

# Lab / First Week

V2

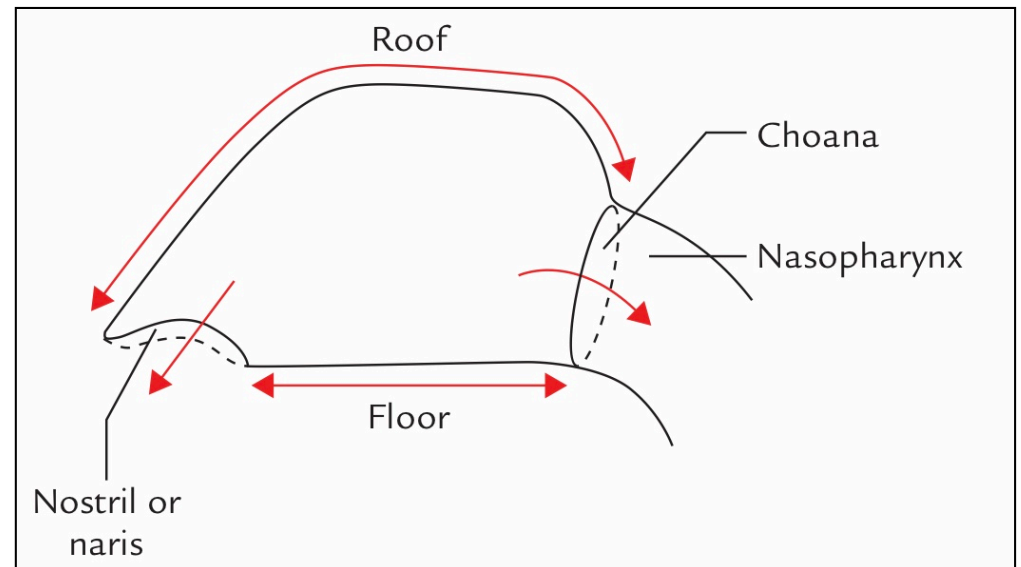
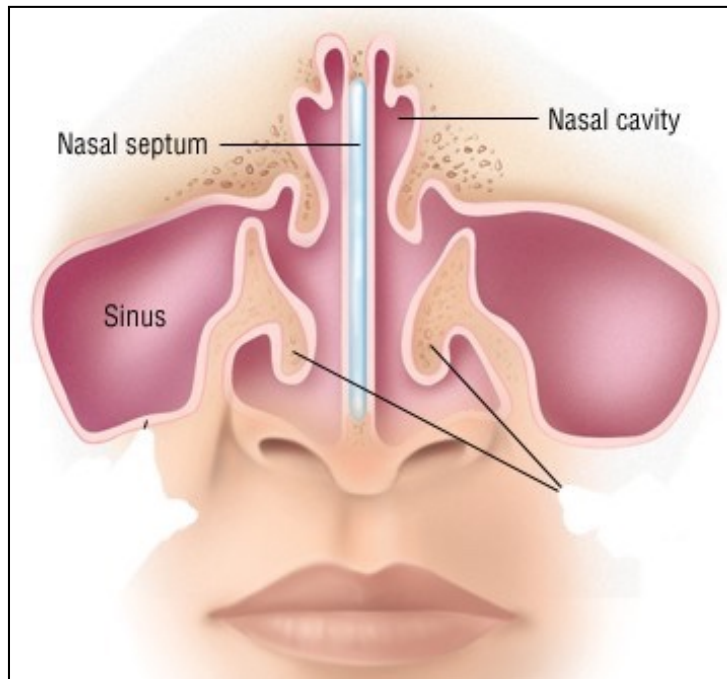
Slide 4

Floor **X** >>> Roof

- 1. Nasal Cavity**
- 2. Paranasal Sinuses**
- 3. Pterygopalatine Fossa**

# ✦ Nasal Cavity.

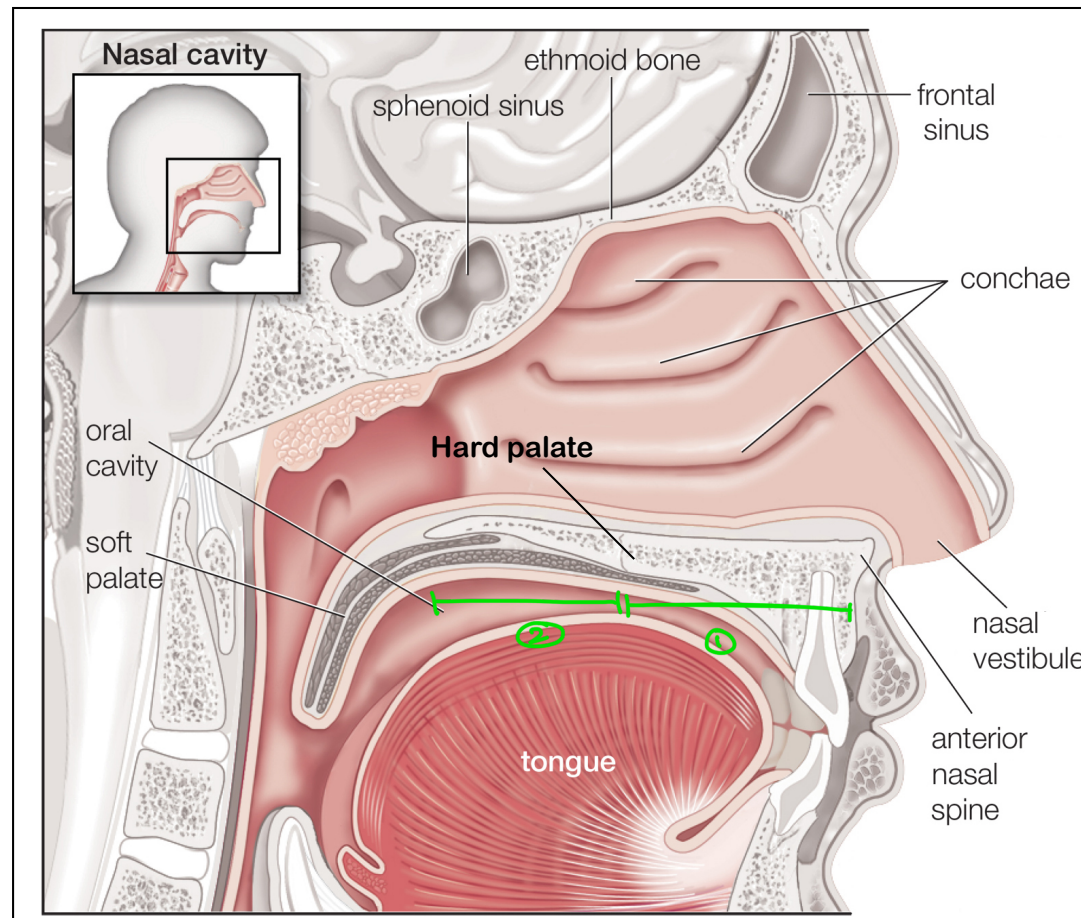
- The students should know the boundaries of the cavity :
  1. Floor.
  2. Roof
  3. Lateral wall
  4. Medial or septal wall.



# • Floor

*floor* ↴

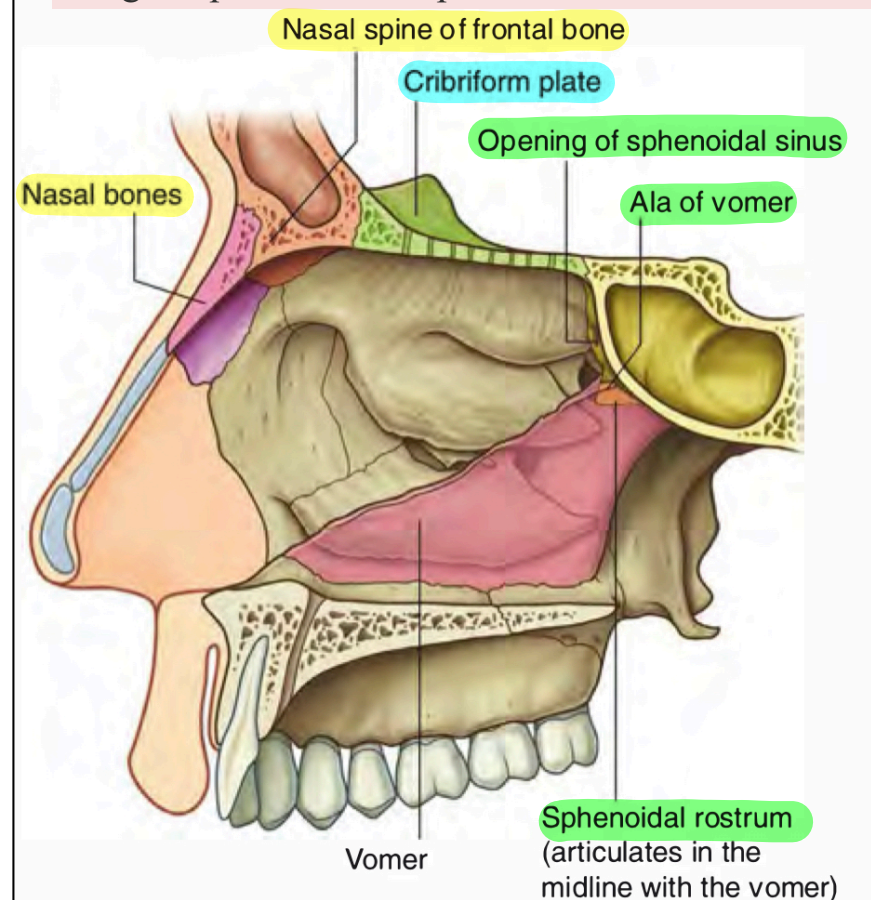
- The students should observe the upper surface of the hard palate which consist of :
  1. Palatine process of the maxilla
  2. Horizontal plate of the palatine bone



# • Roof

- The students should know the consistent of each part of the roof:

1. **Sloping anterior part.** → Made of Nasal spine of the frontal bone and the nasal bones.
2. **Horizontal middle part.** → Contains the horizontal cribriform plate of ethmoid
3. **Sloping posterior part.**
  - Anterior surface of the sphenoid bone (body) and sphenoidal sinus.
  - Ala of the vomer.
  - Vaginal process of the palatine bone



The roof of nasal cavity contains bipolar cells

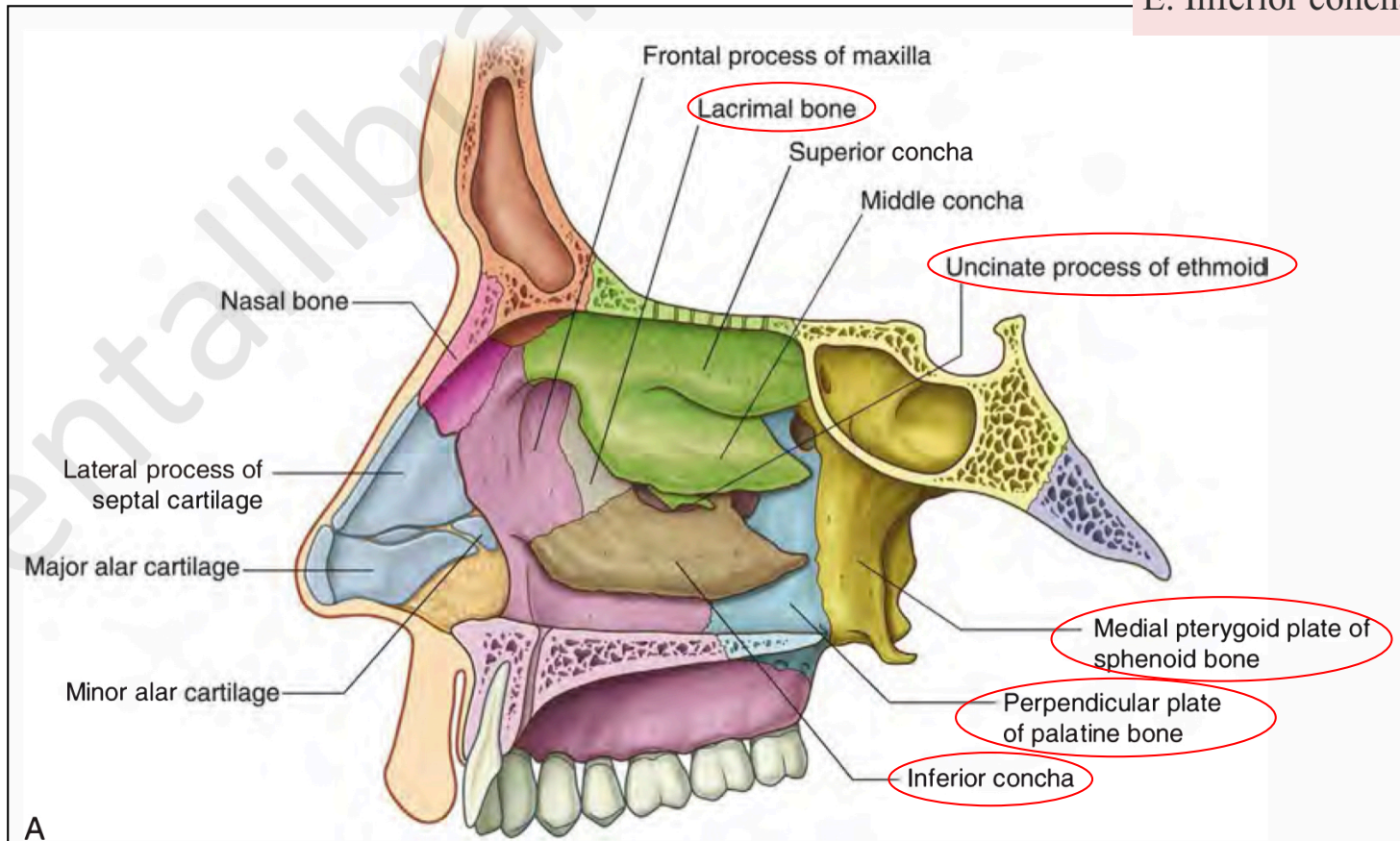
# • Lateral Wall

Formed by bone, cartilage, and soft tissues for warming and moisturizing since it contains large number venous plexus.

- The students should observe the supporting bone of the lateral wall:

## Bony support of the lateral wall:

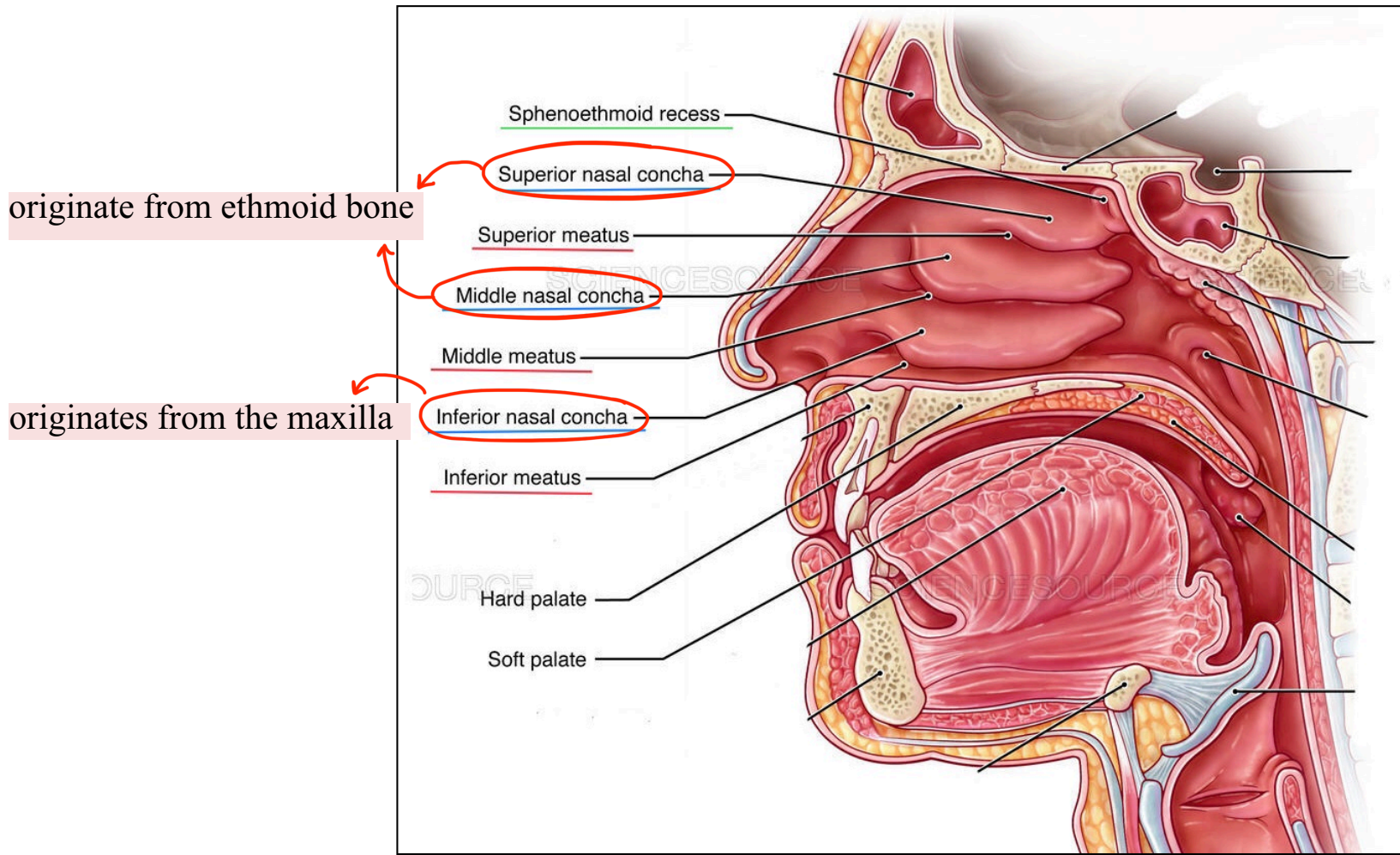
- A. Ethmoidal labyrinth and its uncinated process.
- B. Perpendicular plate of the palatine bone.
- C. Medial pterygoid plate of sphenoid.
- D. Medial surfaces of the lacrimal bones and maxillae.
- E. Inferior concha of maxilla



# • Lateral Wall

- The students should observe the three concha, three meatuses and one recess in the lateral wall:

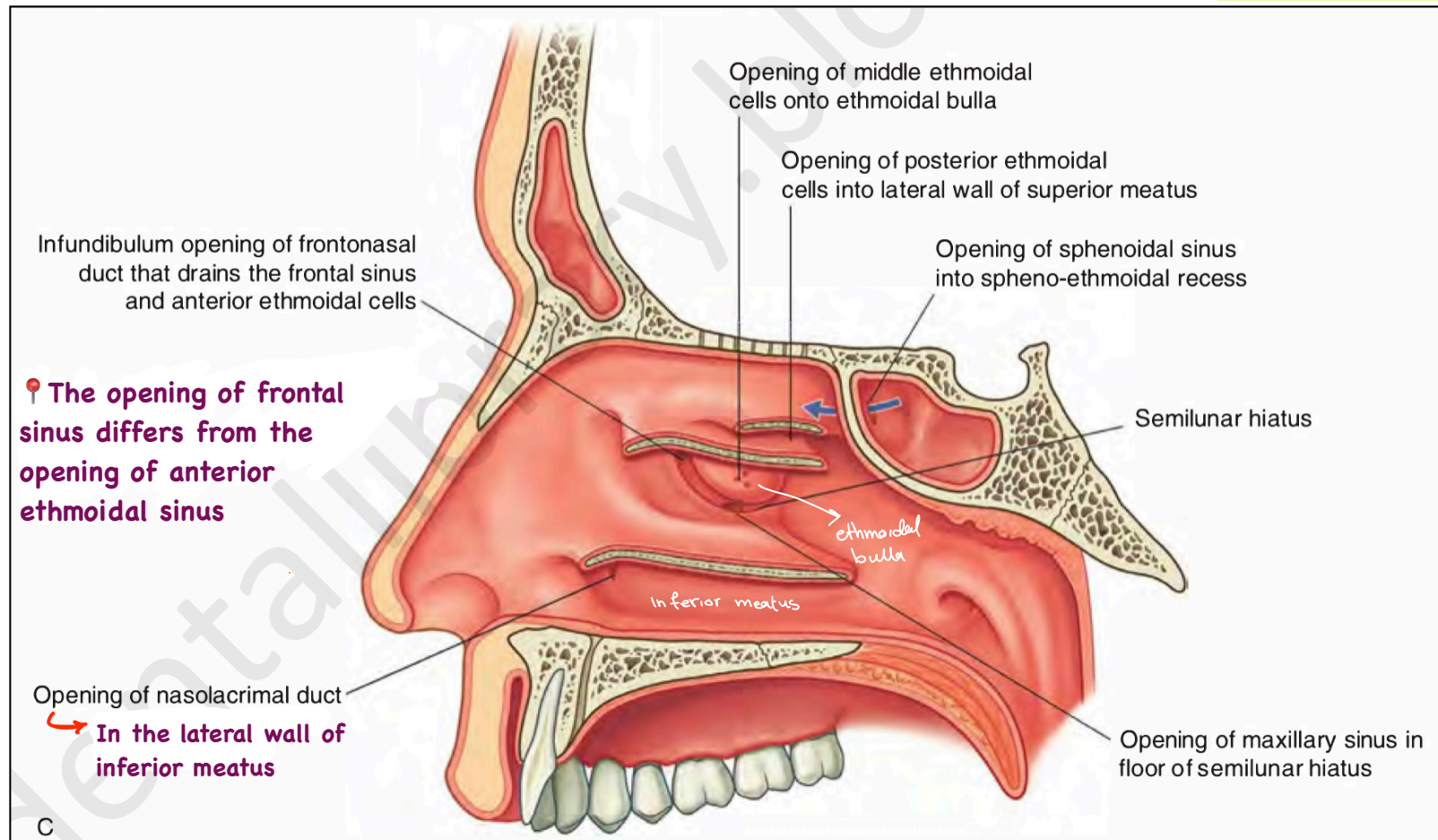
Parts of the lateral wall



# • Lateral Wall

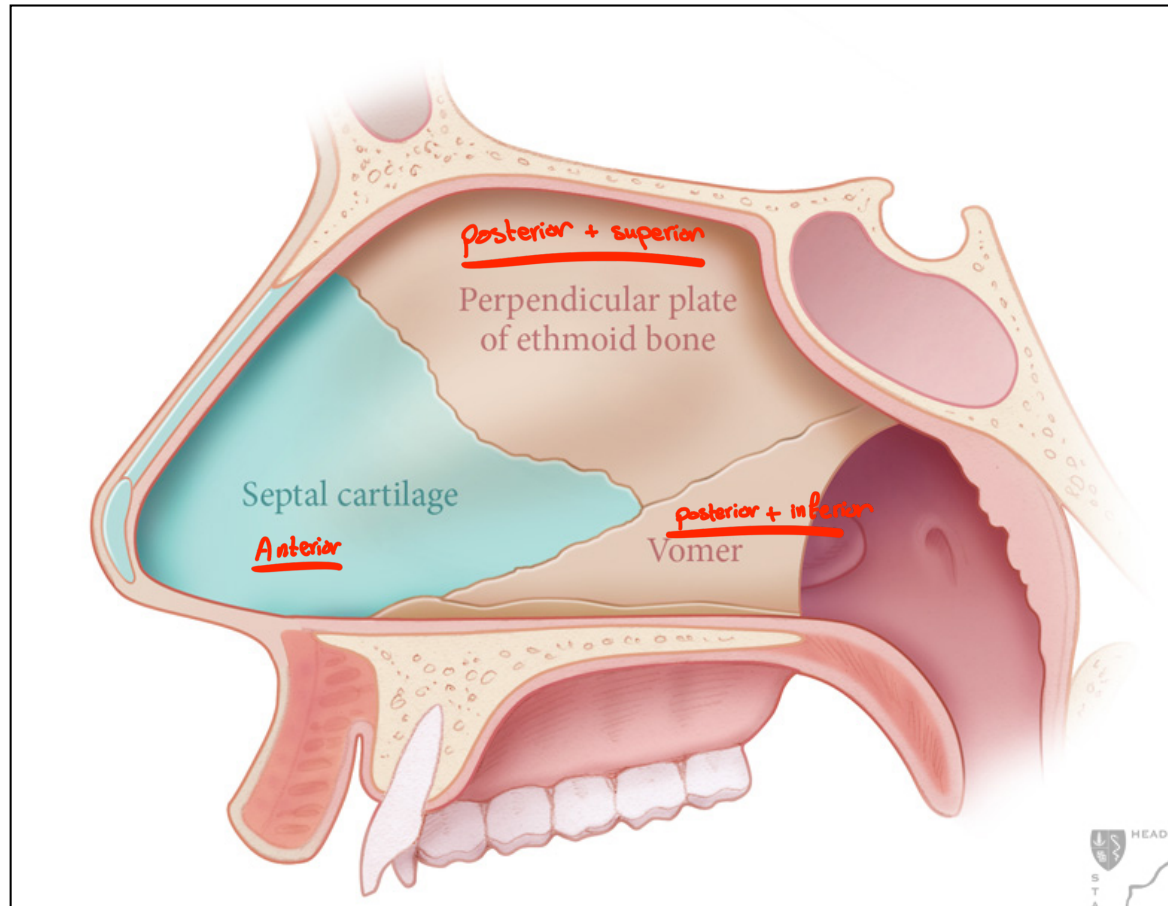
- The students should know the openings into the lateral wall:

**IMPORTANT**



# • Medial Wall

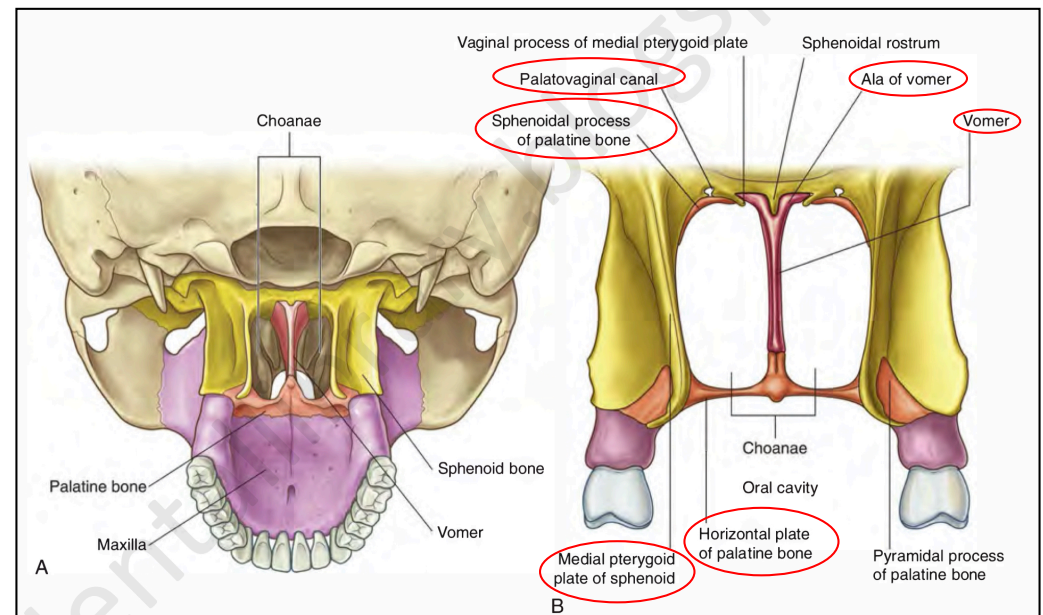
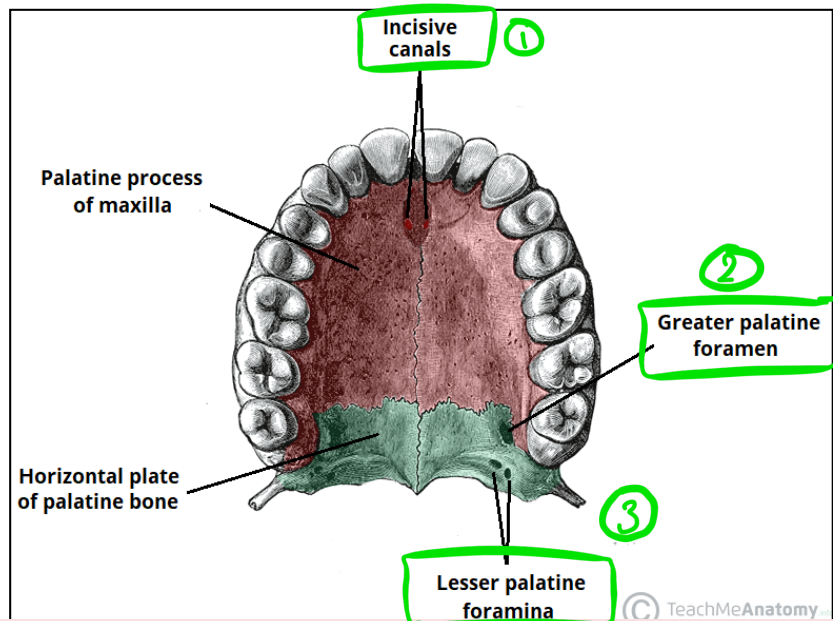
- The students should know the consistent of the medial wall (the septum):
  1. Anterior part. cartilage (anteriorly) & vertical plate of ethmoid bone (Posterior & above) , the vomer
  2. Posterior part. (posteriorly & downward)





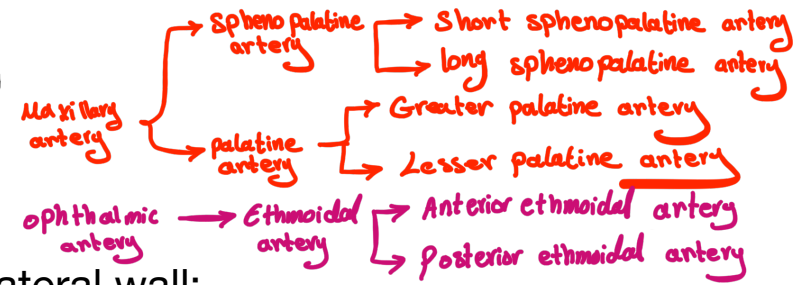
# • Choana

- The students should know the **foramina of the hard palate**:
- The students should observe the boundaries of the choana:



- A. Medially: the vomer (nasal septum) and it has a superior process called ala of vomer.
- B. Laterally: Medial pterygoid plate.
- C. Anteriorly and inferiorly: horizontal plate of palatine bone.
- D. At the roof, there is:
- A foramen called palatovaginal canal which leads to the nasopharynx.
  - Sphenoidal process of palatine bone

# Blood and nerve supply



- The students should know the arterial supply of septum and lateral wall:

1. = Posterior lateral nasal branch. Supply the posterior superior quadrant of lateral wall...branch of sphenopalatine A. *Short sphenopalatine*
2. = Posterior septal branches. Supply the septum (medial wall of nasal cavity), branch of sphenopalatine A. *long sphenopalatine*
3. Greater palatine artery. Supply anterior quadrant and posterior quadrant of lateral wall...branch of palatine A.
4. Anterior and posterior ethmoidal arteries. Both supply medial and lateral walls (anterior branch supply anterior superior quadrant)
5. Superior labial artery.
6. Lateral nasal artery. Supply external nose/ vestibule by alar branch

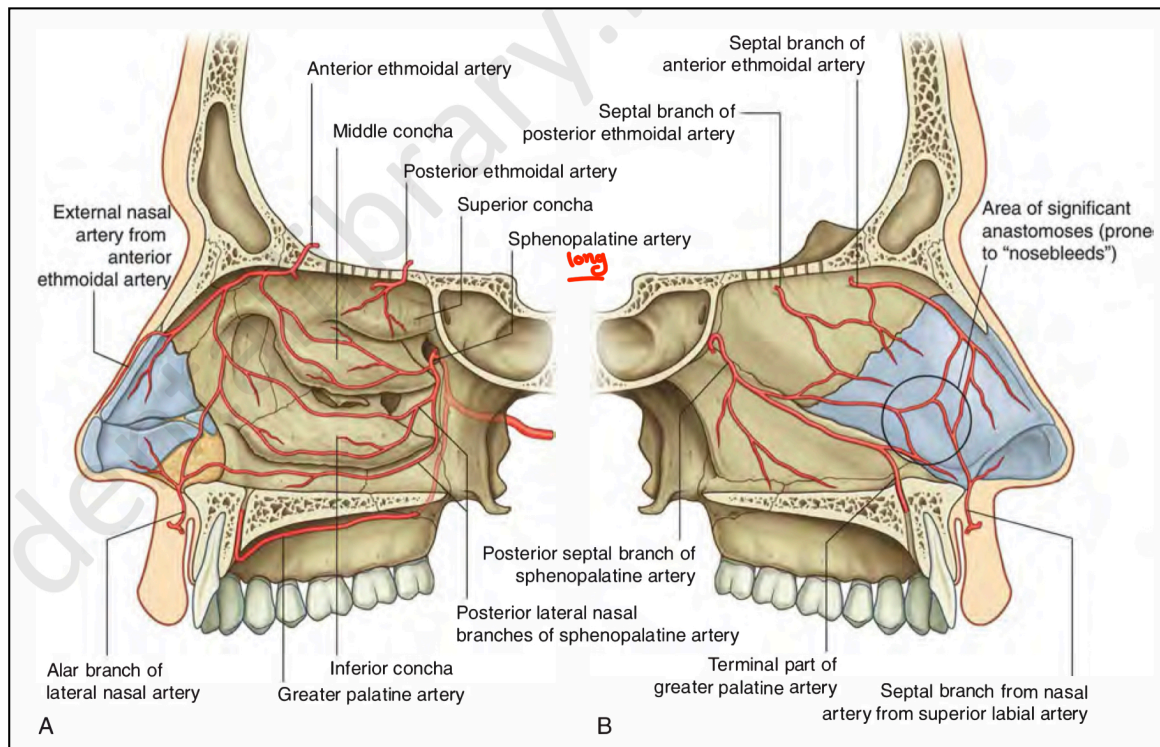
- What is the main artery which causes epistaxis : long sphenopalatine artery and Superior labial artery

in Kiesselbach's area

Septal branch supply the septum.

Supply the lateral wall.

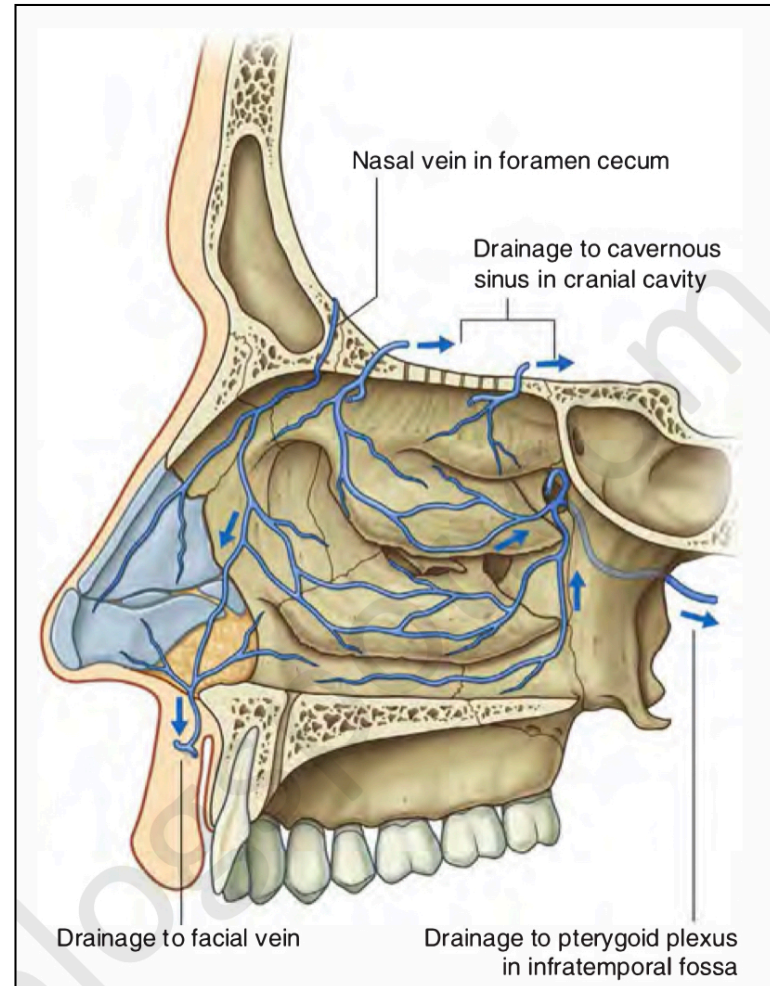
Alar branch supply the region around the naris.



# • Blood and nerve supply

- The students should know the venous drainage:

- The anterior 1/3 drain into the facial vein.  
-The posterior 2/3 drain into lateral pterygoid plexus > drains into the maxillary vein > the maxillary joins the superficial temporal in the parotid gland to form the retromandibular vein

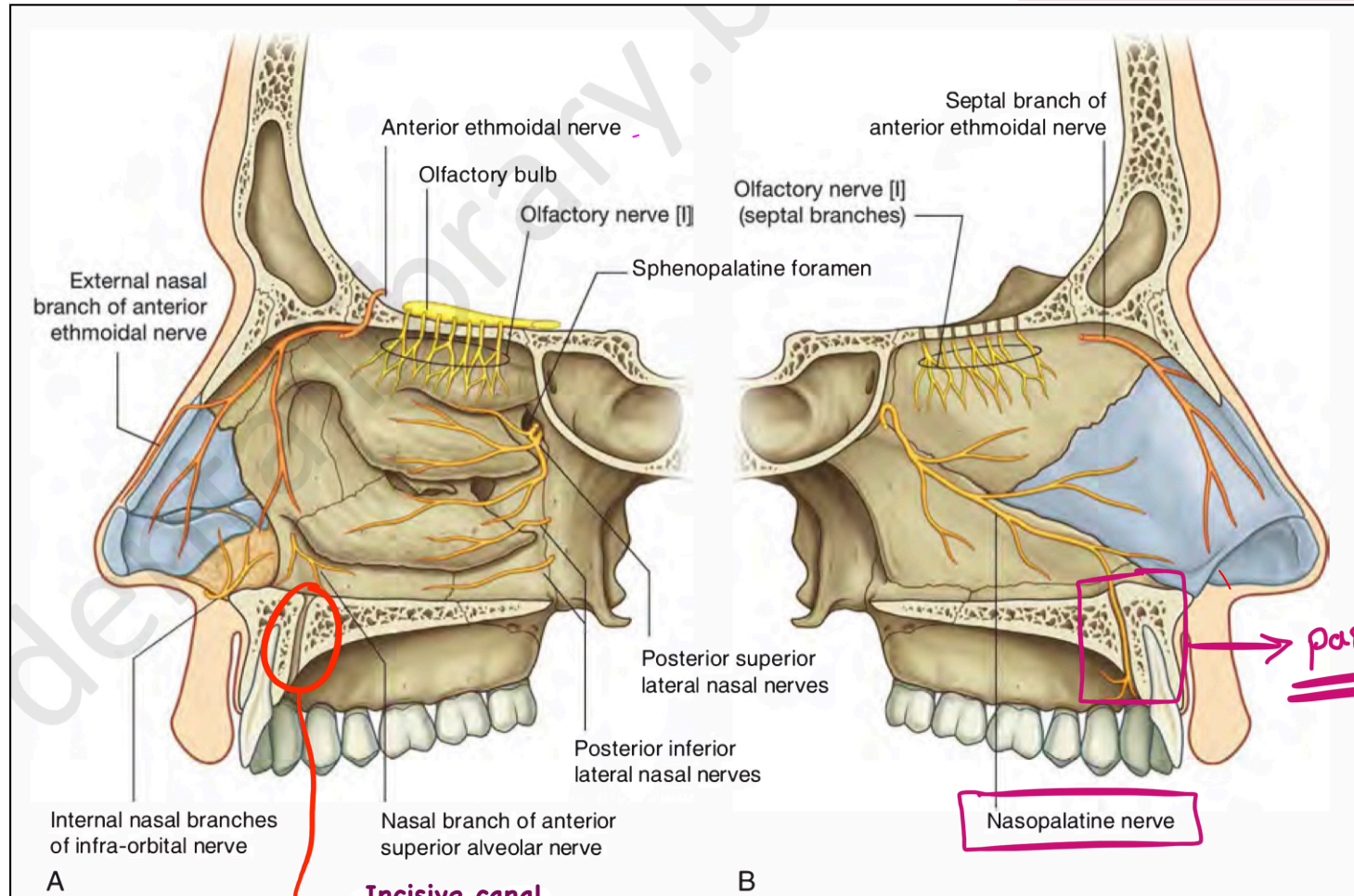


# Blood and nerve supply

- The students should know the nerve supply of septum and lateral wall:

Branches of ophthalmic nerve through nasociliary nerve in the orbit:

- **Anterior ethmoidal N** → sensory to lateral & medial walls .. ends as external nasal
- Posterior ethmoidal N: supply the submucosa of ethmoidal and sphenoidal sinuses



## Incisive canal

Structures pass through it:

- Sphenopalatine nerve (nasopalatine nerve)
- Sphenopalatine artery
- Greater palatine artery and vein

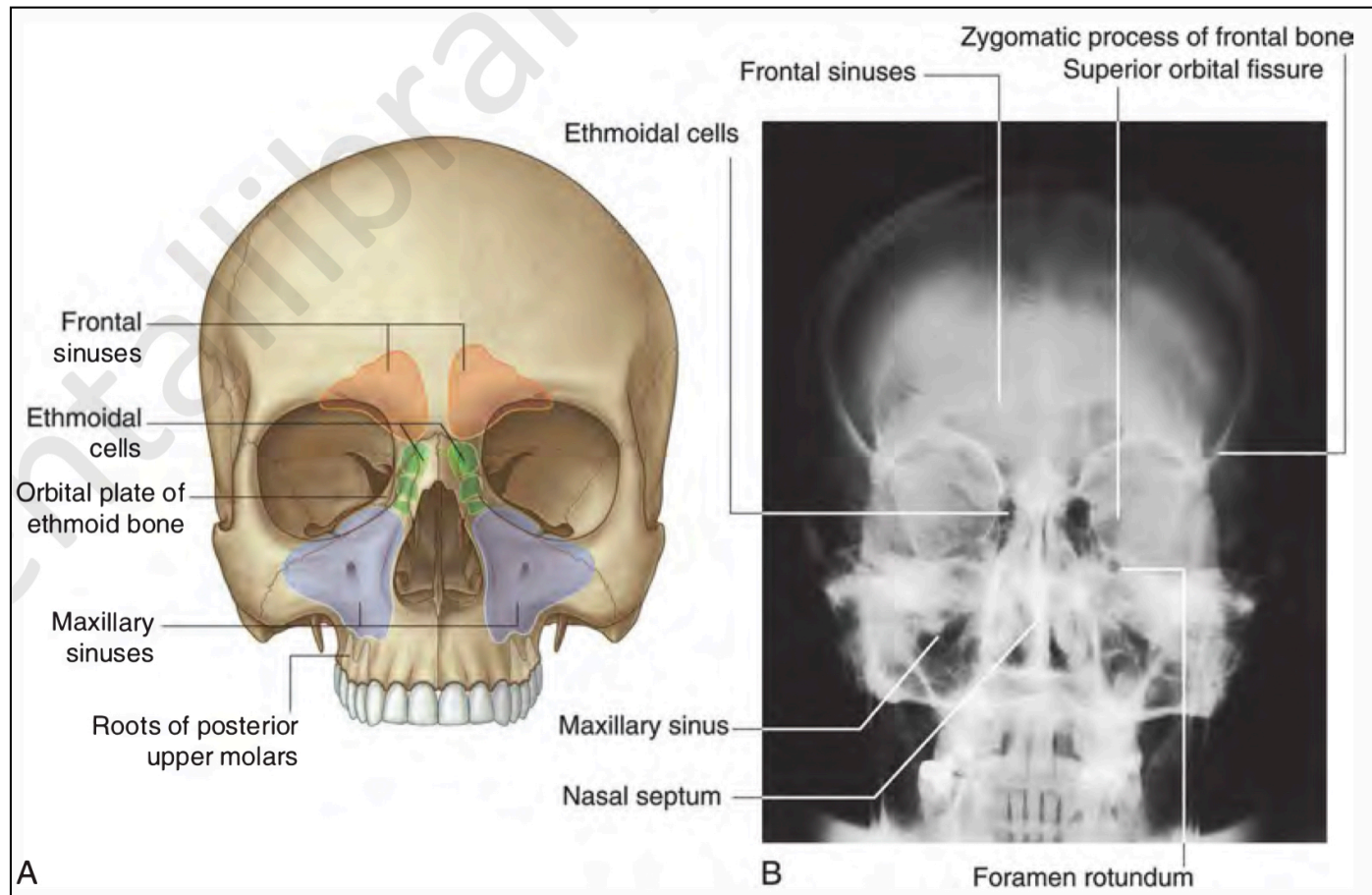
\* Olfactory nerve  
↳ for smell

post paper

which nerve pass through this canal?

# ❖ Paranasal Sinuses.

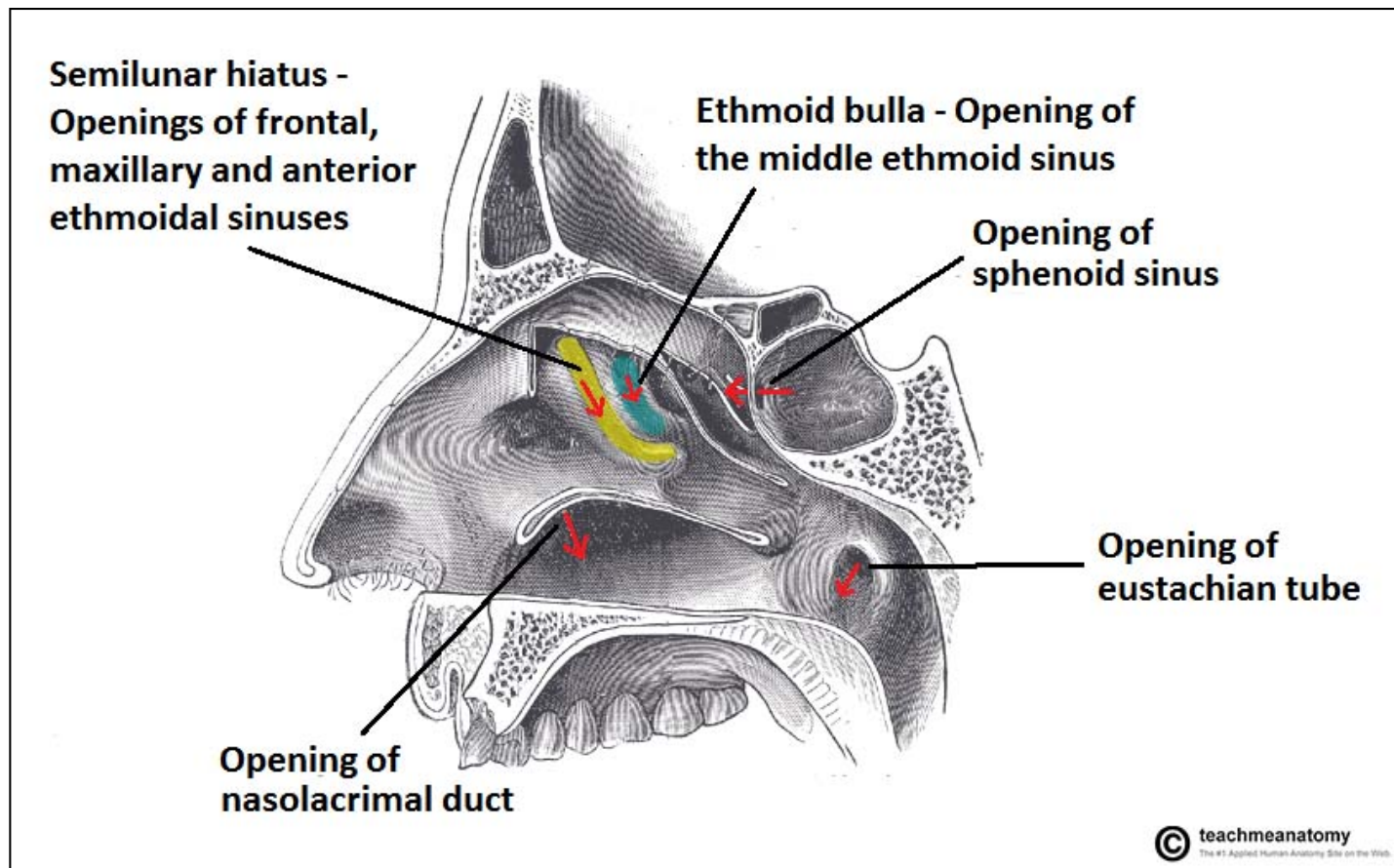
- The students should know the sites of the each sinus :
  1. Ethmoidal cells.
  2. Sphenoidal.
  3. Maxillary. **The largest,, has a bad drainage**
  4. Frontal sinuses.



# Paranasal Sinuses.

- \* Frontal sinus >> Infundibulum
- \* The anterior ethmoidal sinus >> anterior part of hiatus semilunaris
- \* The middle ethmoidal sinus >> bulla ethmoidal
- \* The posterior ethmoidal sinus >> superior meatus
- \* Maxillary sinus >> Hiatus semilunaris (posteriorly)
- \* sphenoidal sinuses >> sphenethmoidal recess

- The students should know the site of drainage for each sinus: ↗

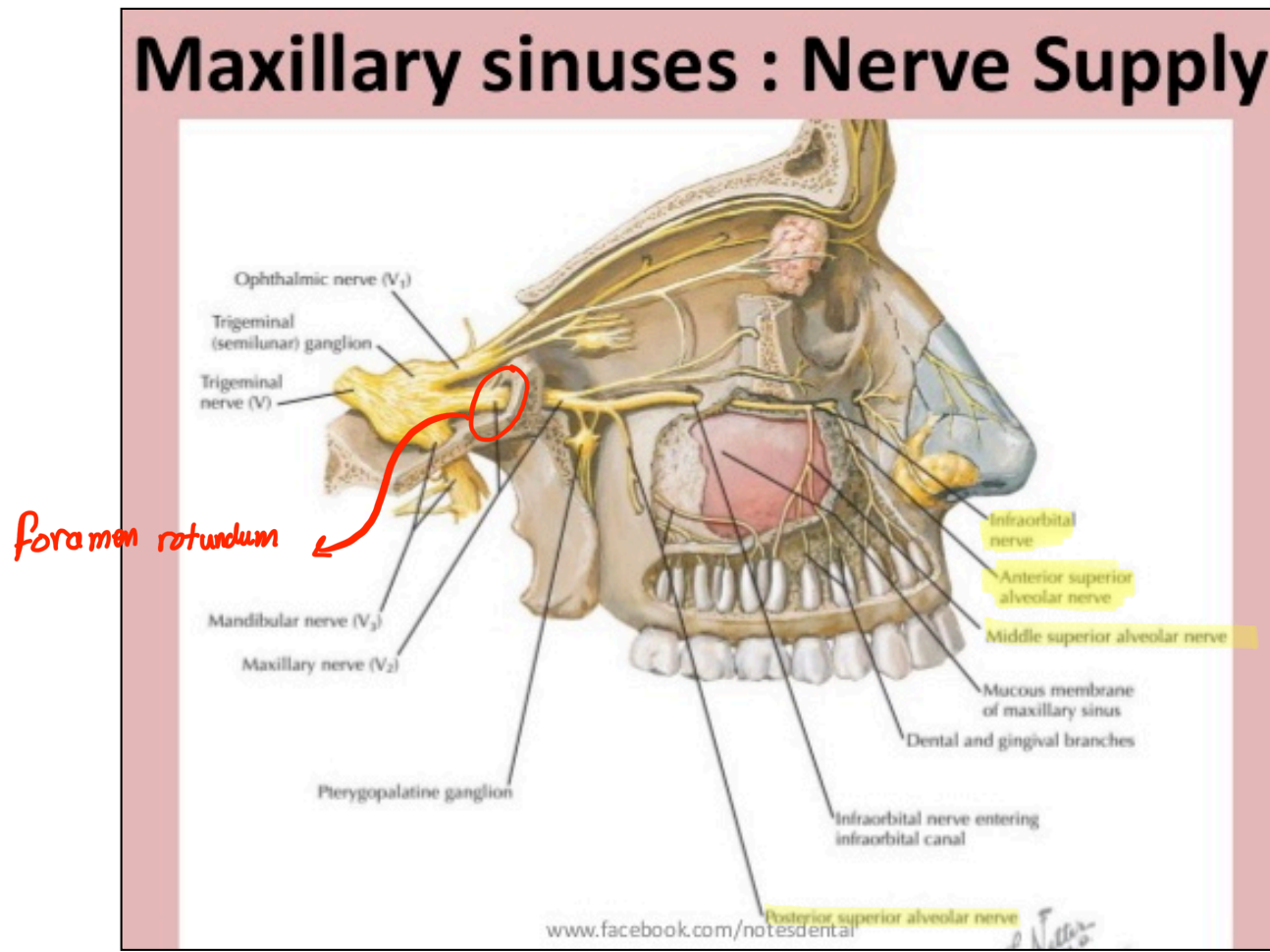


📌 All sinuses open in the middle meatus except:

1. Posterior ethmoidal sinuses
2. Sphenoidal sinus

# ❖ Paranasal Sinuses.

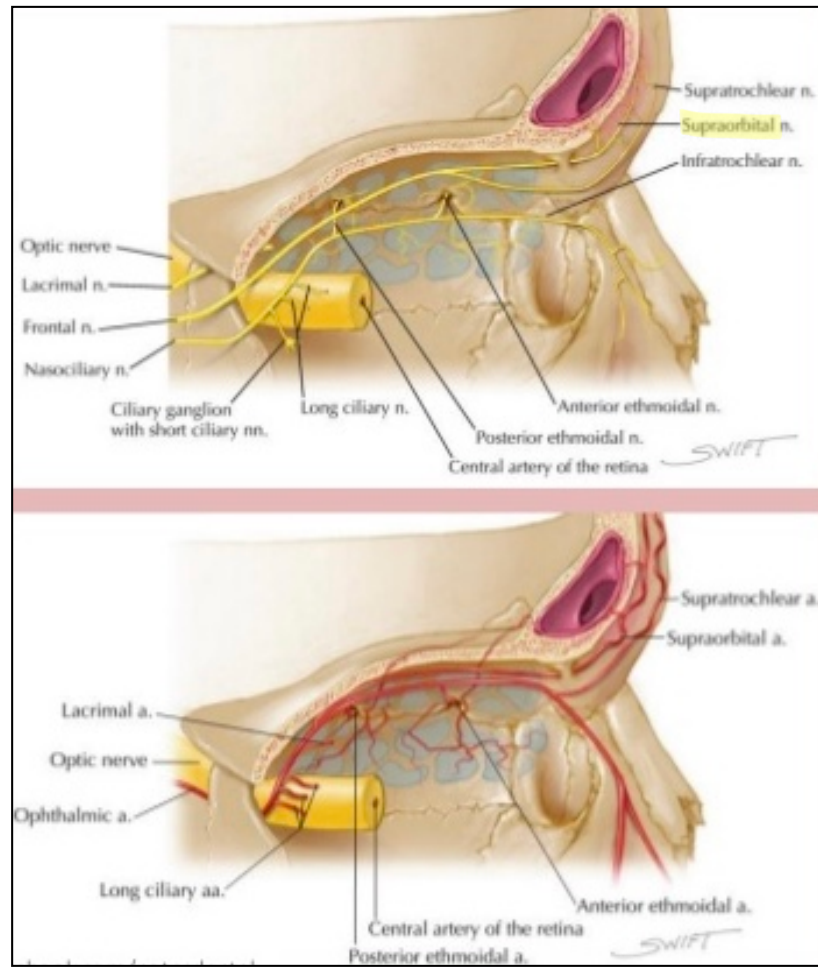
- The students should know nerve supply of the maxillary sinus :



It is innervated by the infraorbital and alveolar branches of the maxillary nerve

# ❖ Paranasal Sinuses.

- The students should know nerve supply of the frontal sinus :

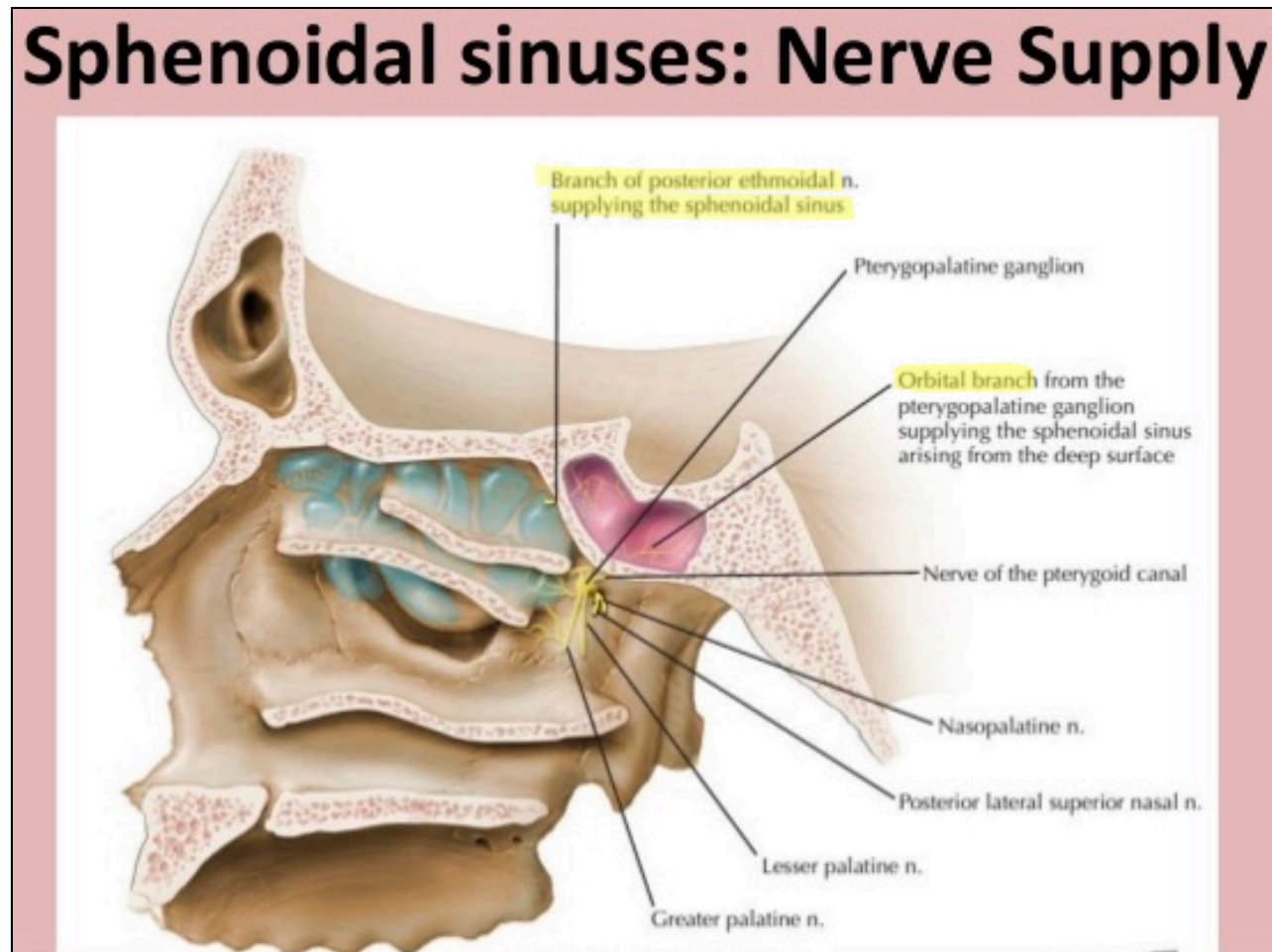


it is innervated by the supraorbital nerve, a branch of the ophthalmic nerve



# ✦ Paranasal Sinuses.

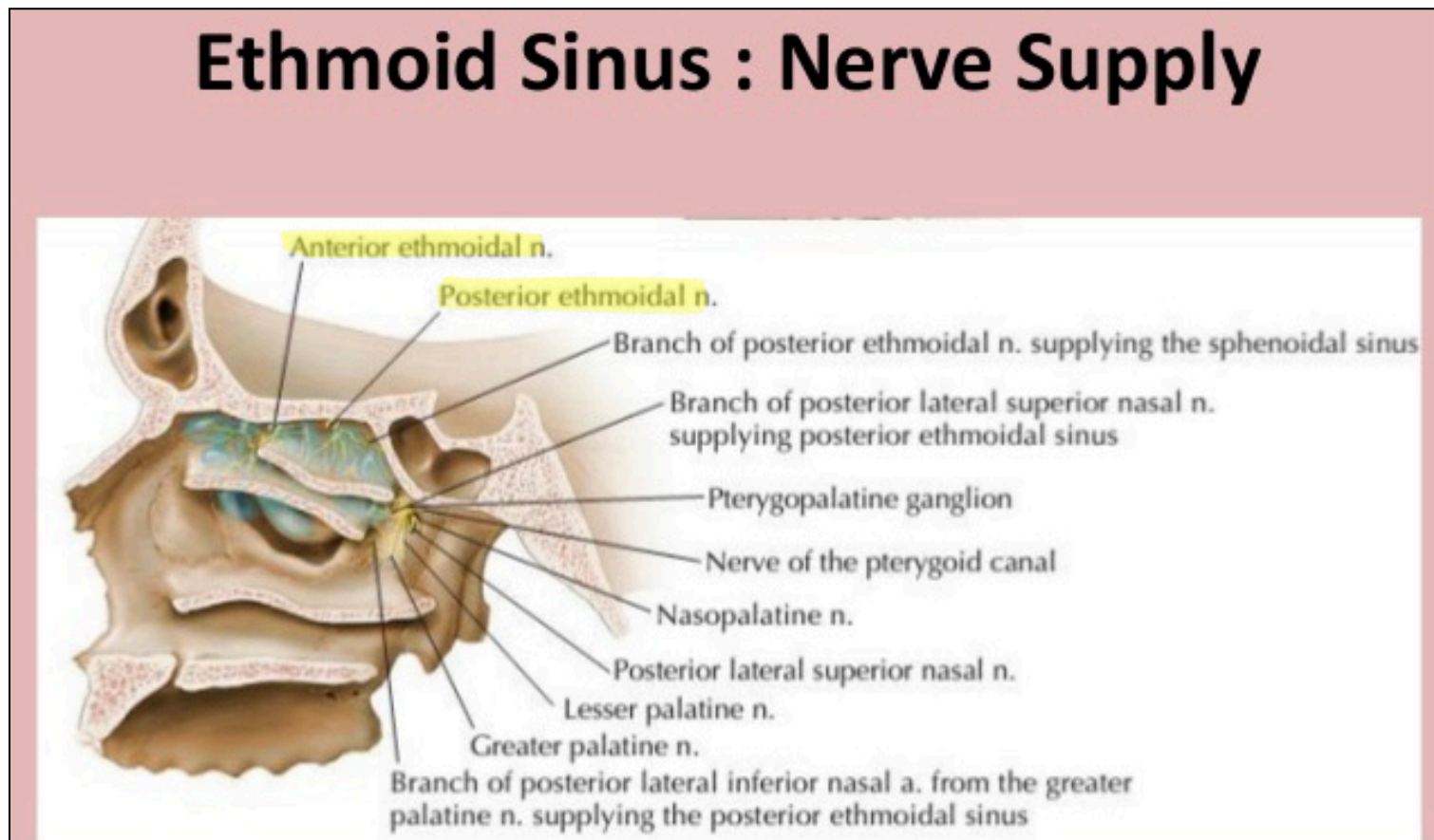
- The students should know nerve supply of the sphenoidal sinus :



It is innervated by the posterior ethmoidal nerve of the ophthalmic nerve and the orbital branches of the maxillary nerve

# ✦ Paranasal Sinuses.

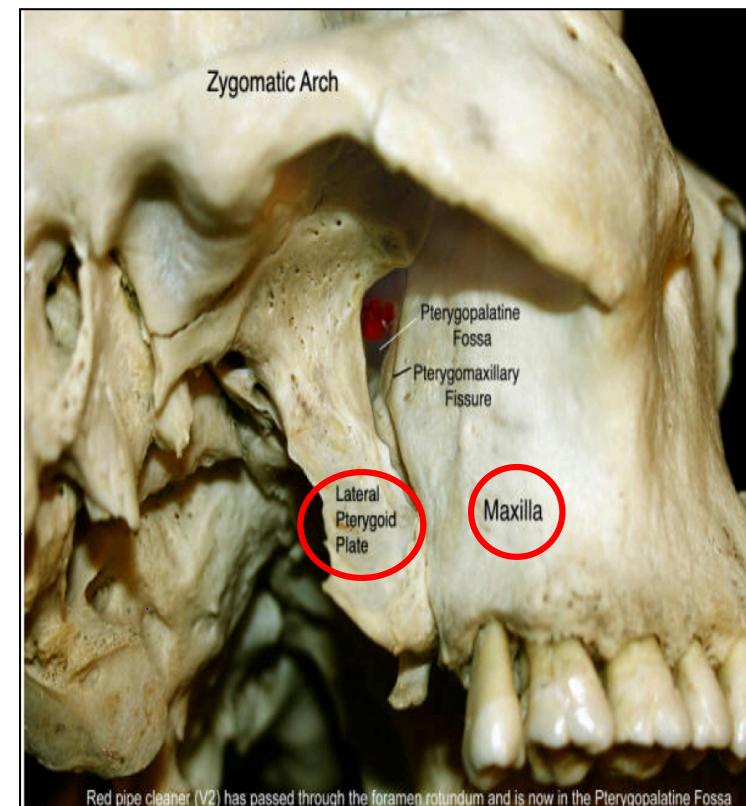
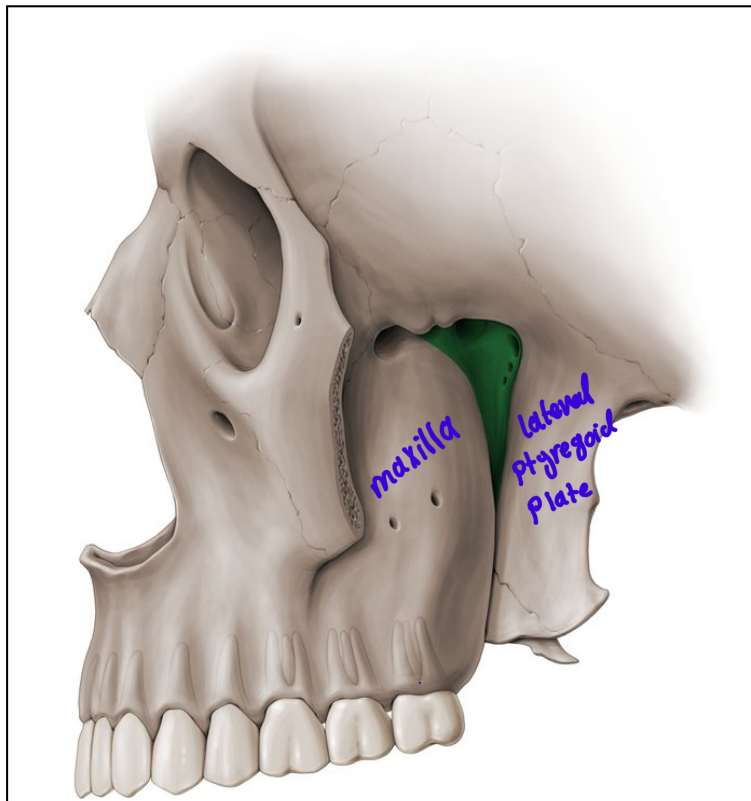
- The students should know nerve supply of the ethmoid sinus :



Innervated by the anterior and posterior ethmoidal branches of nasociliary nerve, a branch of ophthalmic nerve

# ✦ PTERYGOPALATINE FOSSA.

- The students should know the site of the fossa:  
lies Between the bones on the lateral side of the skull



# ✦ PTERYGOPALATINE FOSSA.

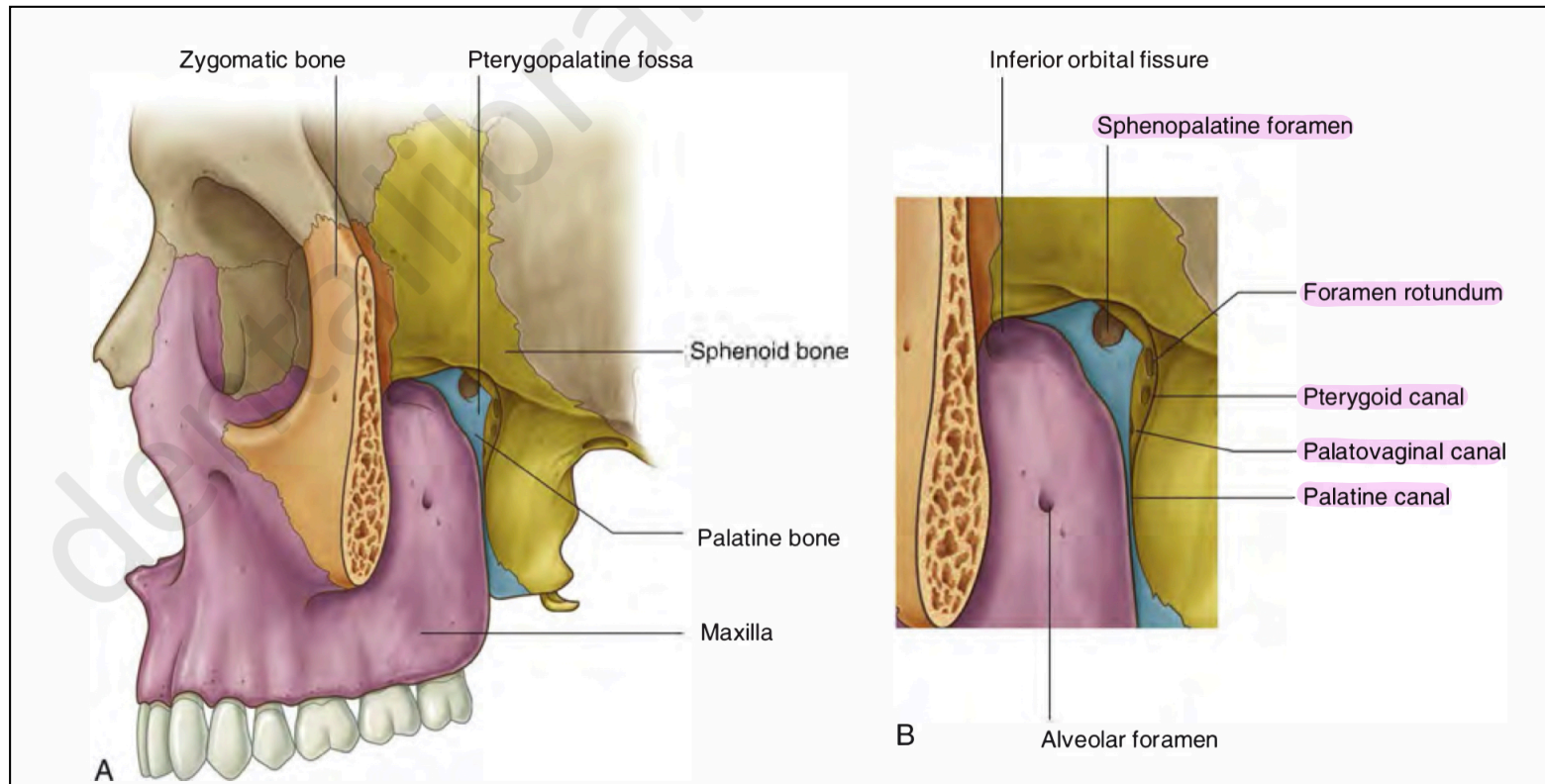
- The students should know the boundaries (walls) of the fossa:

- Anterior wall posterior surface of the maxilla.

- Medial wall lateral surface of the palatine bone

- Posterior wall and roof

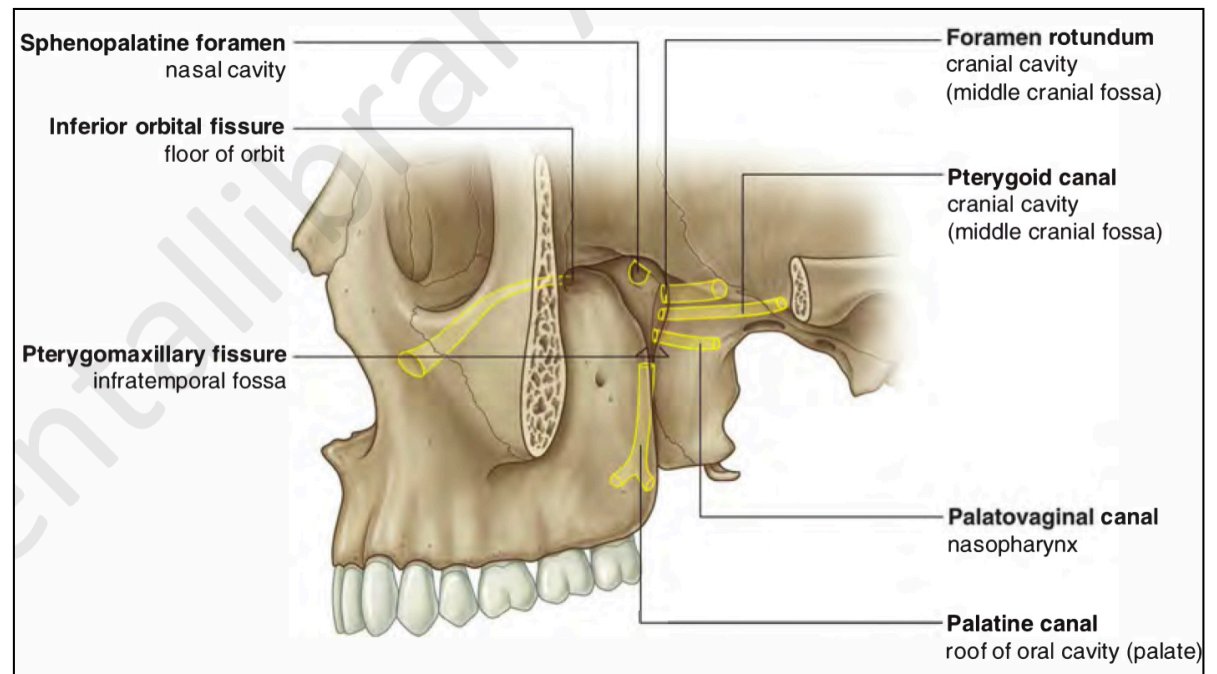
pterygoid plate (part of sphenoid bone) → greater wing of sphenoid bone



# ✱ PTERYGOPALATINE FOSSA.

- The students should know the foramina and fissures of the fossa and the communication of each one:

1. Foramen rotundum
2. pterygoid canal.
3. Palatovaginal canal.
4. Palatine canal.
5. Sphenopalatine foramen.
6. Pterygomaxillary fissure.
7. Inferior orbital fissure.

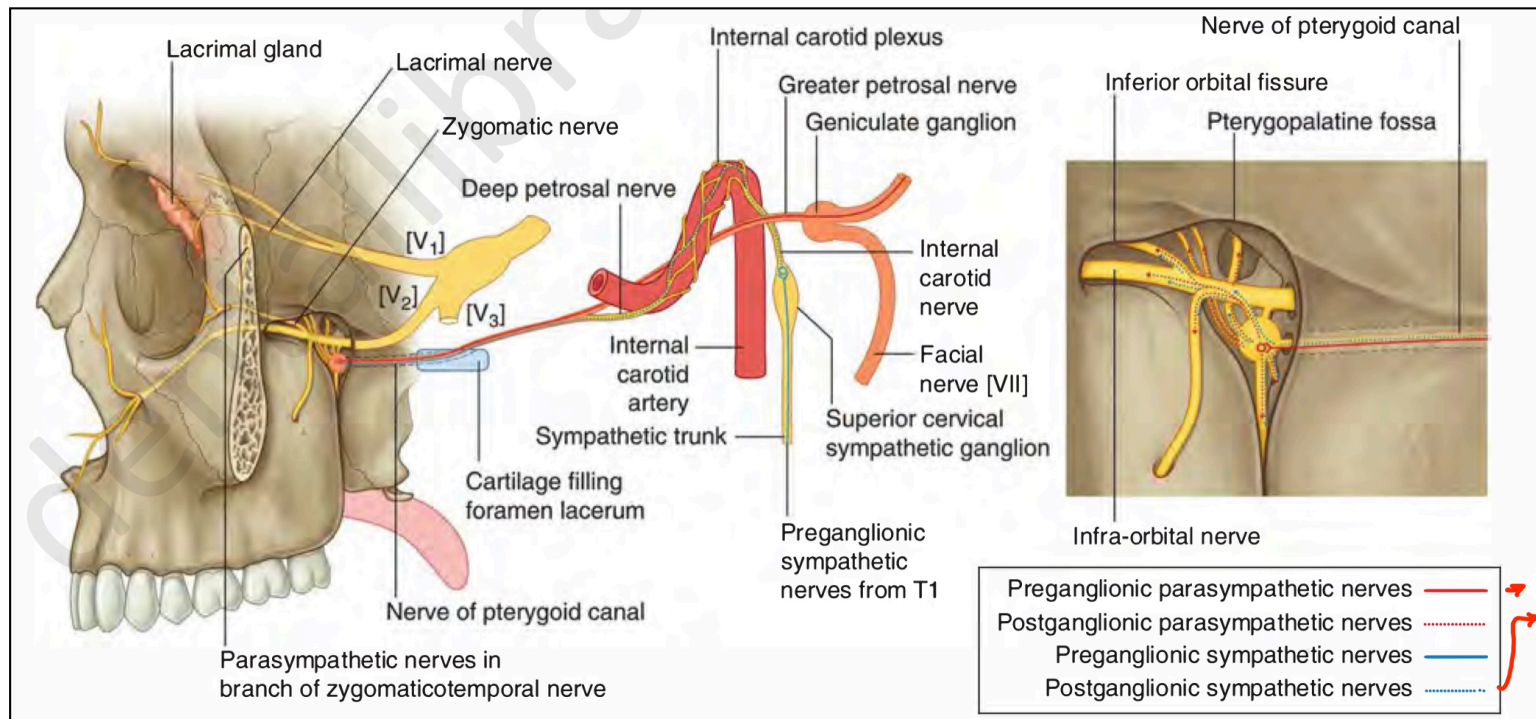


Extra .. (:) بس للاحتياط

- Maxillary nerve passes through foramen rotundum to enter the pterygopalatine fossa.
- Greater petrosal nerve & Deep petrosal nerve pass through pterygoid canal.
- Pharyngeal artery & nerve (branches of maxillary in pterygopalatine fossa) pass through palatovaginal canal (pharyngeal canal).
- Palatine artery (greater & lesser) and nerve pass through palatine canal.
- Sphenopalatine vessels & nerve (nasopalatine) pass through sphenopalatine foramen.
- Maxillary vessels and nerve pass through Pterygomaxillary fissure.
- Infraorbital nerve, Zygomatic nerve, Infraorbital artery and vein pass through inferior orbital fissure

# PTERYGOPALATINE FOSSA.

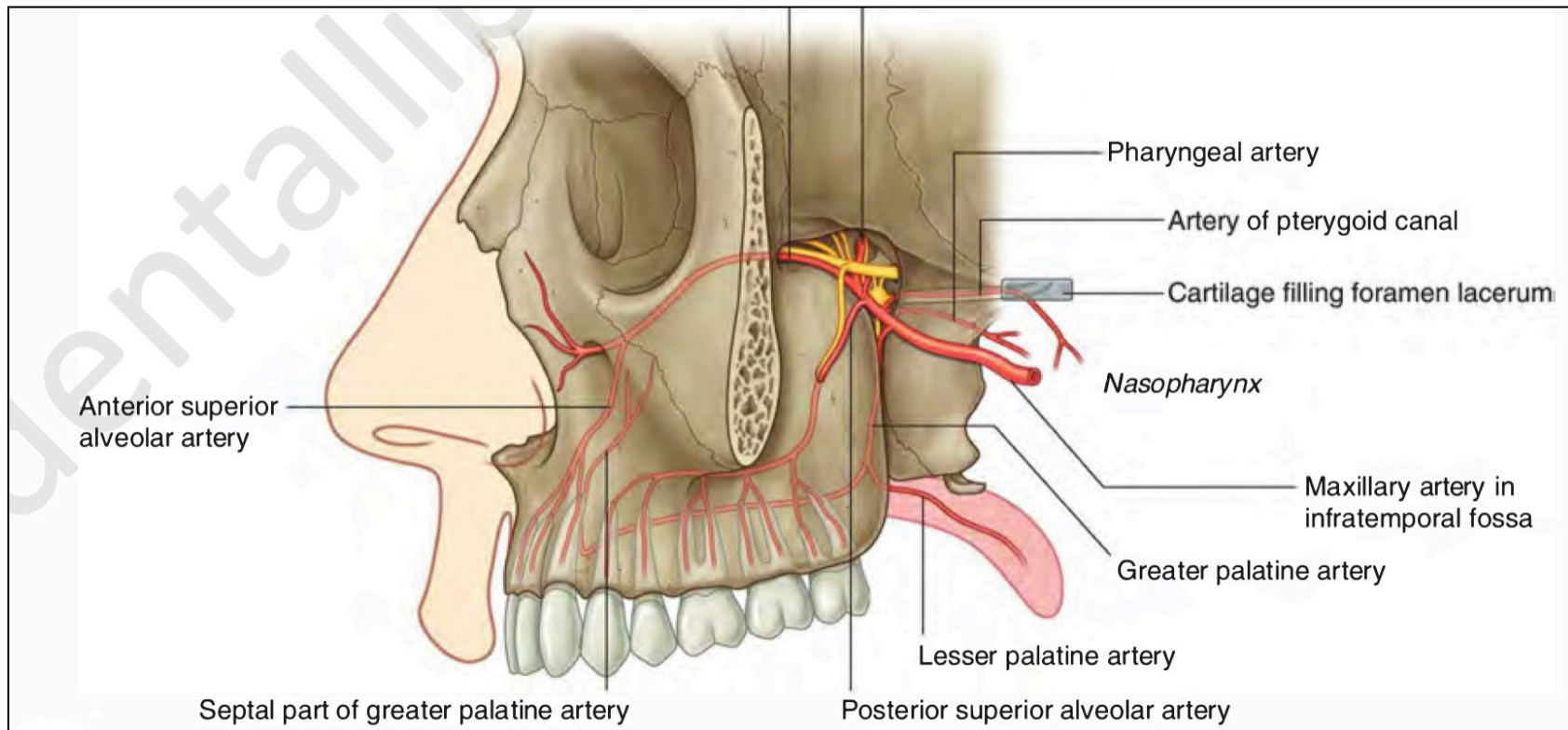
- The students should know the contents of the fossa:
  - The maxillary nerve. *pure sensory*
  - Terminal part of the maxillary artery. *(Third part)*
  - Nerve of the pterygoid canal.
  - The pterygopalatine ganglion.
  - Veins and lymphatics.



→ Greater petrosal nerve  
 → Deep petrosal nerve  
 \* pass through the gangli without synapse  
 \* come from superior cervical ganglion and pass around internal carotid artery

# ✦ PTERYGOPALATINE FOSSA.

- The students should know the contents of the fossa:



## **How Maxillary nerve leave pterygopalatine fossa and enter infratemporal fossa?**

Maxillary artery come from middle cranial fossa >> pterygopalatine fossa through the foramen rotundum>> infratemporal fossa through pterygomaxillary fissure to give posterior superior alveolar nerve

Maxillary artery originates in the parotid then passes through infratemporal fossa then enters the pterygopalatine fossa through pterygomaxillary fissure then pass through .



# ✦ Pterygopalatine ganglion

- The students should know that ganglion formed by cell bodies neurons associated with:
  1. Preganglionic parasympathetic fibers (great petrosal).
  2. Sensory and ganglionic branches of the maxillary nerve.
  3. Postganglionic sympathetic fibers (deep petrosal).

