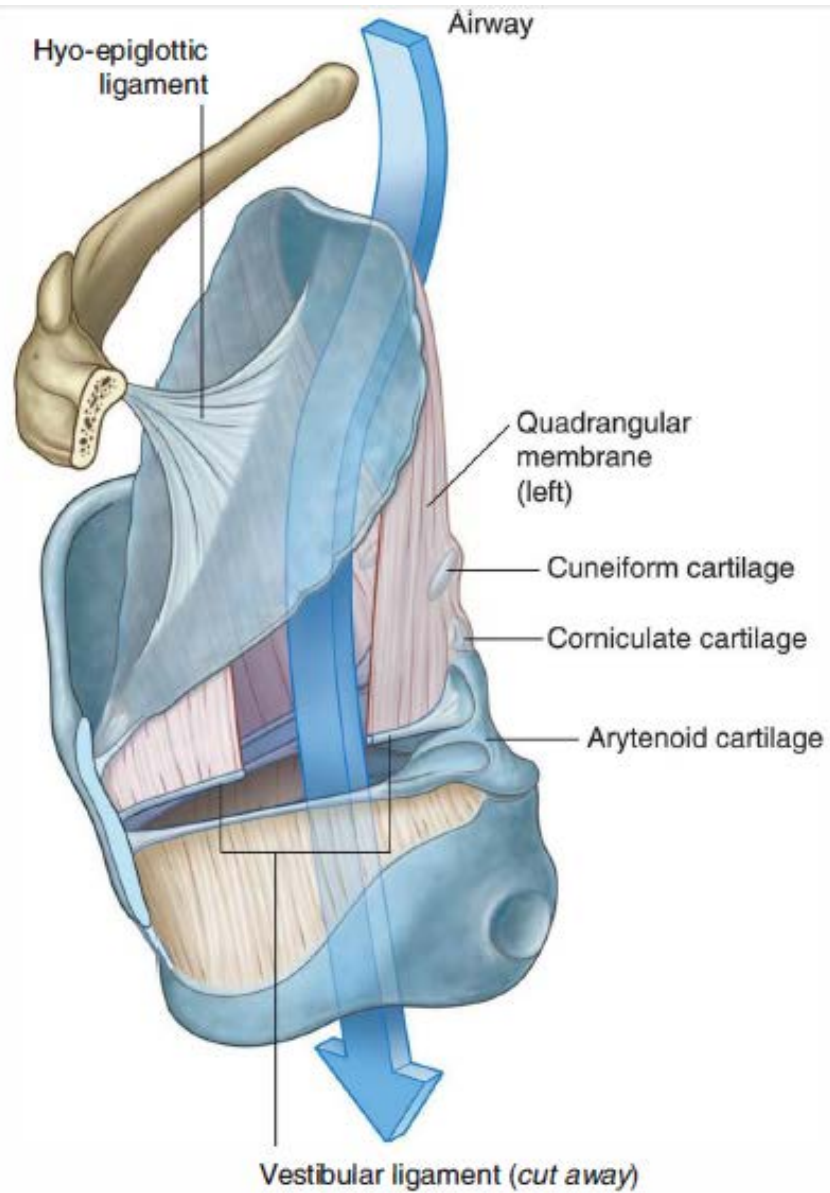


Fig. 8.213 Quadrangular membrane.

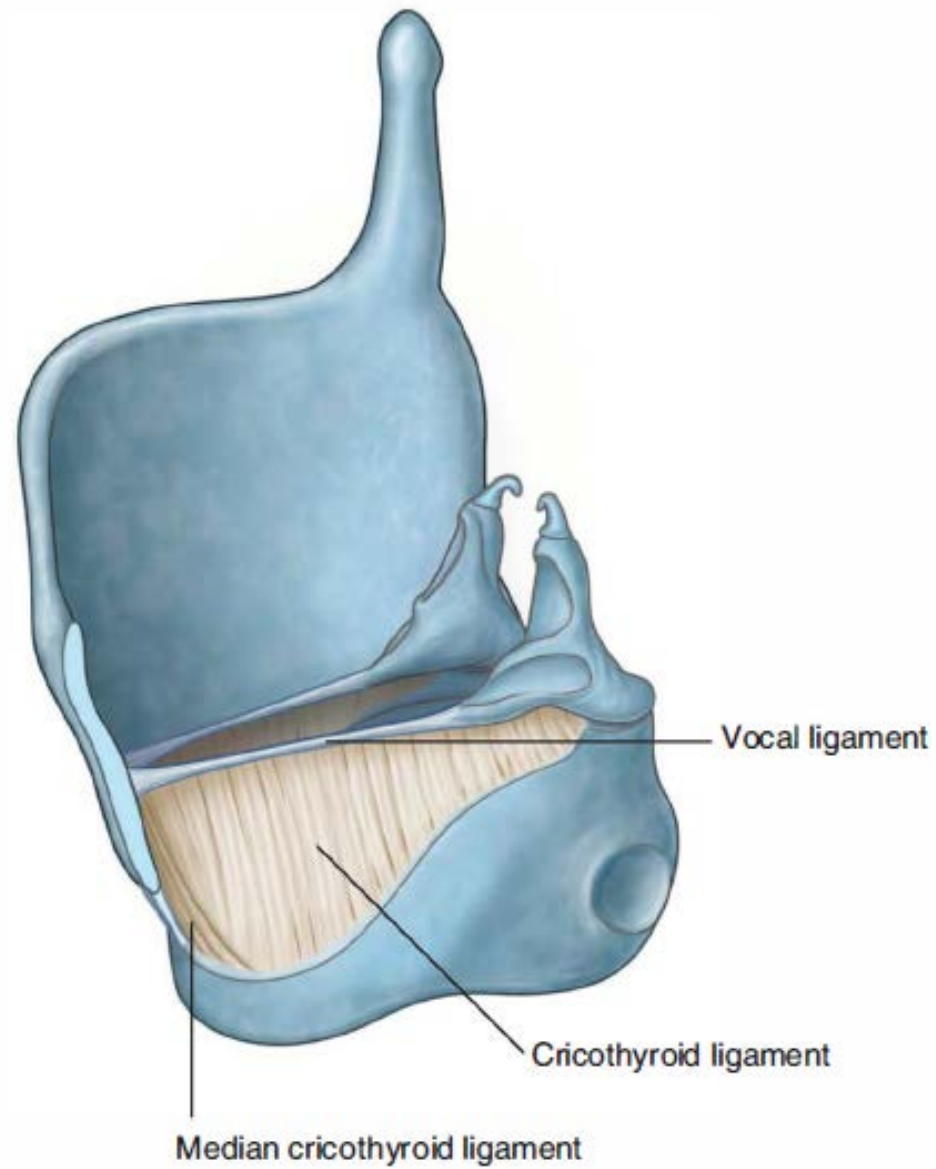


Fig. 8.212 Cricothyroid ligament.

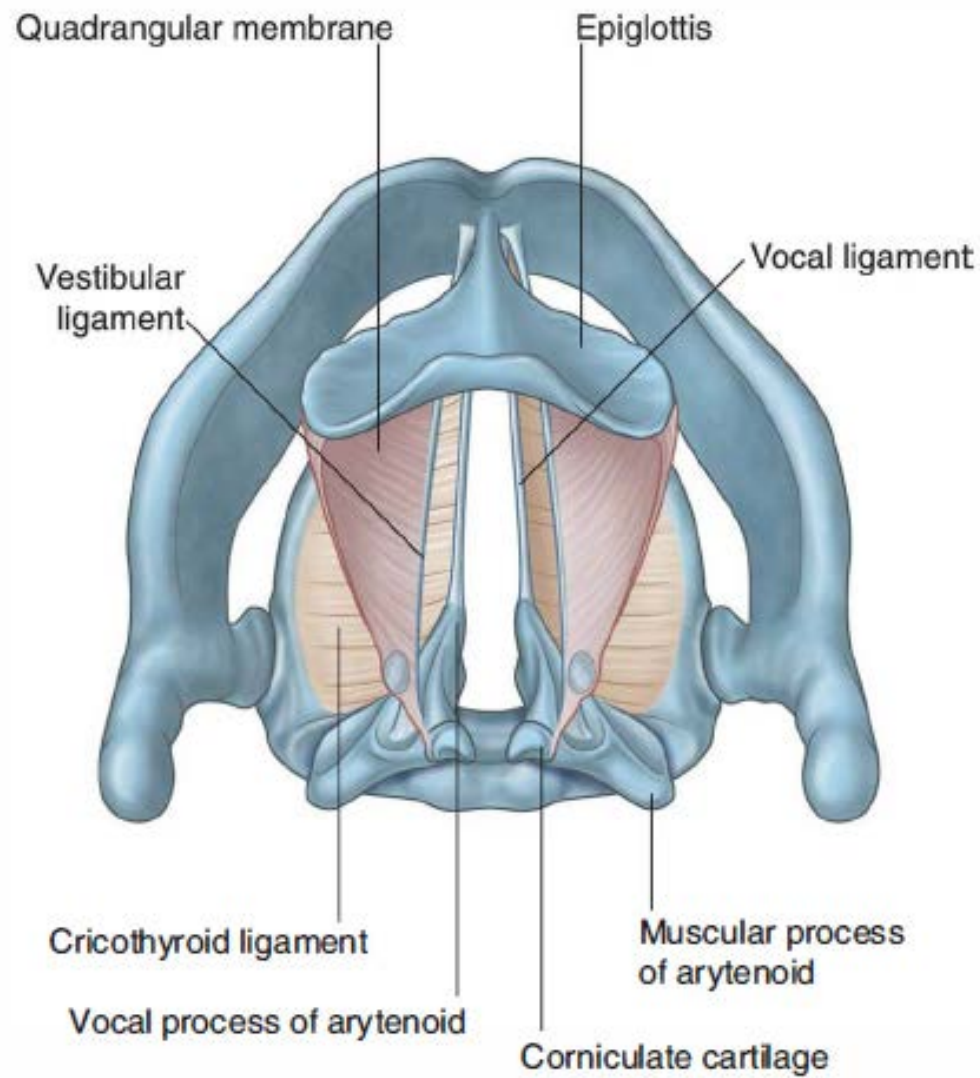


Fig. 8.214 Fibro-elastic membrane of the larynx (superior view).

Laryngeal Muscles:

Cricothyroid

Pos. Cricoarytenoid

Lat. Cricoarytenoid

Transversus Arytenoid

Thyro Arytenoid

Oblique Arytenoid

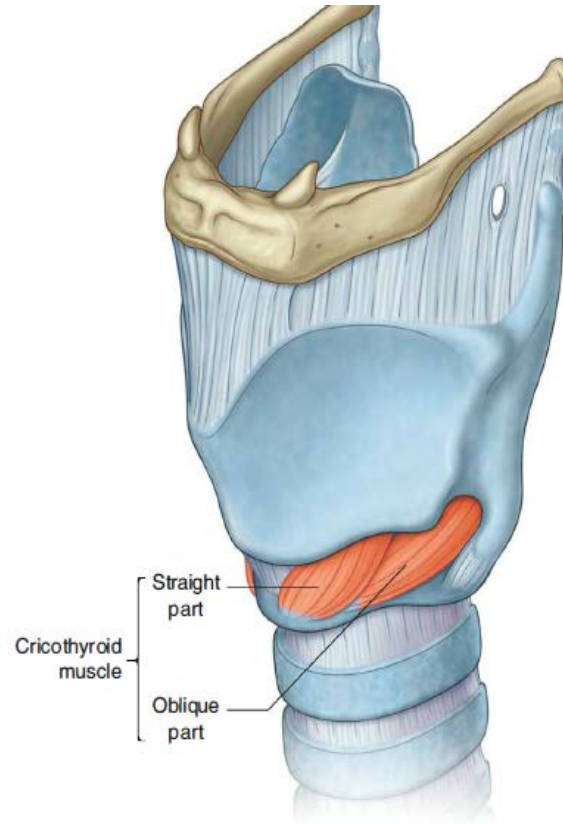


Fig. 8.218 Cricothyroid muscle.

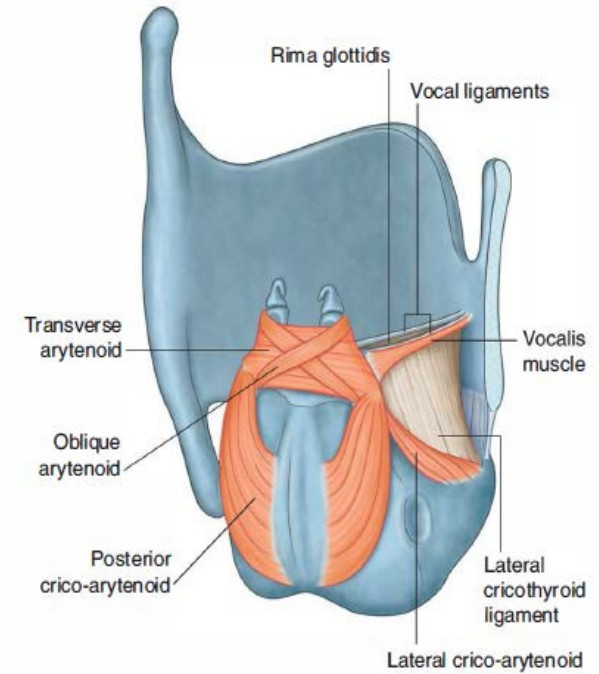


Fig. 8.219 Crico-arytenoid, oblique and transverse arytenoid, and vocalis muscles.

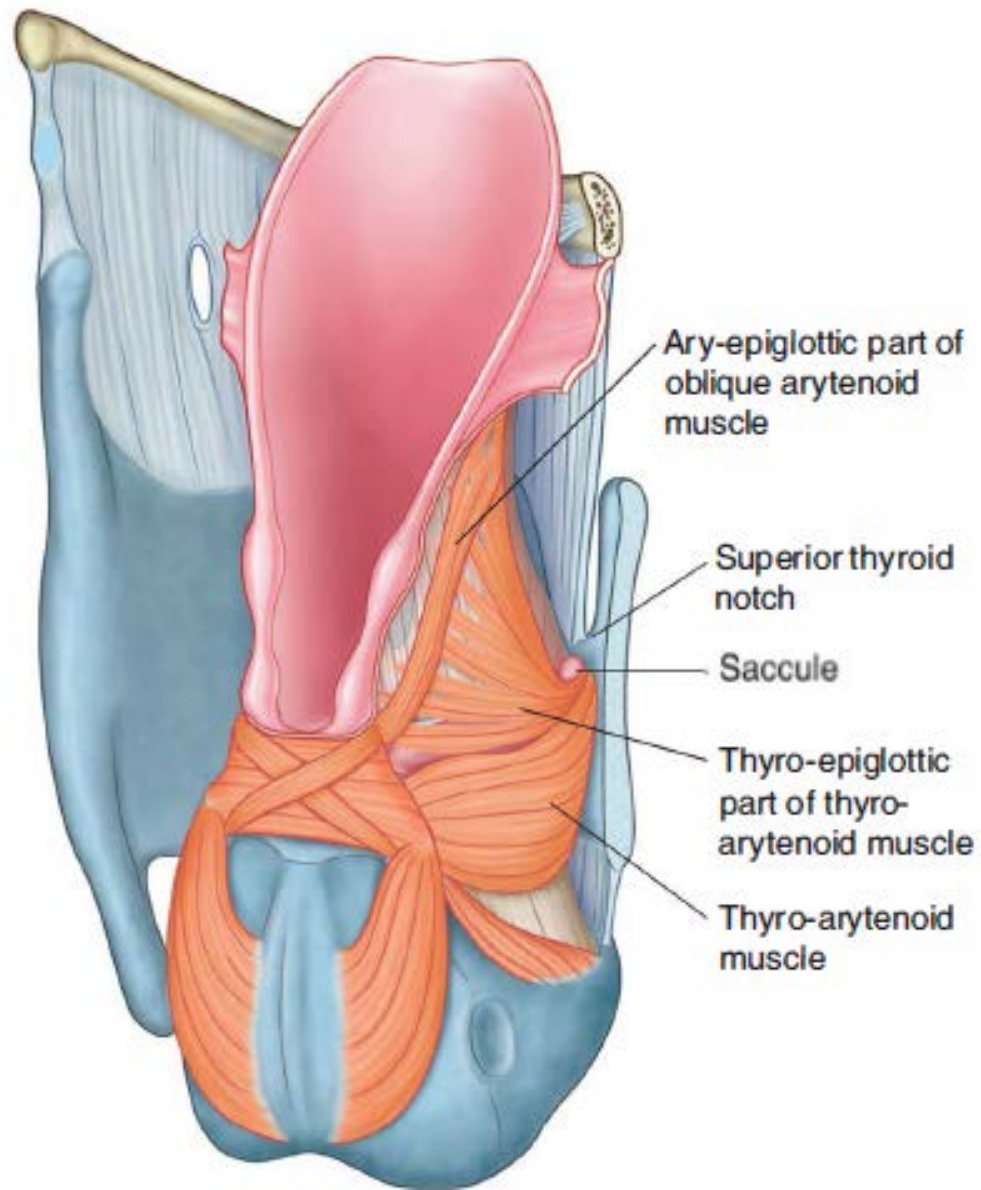
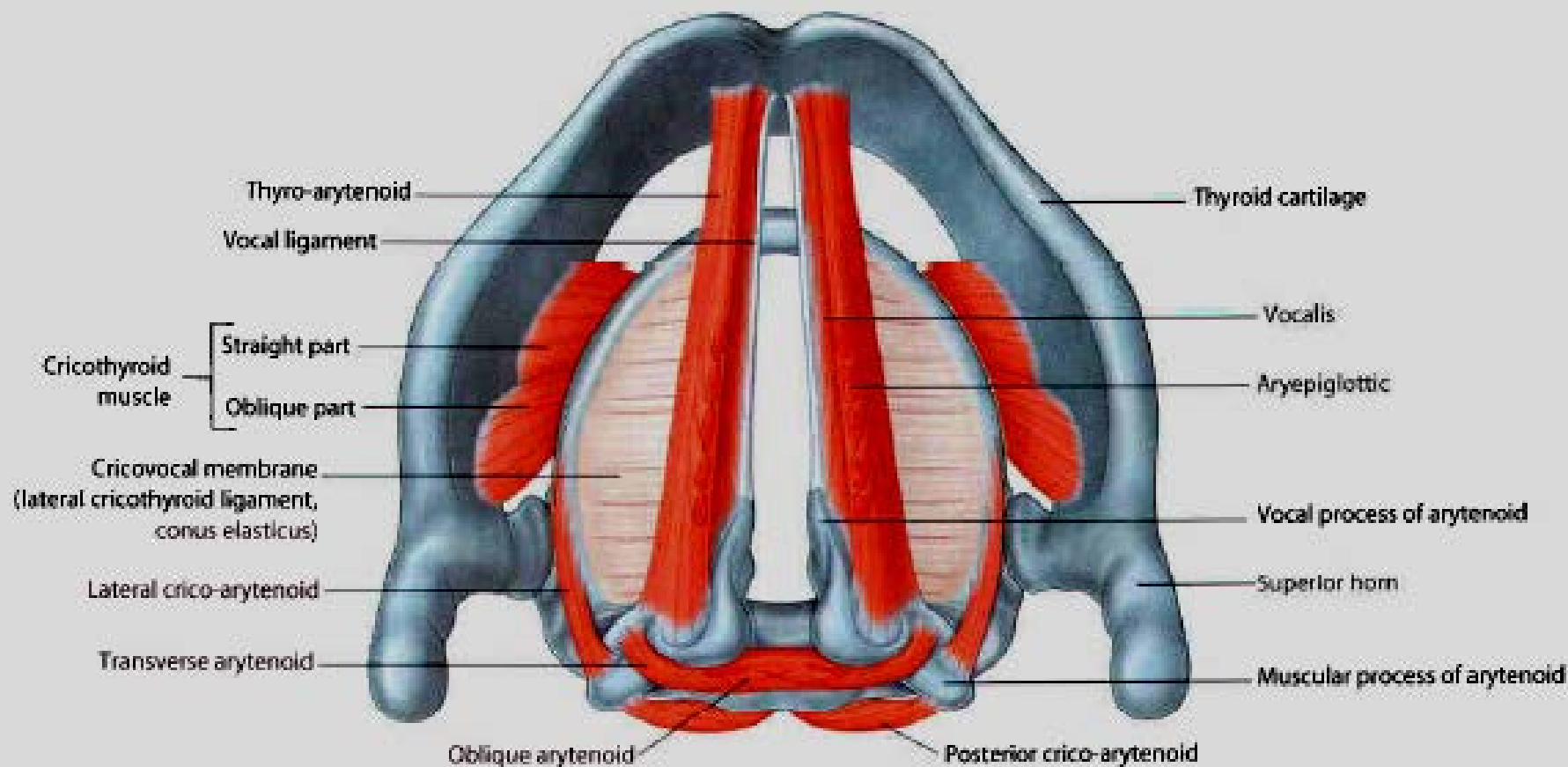


Fig. 8.220 Thyro-arytenoid muscle.



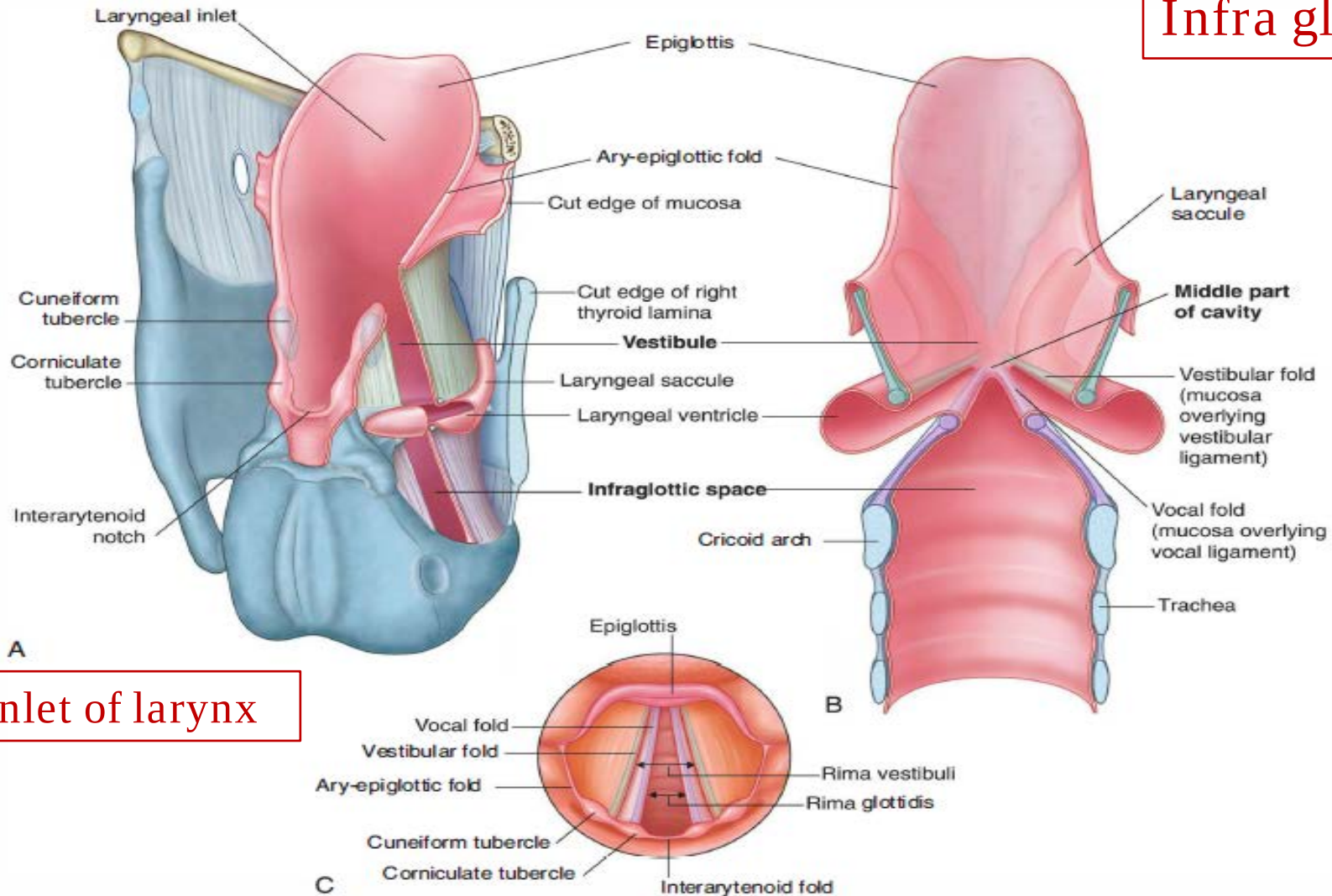
Superior view

Table 8.19 Intrinsic muscles of the larynx

Muscle	Origin	Insertion	Innervation	Function
Cricothyroid	Anterolateral aspect of arch of cricoid cartilage	Oblique part—inferior horn of the thyroid cartilage; straight part—inferior margin of thyroid cartilage	External branch of superior laryngeal nerve from the vagus nerve [X]	Forward and downward rotation of the thyroid cartilage at the cricothyroid joint
Posterior crico-arytenoid	Oval depression on posterior surface of lamina of cricoid cartilage	Posterior surface of muscular process of arytenoid cartilage	Recurrent laryngeal branch of the vagus nerve [X]	Abduction and external rotation of the arytenoid cartilage. The posterior crico-arytenoid muscles are the primary abductors of the vocal folds. In other words, they are the primary openers of the rima glottidis.
Lateral crico-arytenoid	Superior surface of arch of cricoid cartilage	Anterior surface of muscular process of arytenoid cartilage	Recurrent laryngeal branch of the vagus nerve [X]	Internal rotation of the arytenoid cartilage and adduction of vocal folds
Transverse arytenoid	Lateral border of posterior surface of arytenoid cartilage	Lateral border of posterior surface of opposite arytenoid cartilage	Recurrent laryngeal branch of the vagus nerve [X]	Adduction of arytenoid cartilages
Oblique arytenoid	Posterior surface of muscular process of arytenoid cartilage	Posterior surface of apex of adjacent arytenoid cartilage; extends into ary-epiglottic fold	Recurrent laryngeal branch of the vagus nerve [X]	Sphincter of the laryngeal inlet
Thyro-arytenoid	Thyroid angle and adjacent cricothyroid ligament	Anterolateral surface of arytenoid cartilage; some fibers continue in ary-epiglottic folds to the lateral margin of the epiglottis	Recurrent laryngeal branch of the vagus nerve [X]	Sphincter of vestibule and of laryngeal inlet
Vocalis	Lateral surface of vocal process of arytenoid cartilage	Vocal ligament and thyroid angle	Recurrent laryngeal branch of the vagus nerve [X]	Adjusts tension in vocal folds

Cavity Of Larynx

Vestibule
Middle part
(ventricle)
Infra glottic

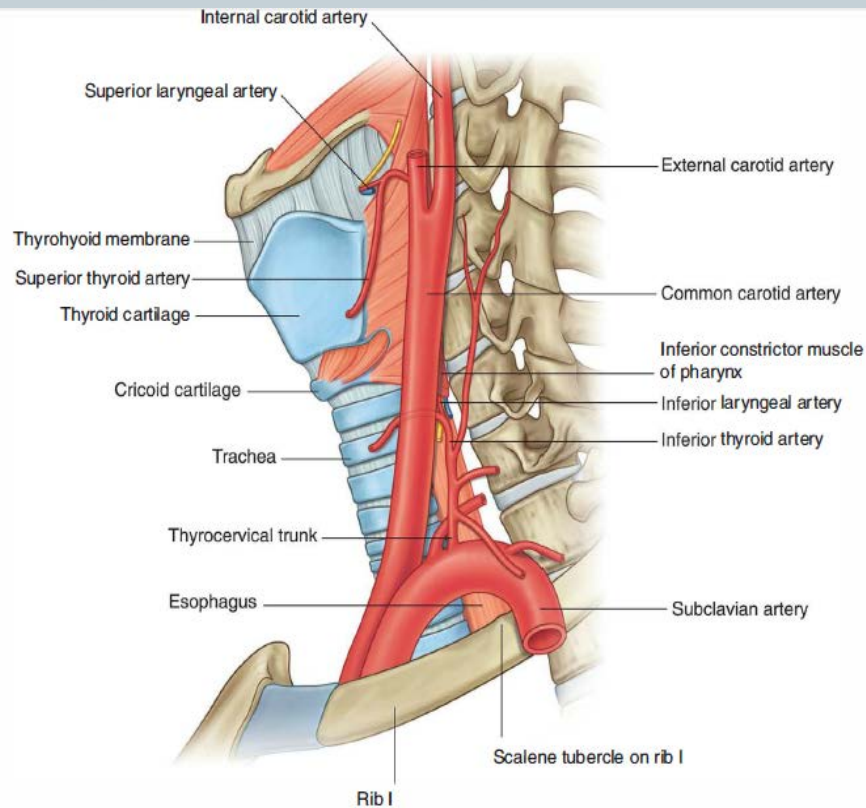


Inlet of larynx

Laryngeal Vessel

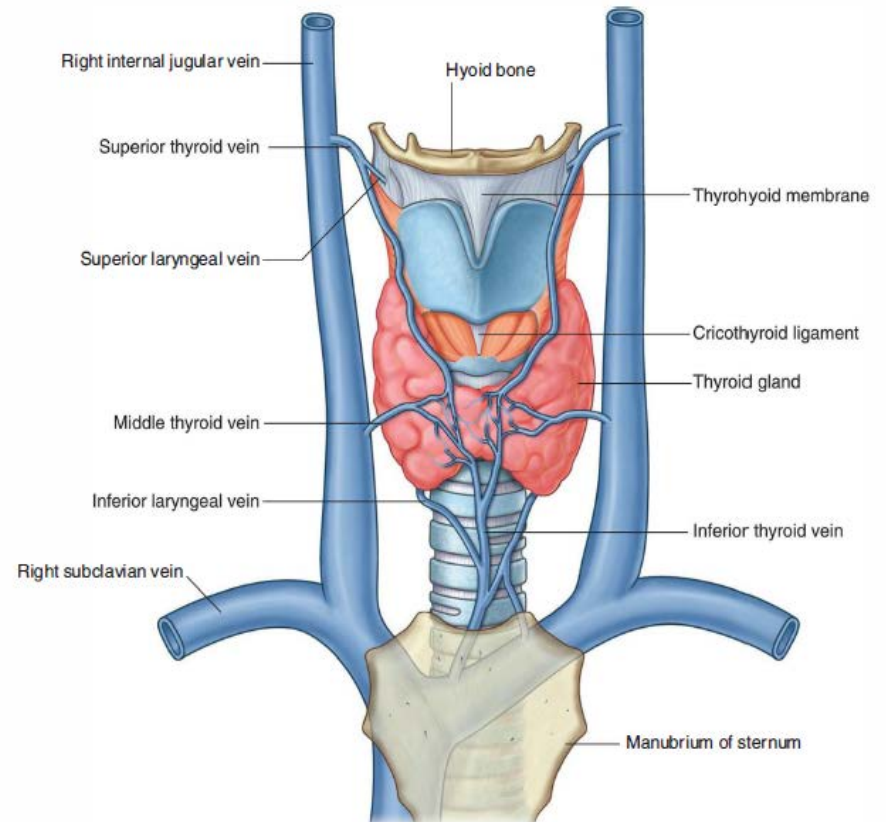
Artery:

Sup. & Inf. Laryngeal Artery



Vain:

The Same As Artery



Laryngeal nerve

Sensory nerve:

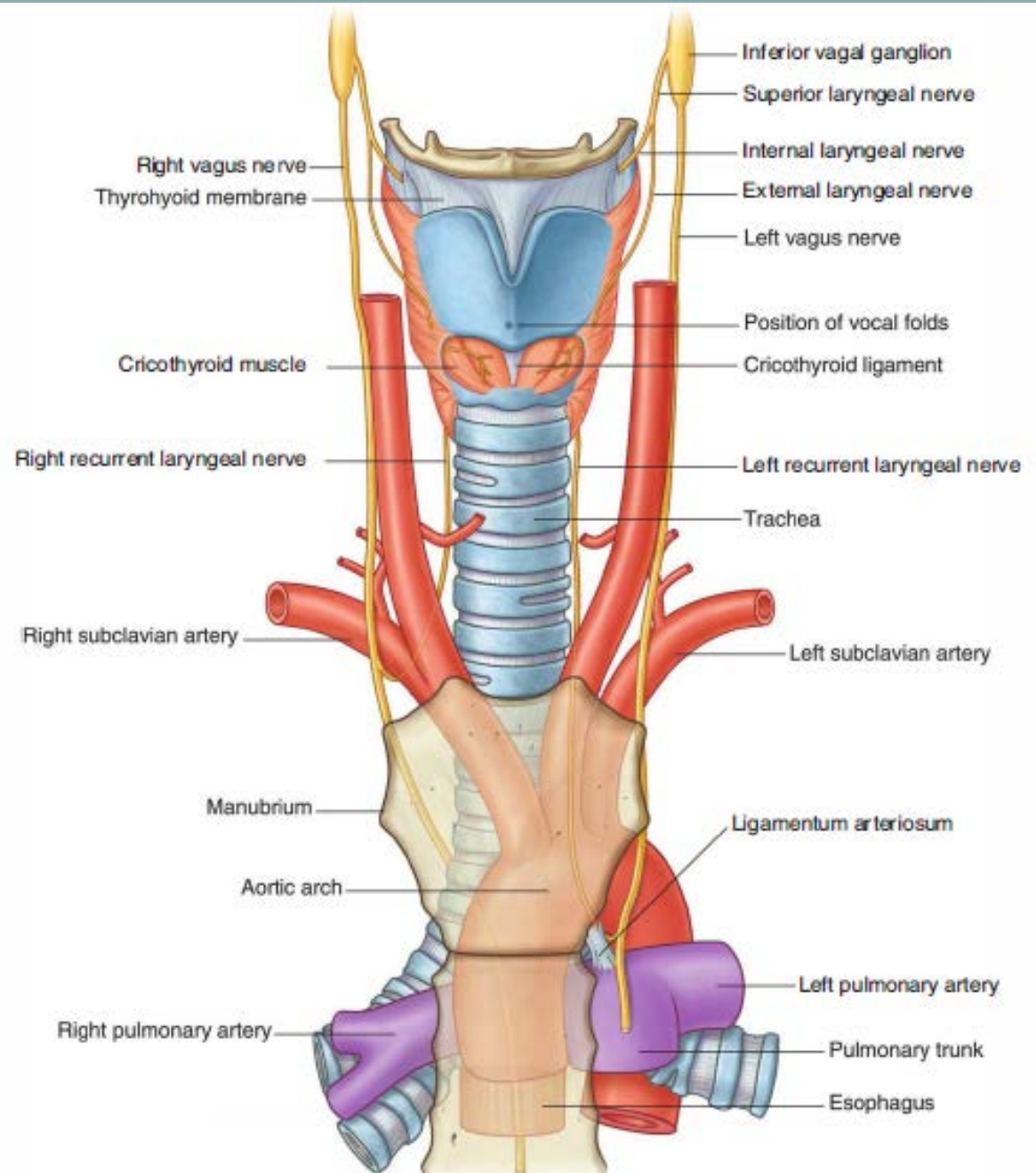
Int. laryngeal

Recurrent laryngeal

Motor nerve:

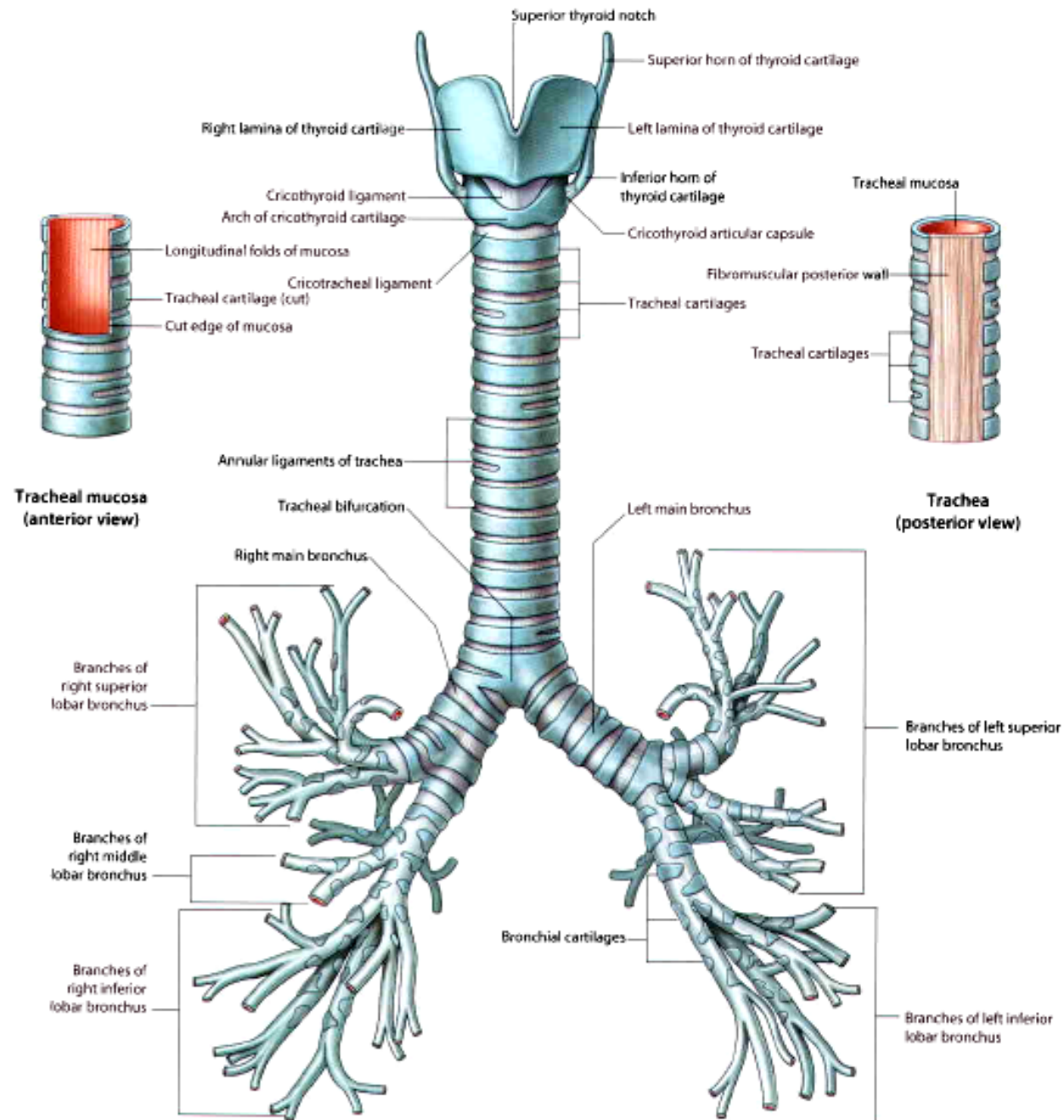
Ext. laryngeal

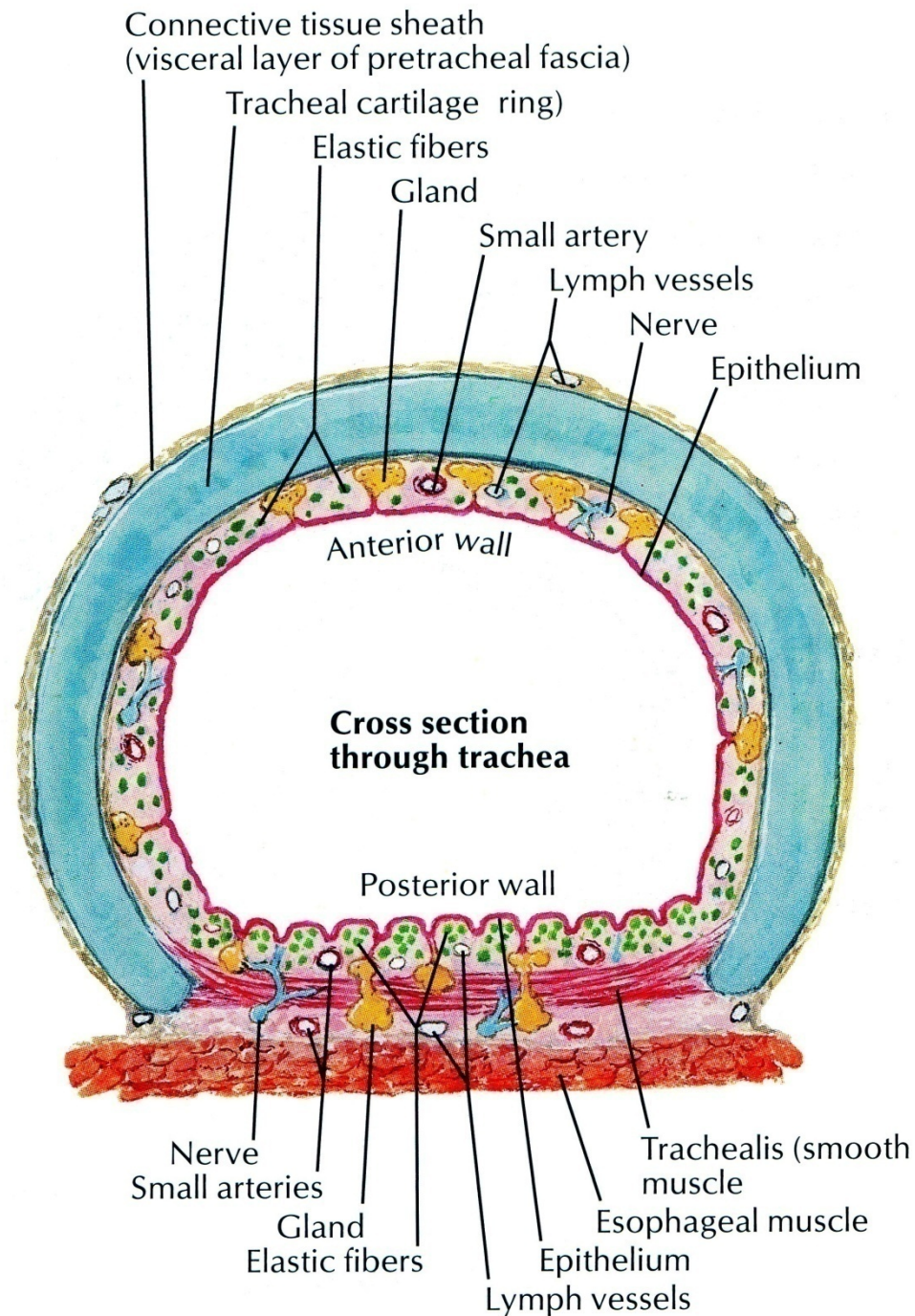
Recurrent laryngeal

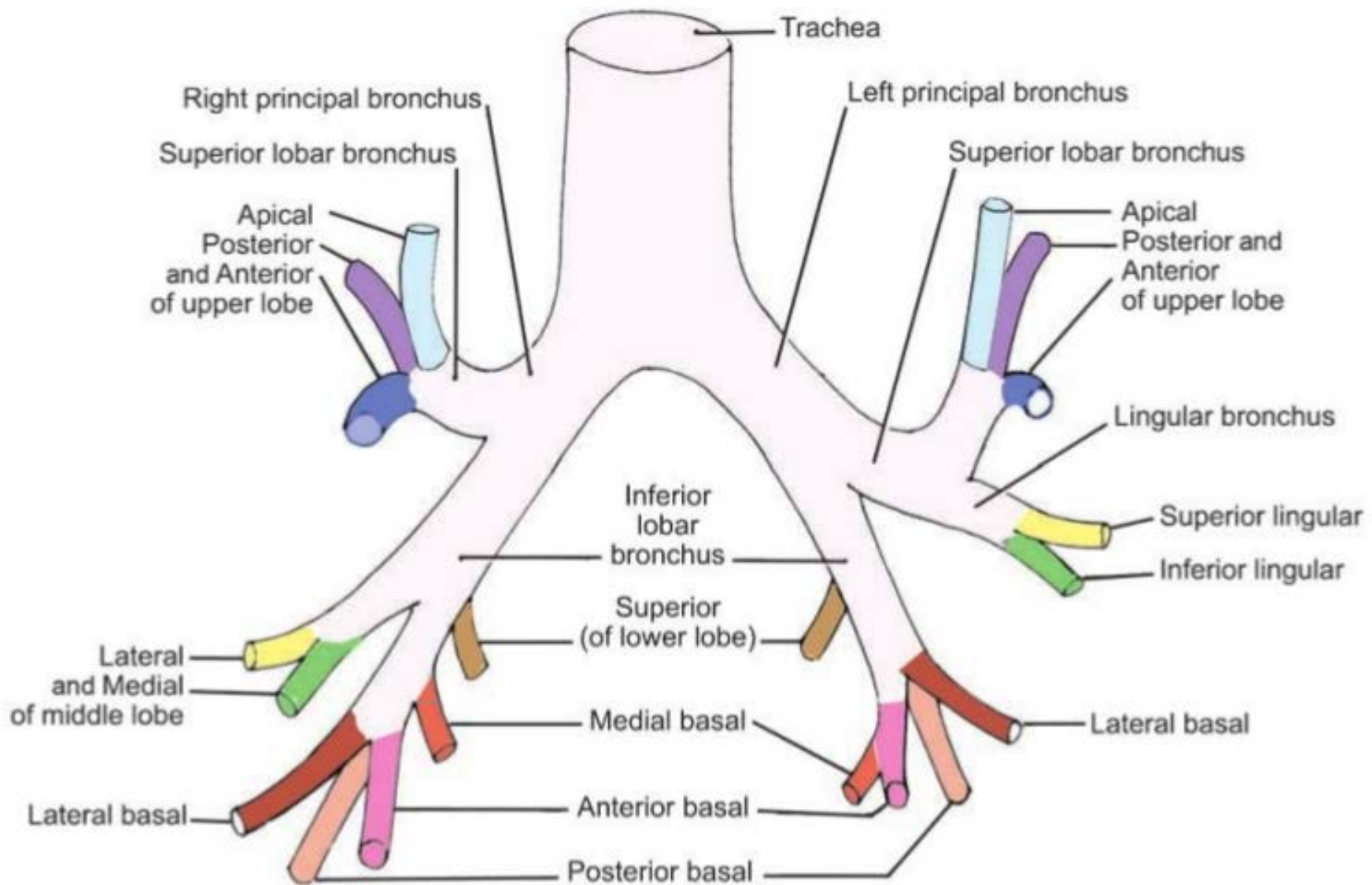


Trachea

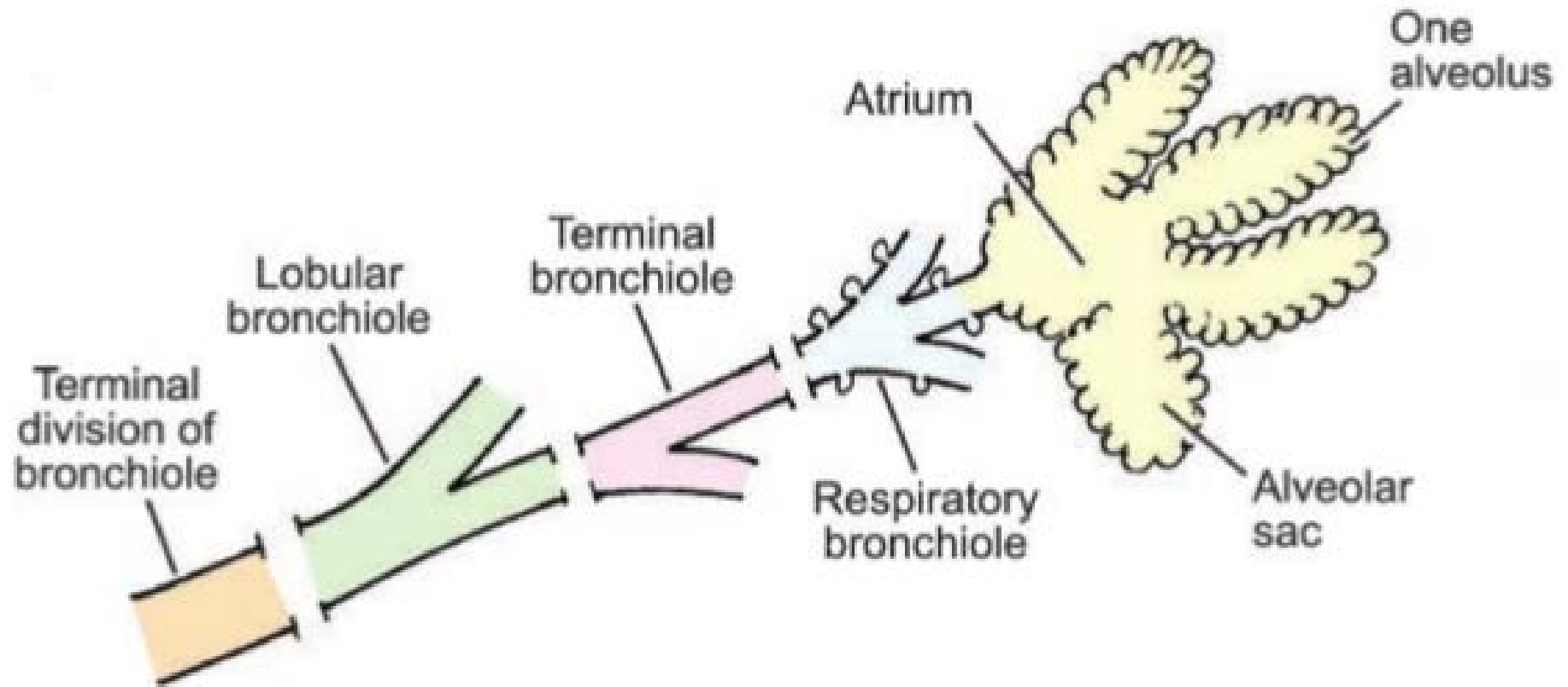
- Between C6-T4,5
- Length: 12 Cm
- Diameter: 2 Cm
- Contain: 16-20 C Shape Cartilage
- Carina
- Main Bronchus : Rt. / Lef
- Lobar Bronchi
- Segmentl Bronchi



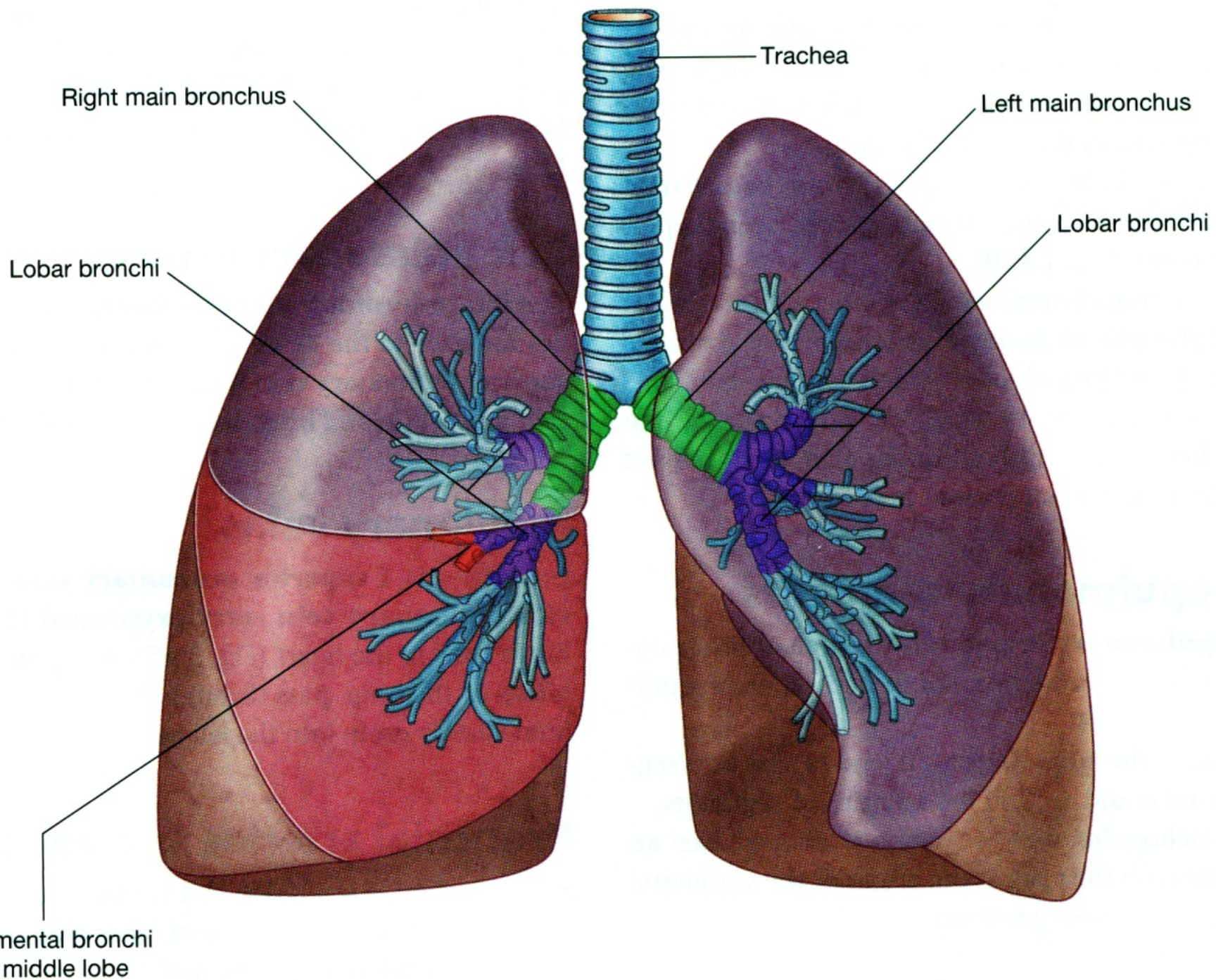


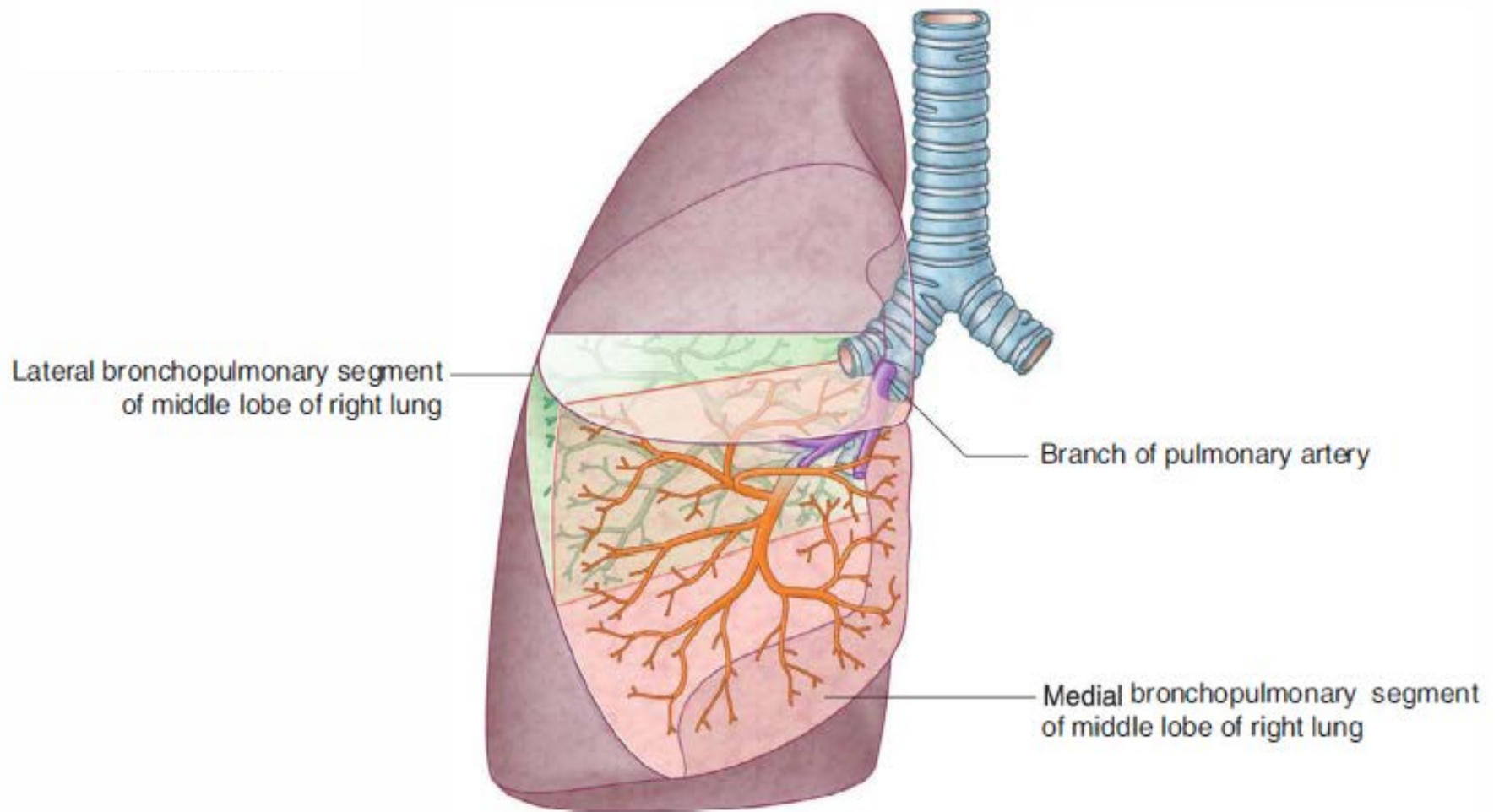


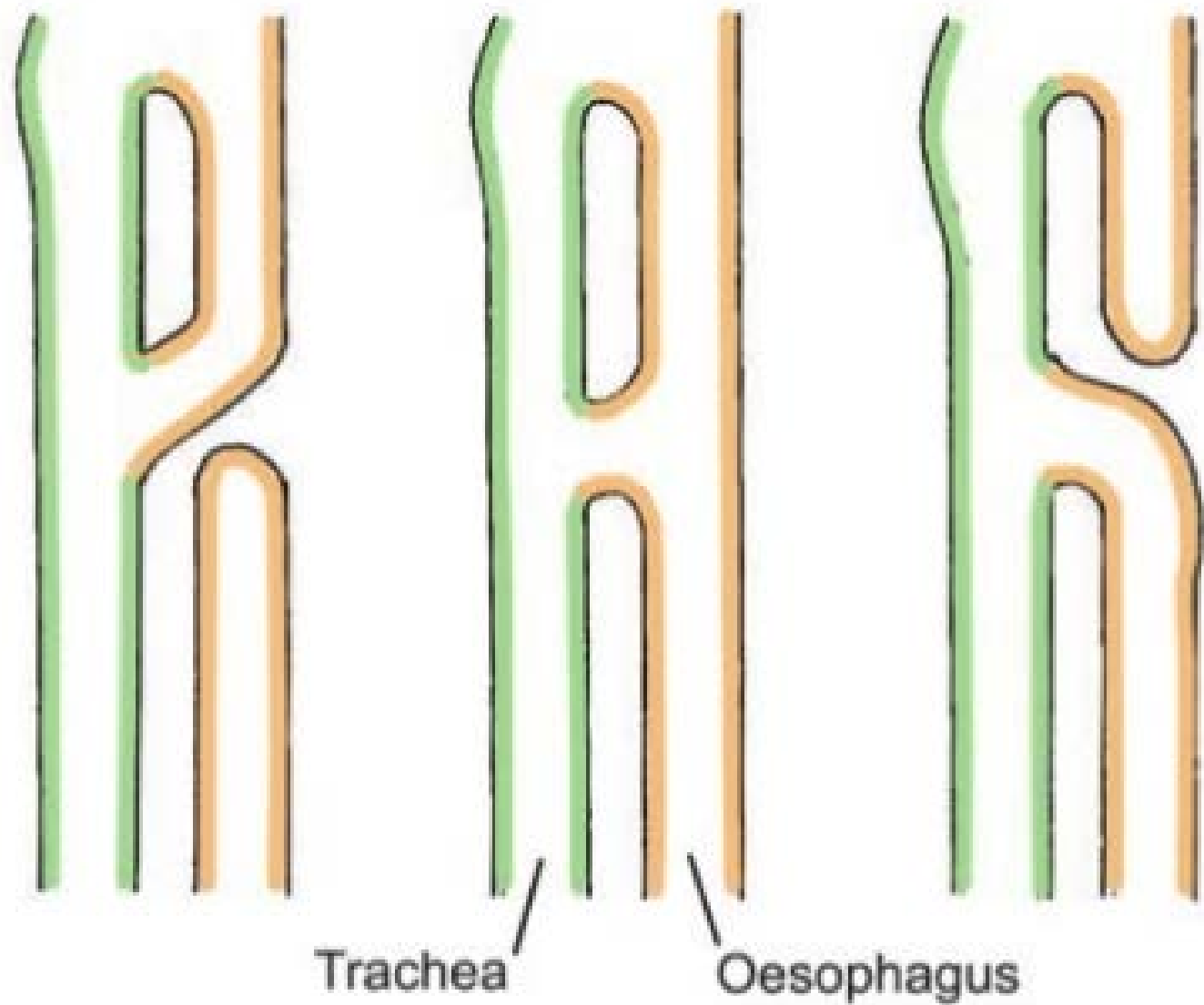
19.18: Scheme to show the bronchial tree as seen from the front



19.20: Scheme to show the terms used to describe the terminal ramifications of the bronchial tree







19.8: Three varieties of tracheo-oesophageal fistula

Lungs



Apex / Base / Surfaces (Int. / Ext.) / Borders

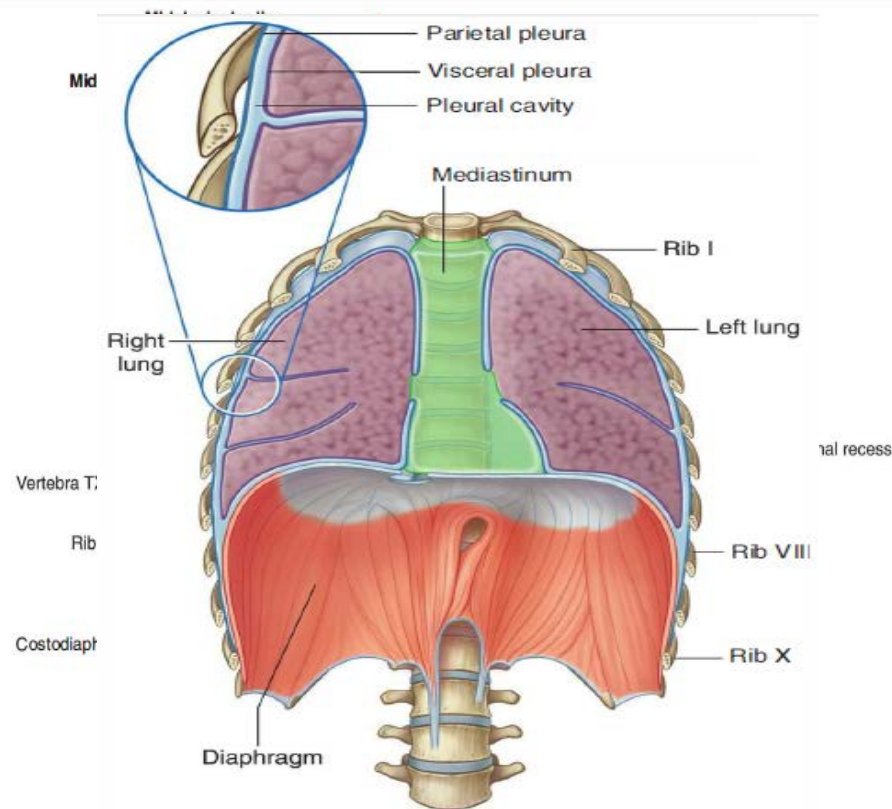
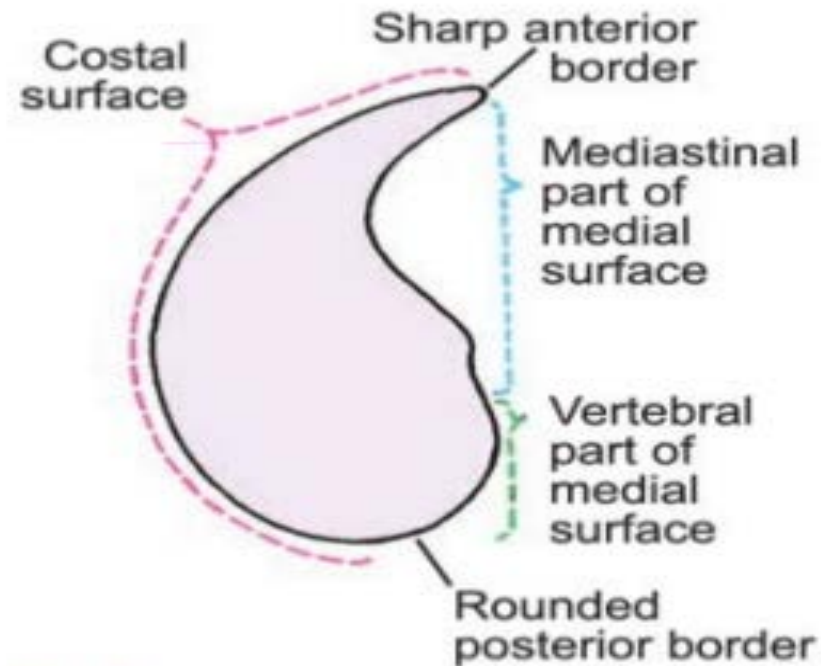


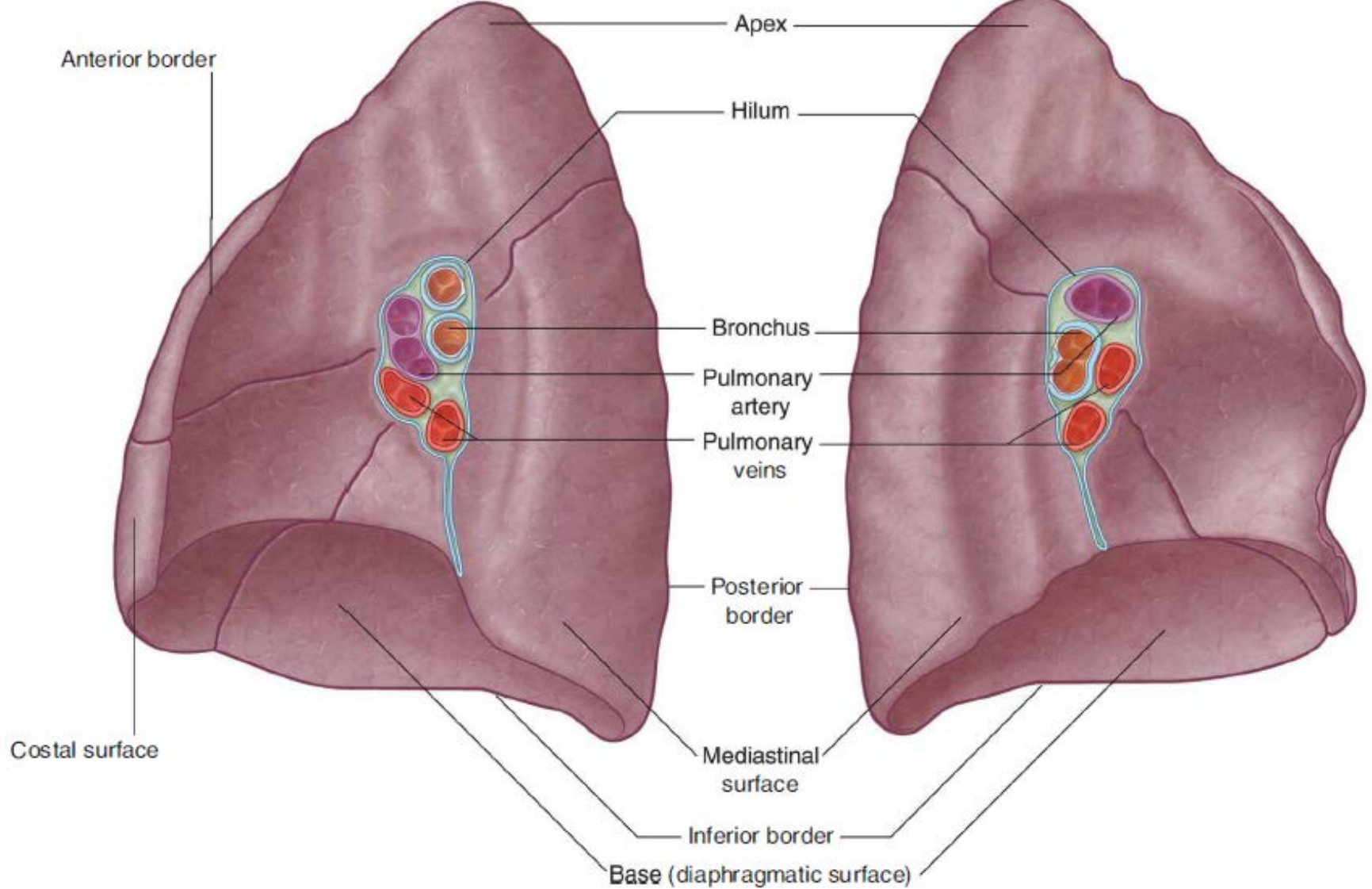
Fig. 3.35 Pleural cavities.

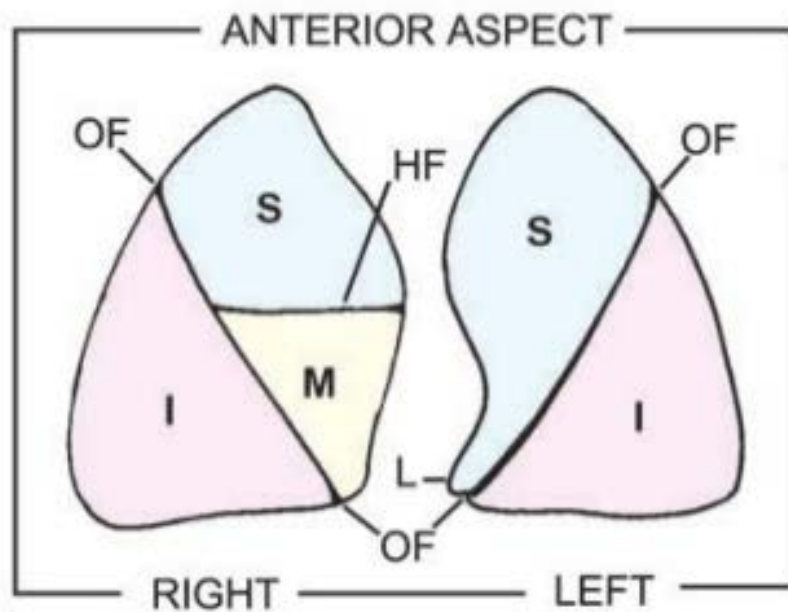


19.12: Transverse section through left lung to show its surfaces and borders

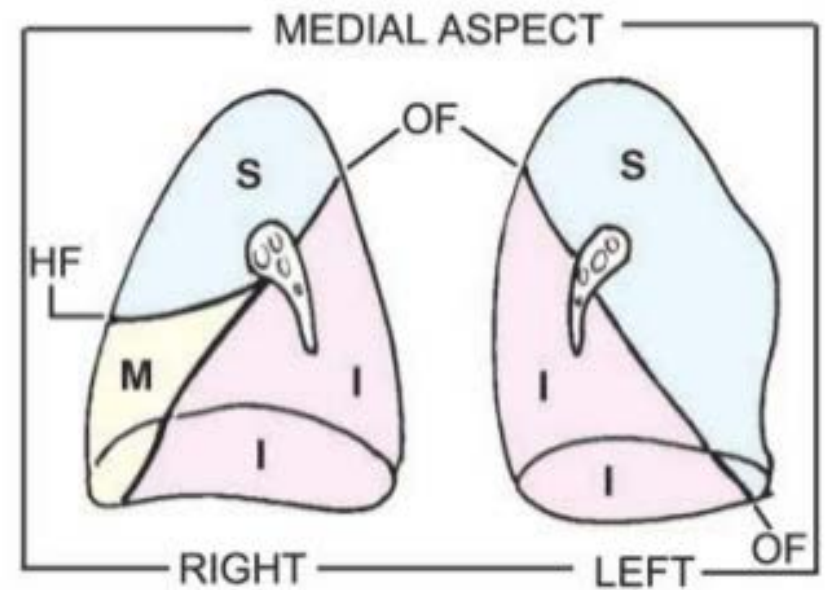
Right lung

Left lung



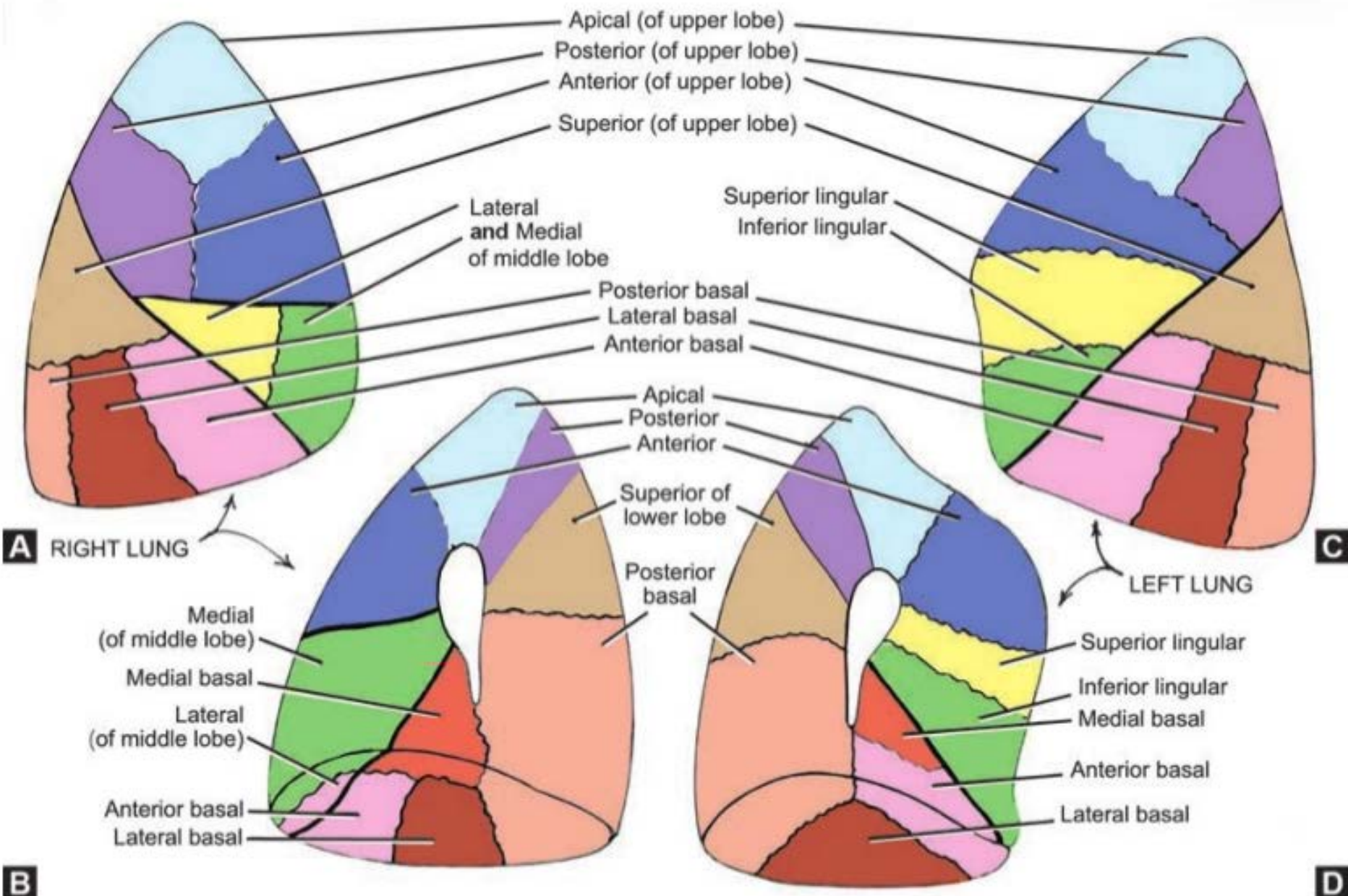


A



B

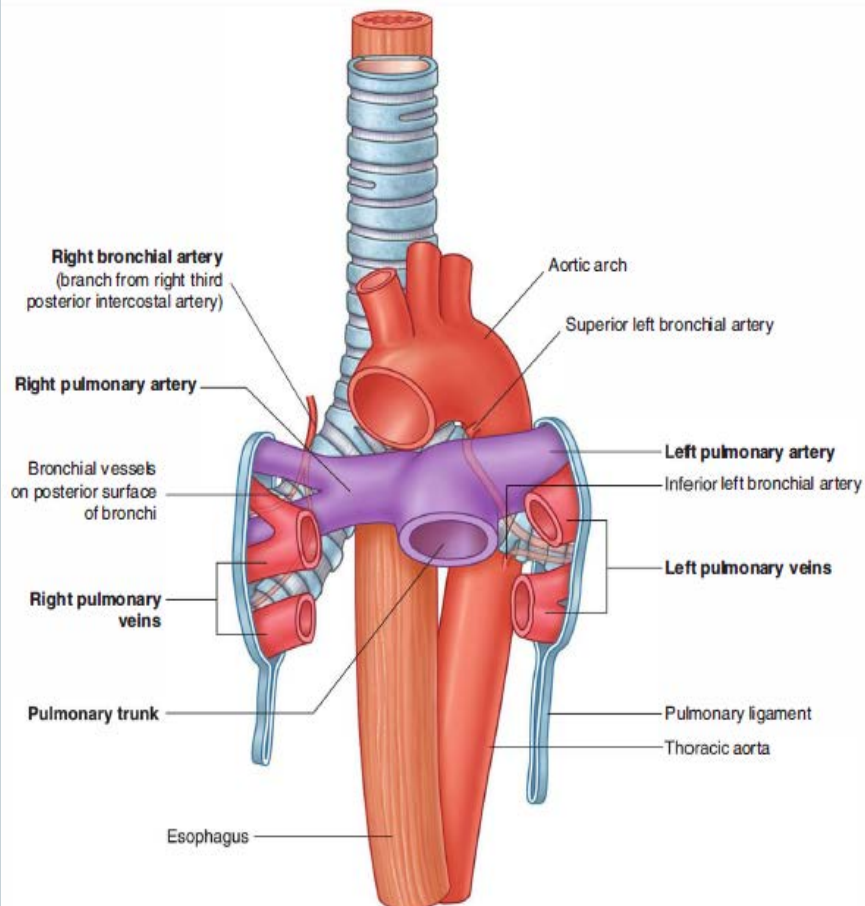
19.14A and B: Fissures and lobes of lungs. (A) Anterior aspect; (B) Medial aspect
 S:Superior lobe; M:Middle lobe; I:Inferior lobe; OF:Oblique fissure; HF:Horizontal fissure; L:Lingula



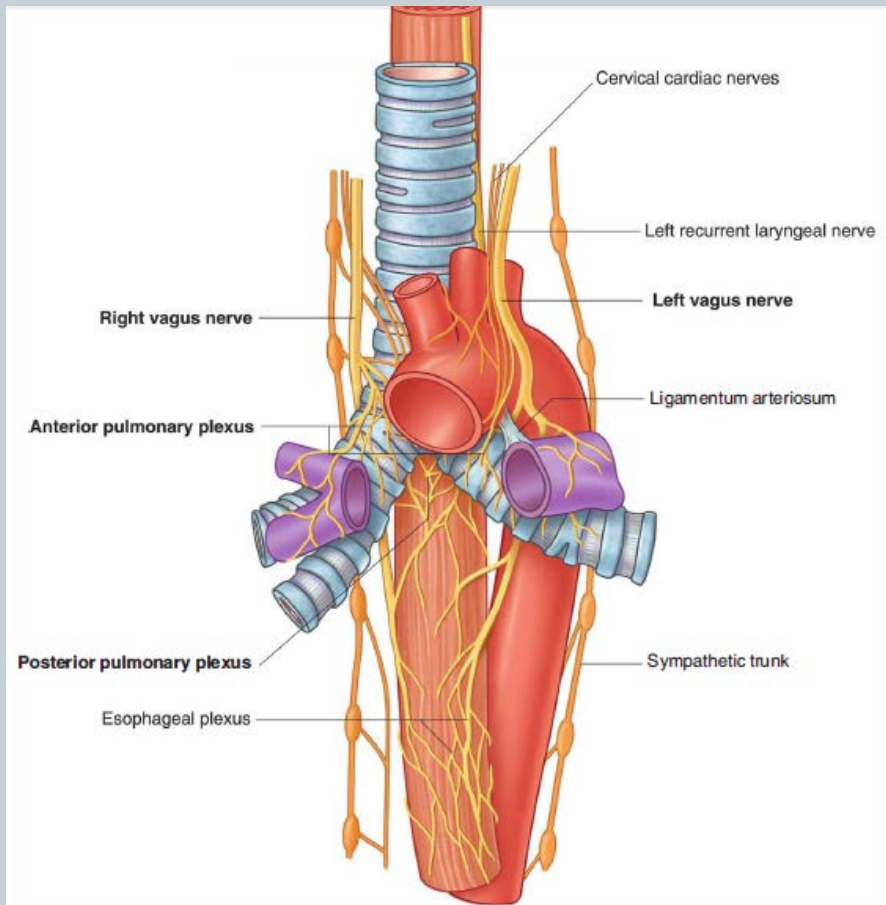
19.19A to D: Bronchopulmonary segments of the right and left lungs

Pulmones

- Pulmonary vessel



- Pulmonary nerve



Pleura

Parietal layer :

Costal

Mediastinal

Cervical

Diaphragmatic

Visceral layer

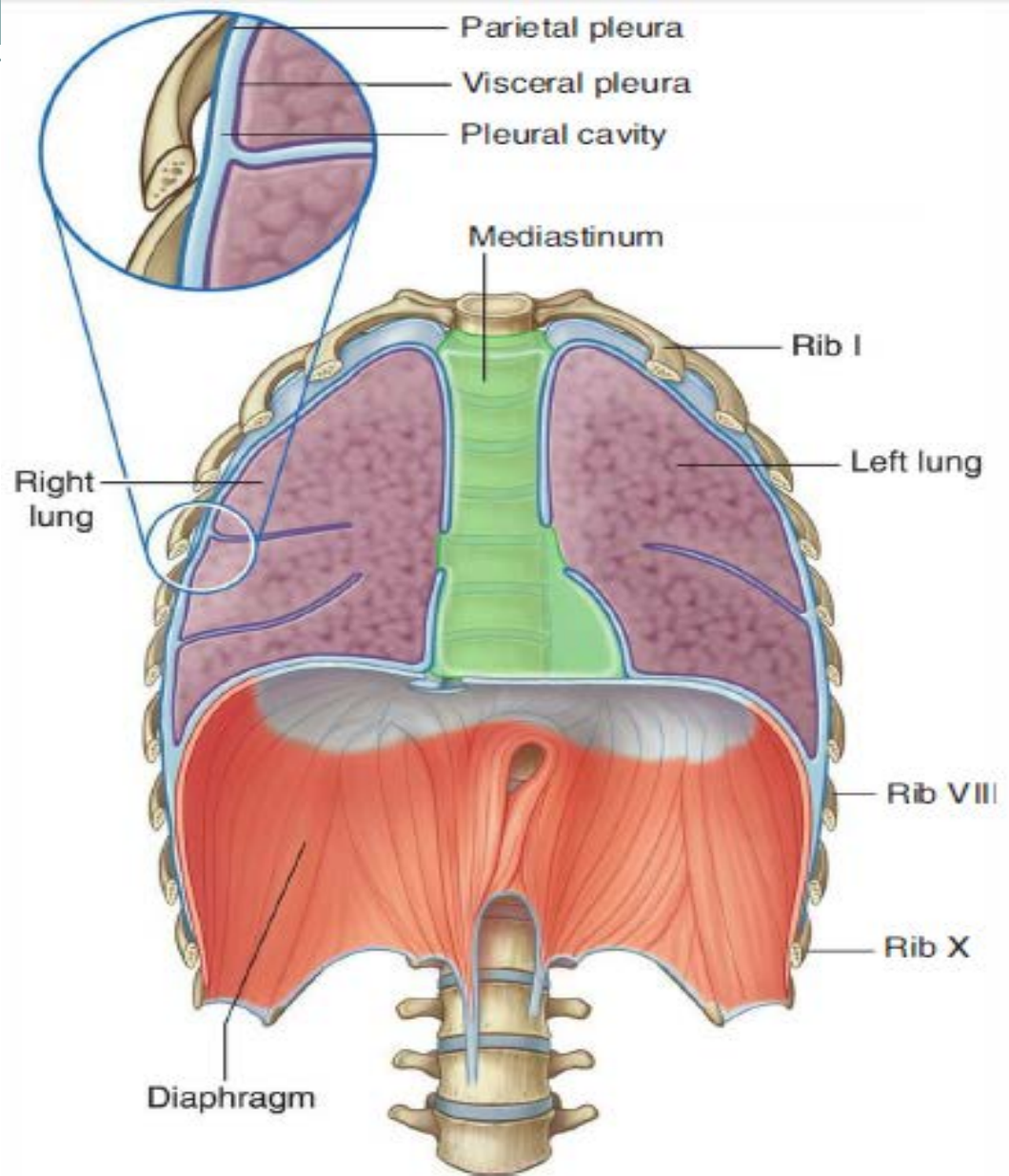
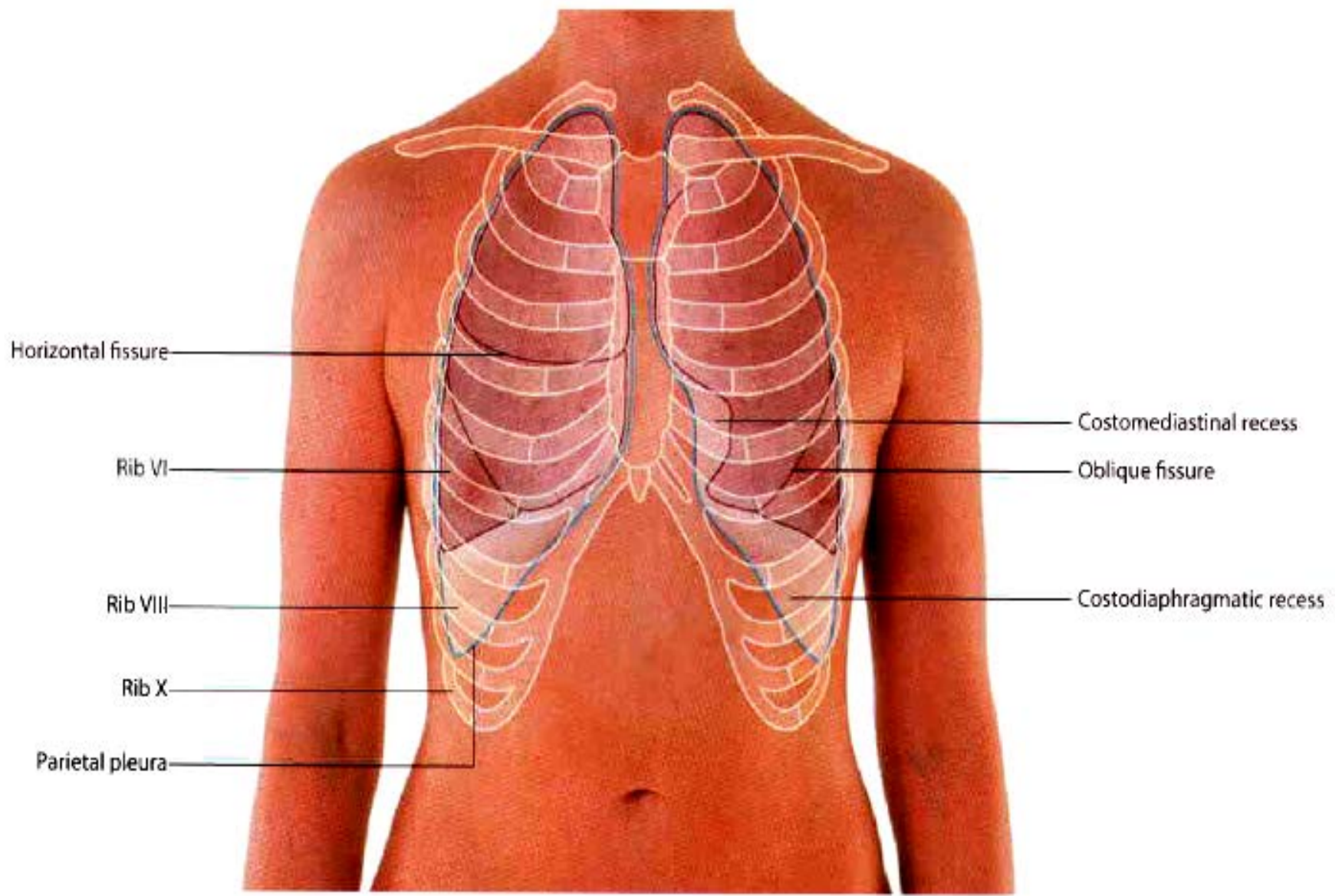
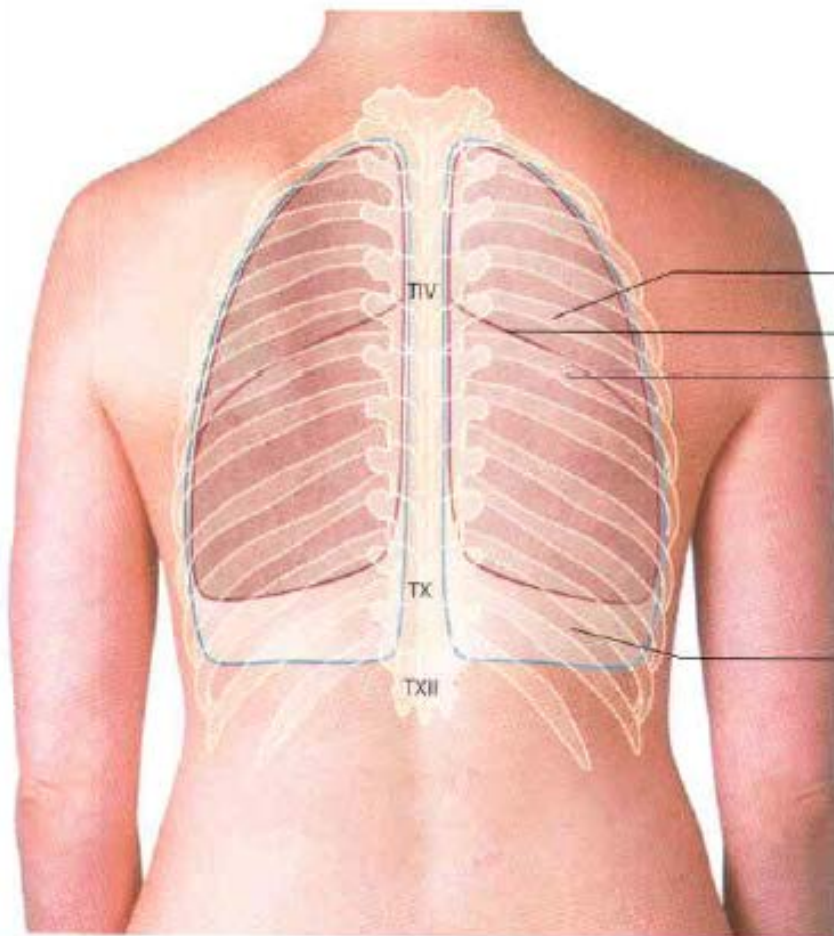


Fig. 3.35 Pleural cavities.



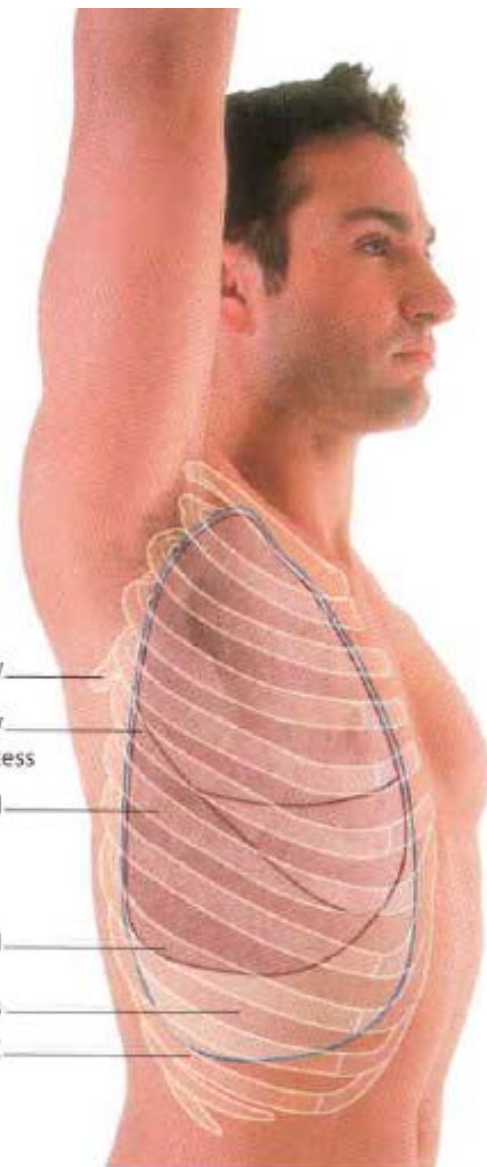
Surface projections of the pleura and lungs (anterior view)



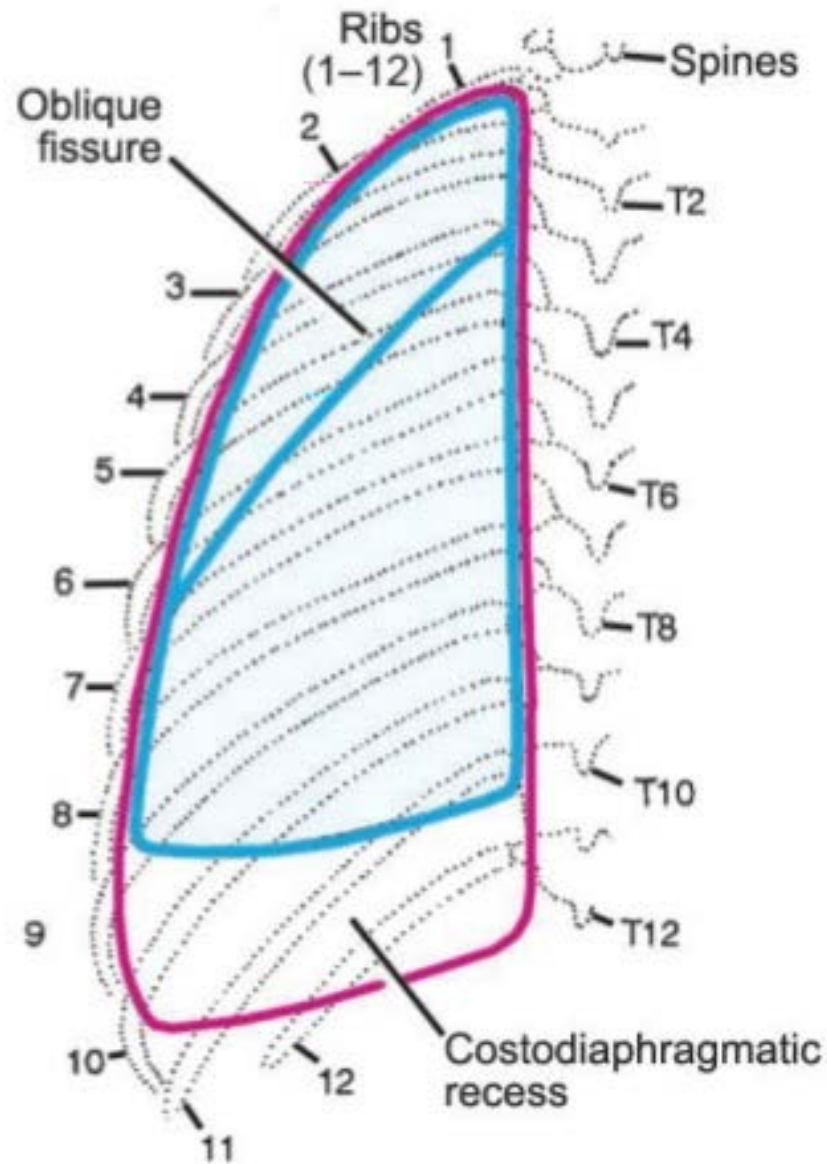
Surface projections of the pleura and lungs (posterior view)

Rib V
Oblique fissure
Rib VI

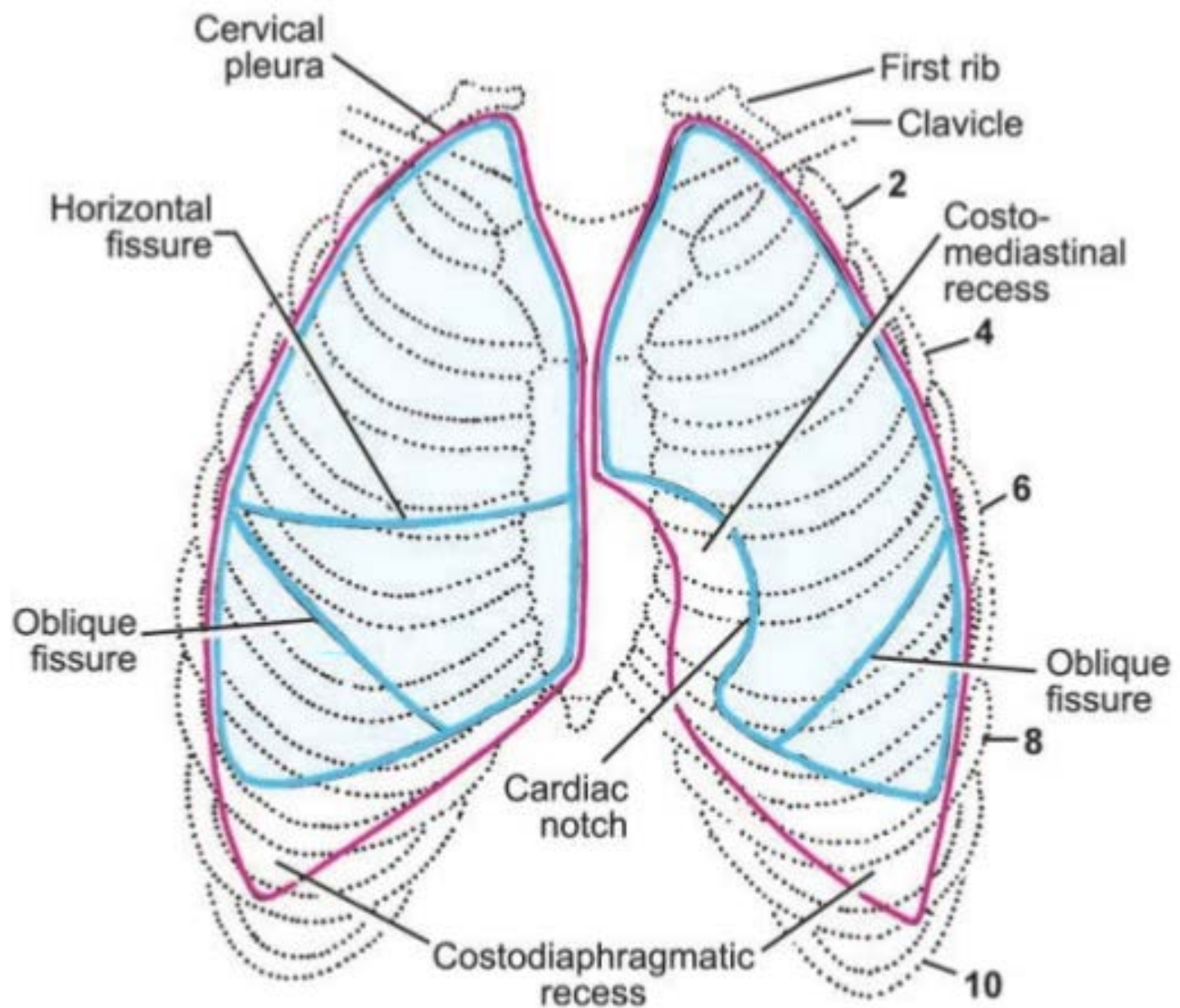
Spinous process of TIV
Rib V
Costodiaphragmatic recess
Rib VI
Rib VIII
Costodiaphragmatic recess
Rib X



Surface projections of the pleura and right lung (lateral view)



19.25: Projection of the pleura (red line) and lung (blue line) on the back of the thorax. The projection is similar on the right and left sides



19.24: Scheme to show the relationship of lines of pleural reflection (red line) and of the lungs (blue line), to the skeleton of the thorax

Pleural Recess



Costodiaphragmatic
Costomediastinal

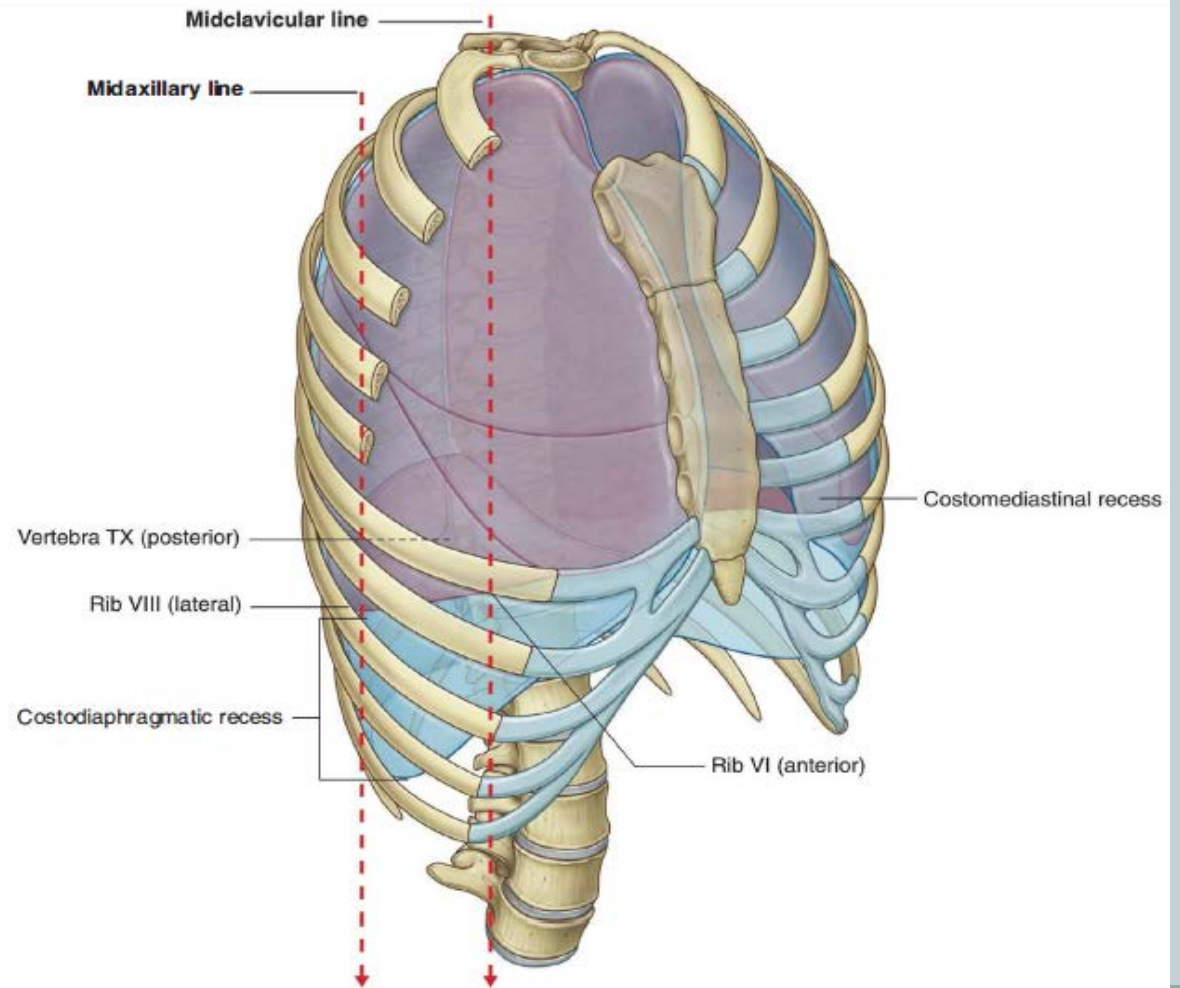
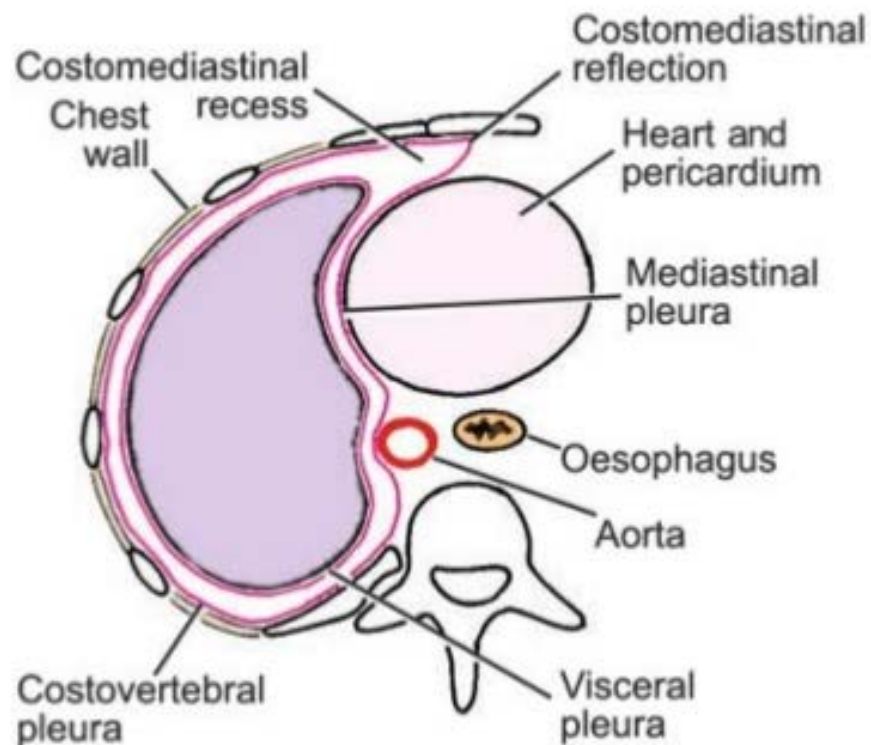
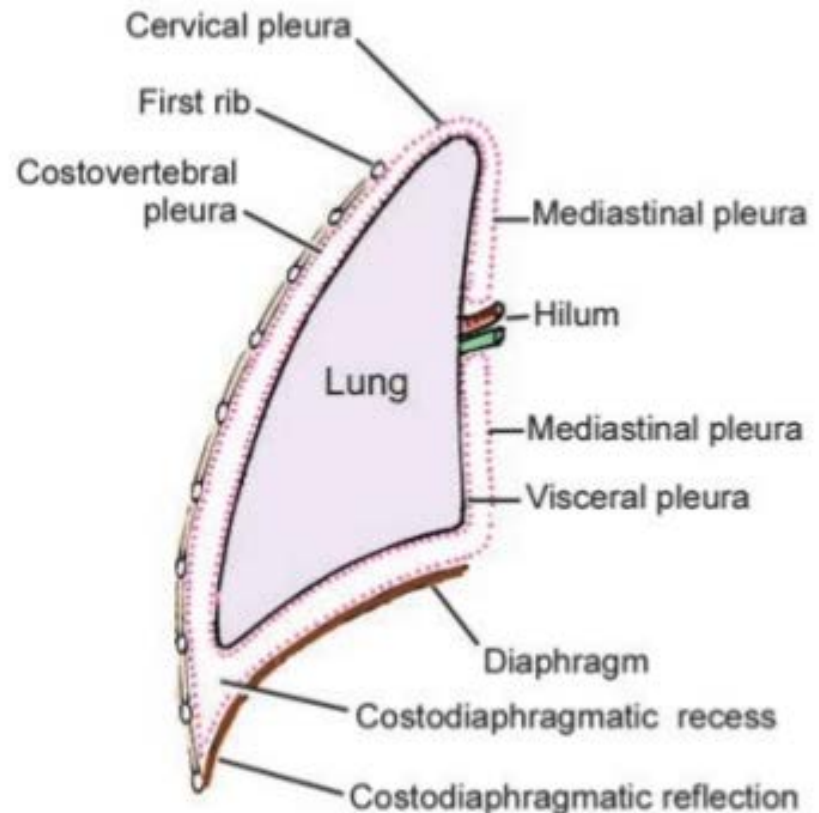


Fig. 338 Parietal pleural reflections and recesses.



19.21: Schematic transverse section through the left half of the thorax to show some features of the pleura



19.22: Schematic coronal section through one half of the thorax to show some features of the pleura

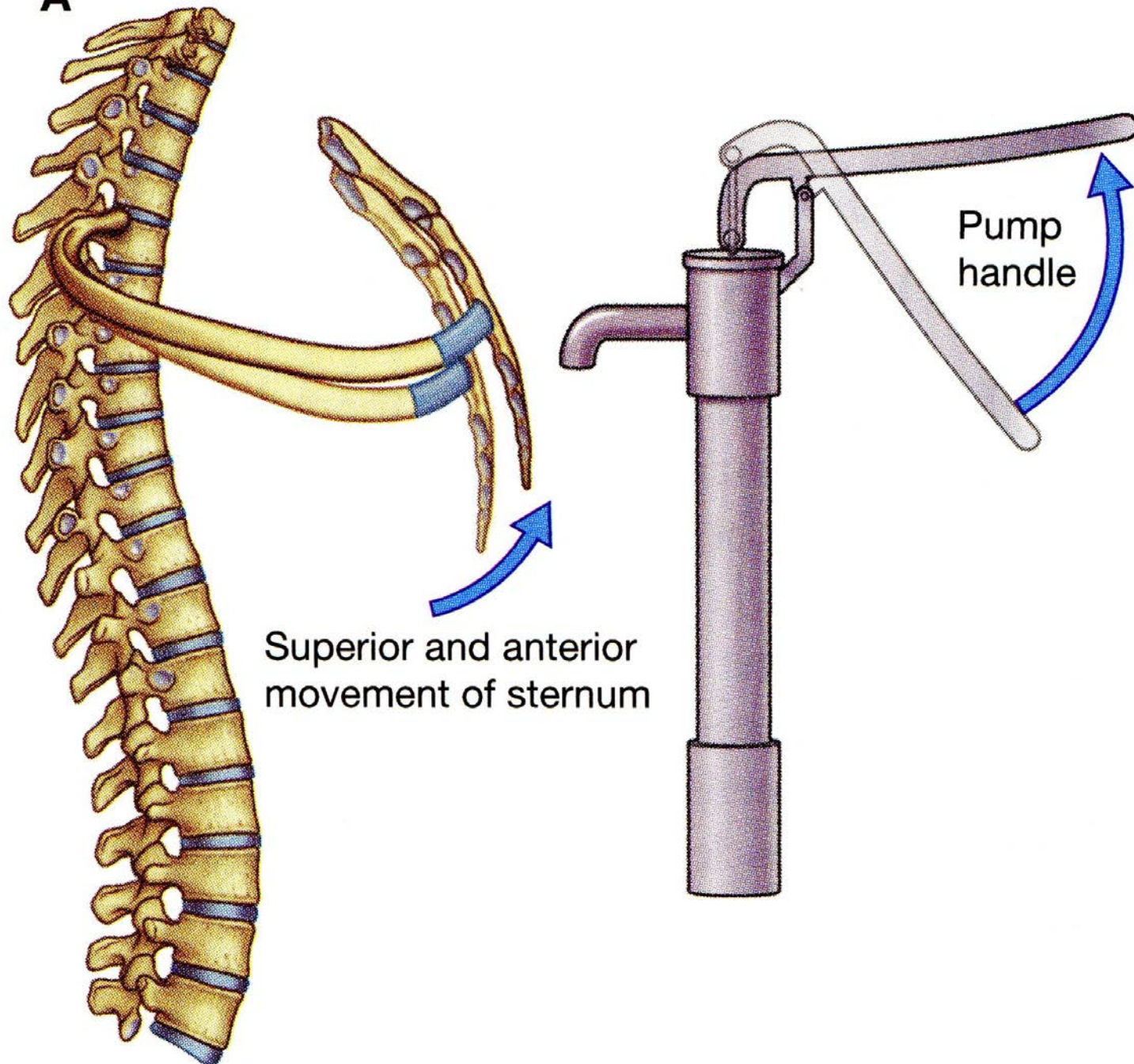
Pleural Innervation

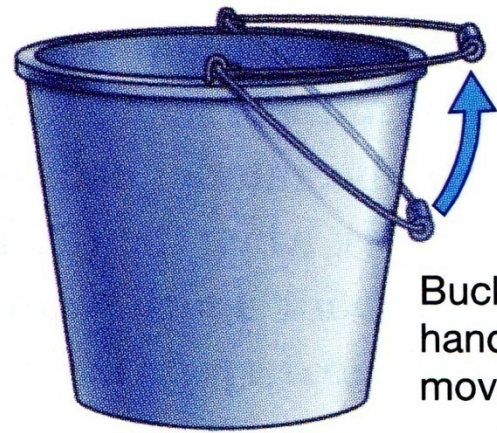


Costal And peripheral Part Of Diaphragmatic
Pleura : Intercostal Nerve

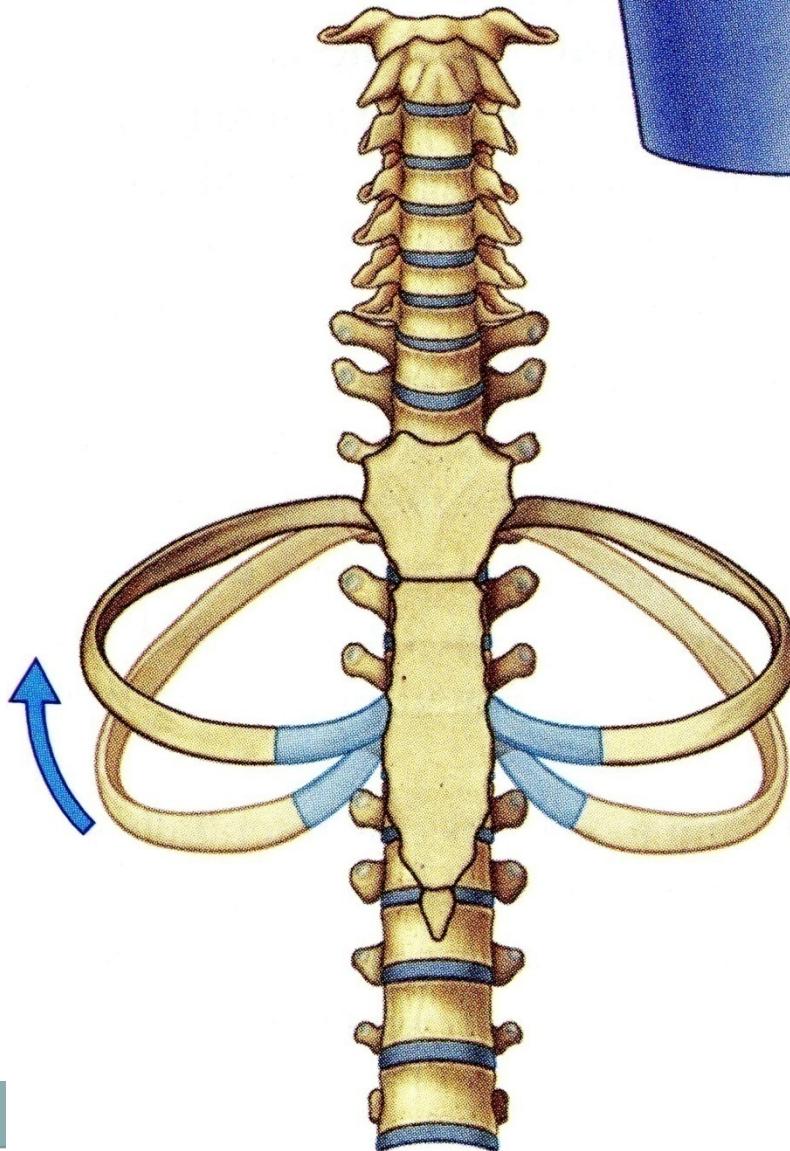
Mediastinal And Central Part Of
Diaphragmatic Pleura : Phrenic Nerve

A





Bucket
handle
movement



Elevation of lateral
shaft of rib

Bullet punctures thoracic wall and parietal pleura, admitting air and causing lung to collapse.

Lung and visceral pleura may also be penetrated to admit air.

