

وسهلا



أهلا

يُمنع أخذ السلايدات بدون
إذن المحرر واي اجراء
يخالف ذلك يقع تحت طائلة
المسؤولية القانونية
جميع المعلومات للاستخدام
التعليمي فقط

الأستاذ الدكتور يوسف حسين

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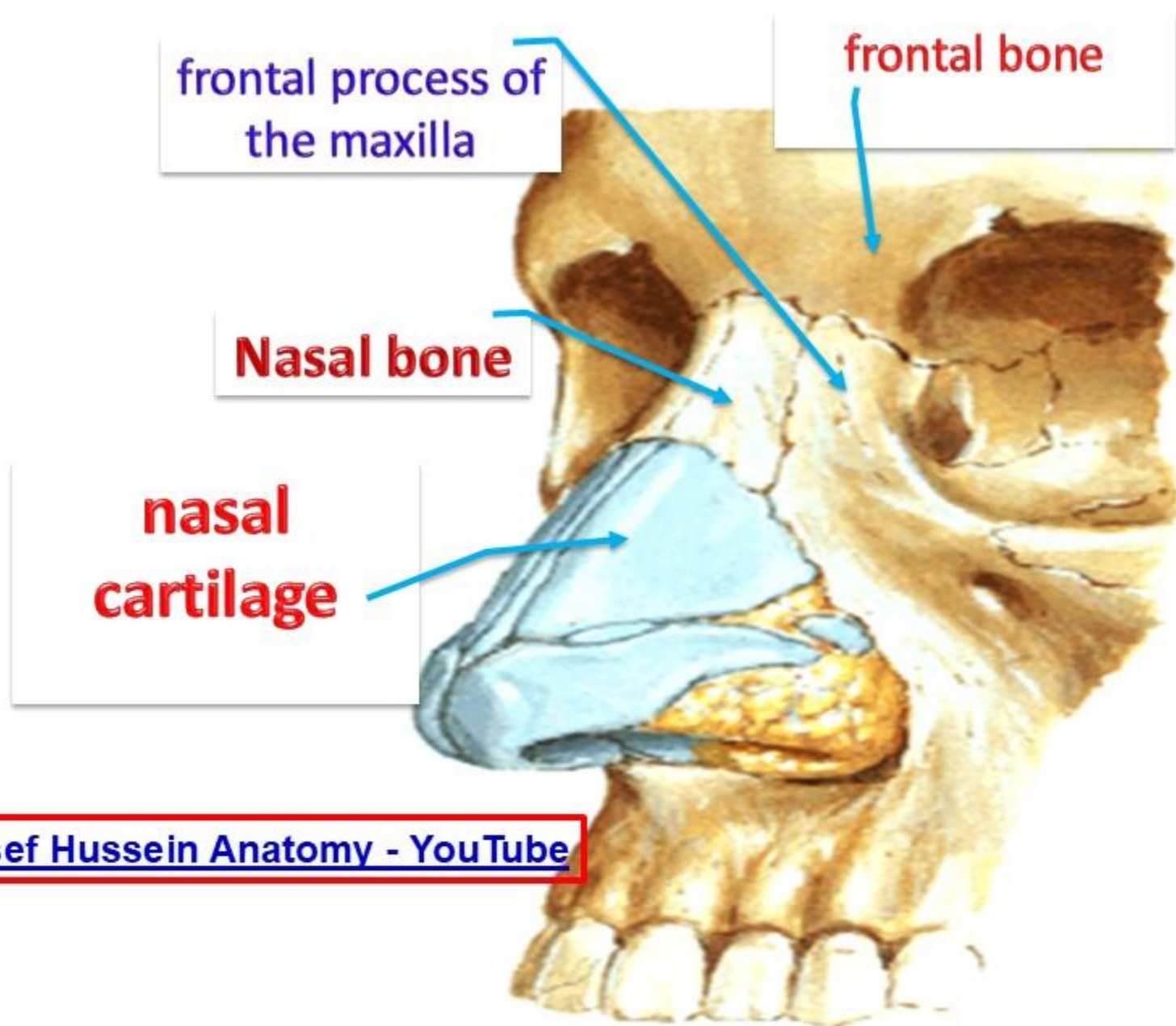
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NOSE & PARANASAL SINUSES

<https://www.youtube.com/c/ProfDrYoussefHusseinaAnatomy/featured>

An Intended Learning Outcomes (ILOs)

- Boundaries of the nasal cavity
- Features of the lateral wall of the nasal cavity
- Blood supply of the nose
- Little's area and Epistaxis
- Paranasal sinuses (openings, blood supply, nerve supply and lymphatic drainage)
- Clinical notes about the paranasal sinuses



frontal process of the maxilla

frontal bone

Nasal bone

nasal cartilage

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Boundaries External nose

A large red graphic resembling a scroll, with a white outline and decorative curls at the top and bottom edges. The text "Nasal Cavity" is centered within this graphic in a white, bold, sans-serif font.

Nasal Cavity

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- The **cavity of the nose** is dividing into right and left halves by the **nasal septum**.

- Each cavity opens

A- Anteriorly on the **face** by the anterior nasal aperture (nostril)

B- Posteriorly into the **nasopharynx** by the posterior nasal aperture.

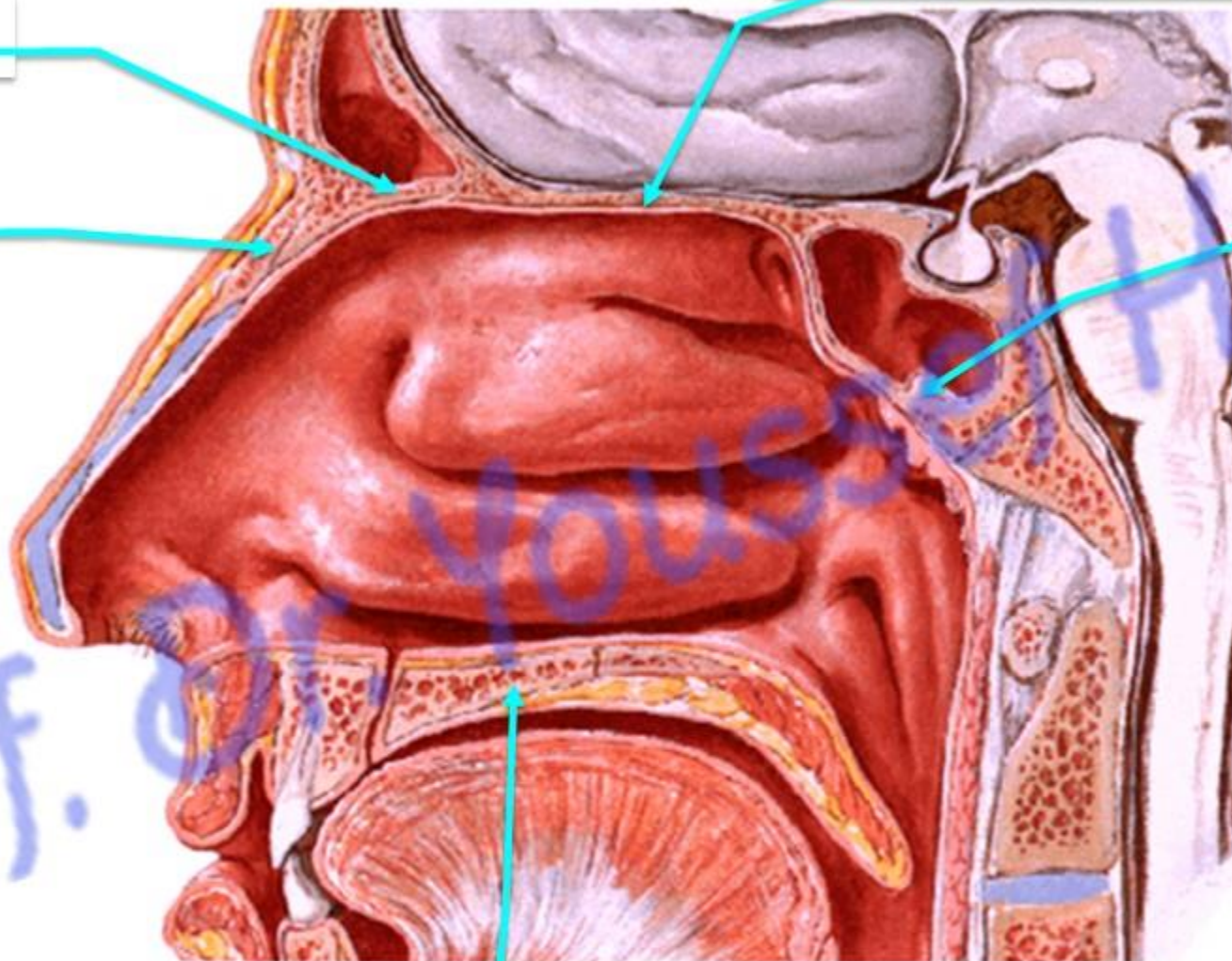
Roof

Cribriform plate of ethmoid bone

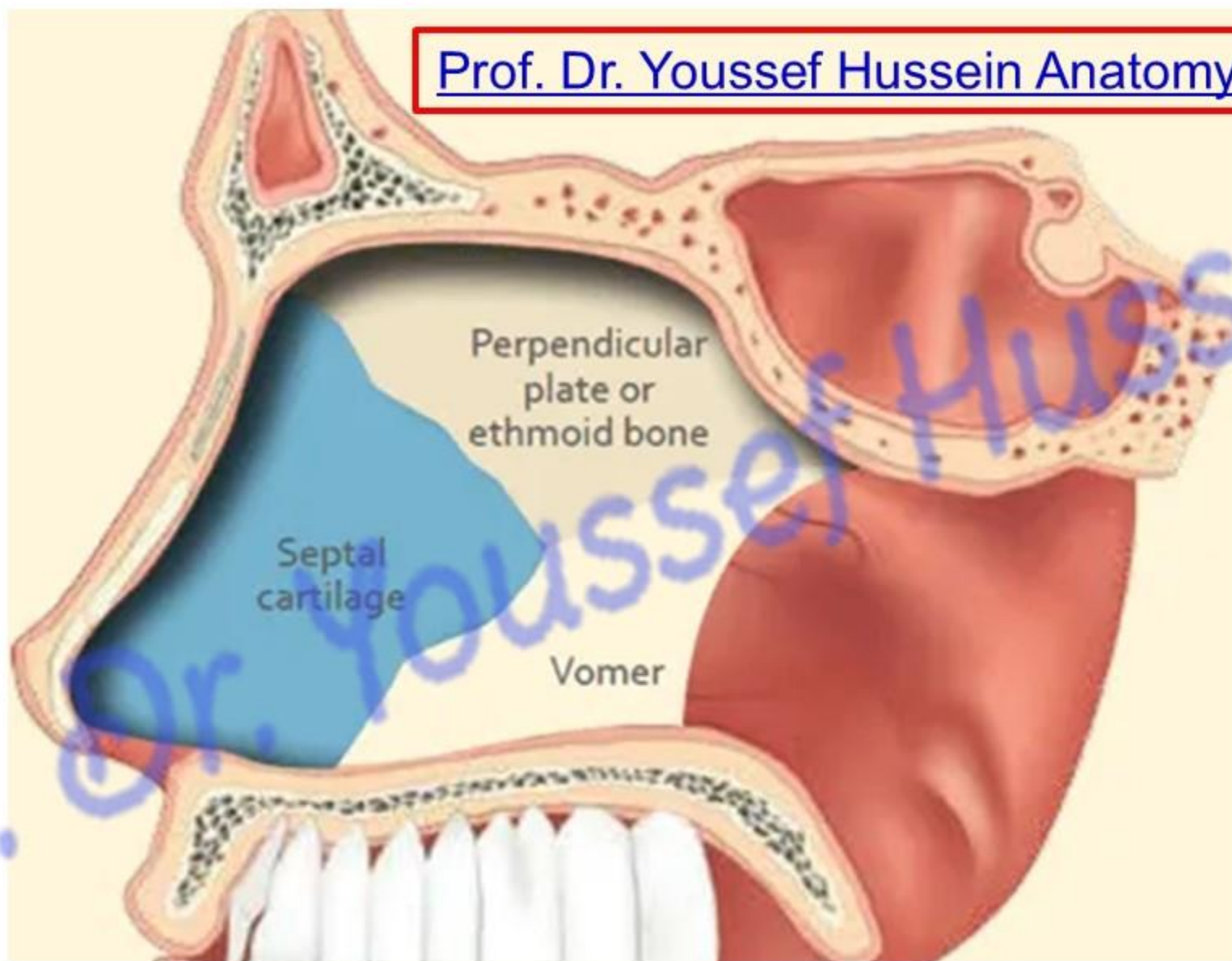
Frontal bone

Nasal bone

Body of the sphenoid

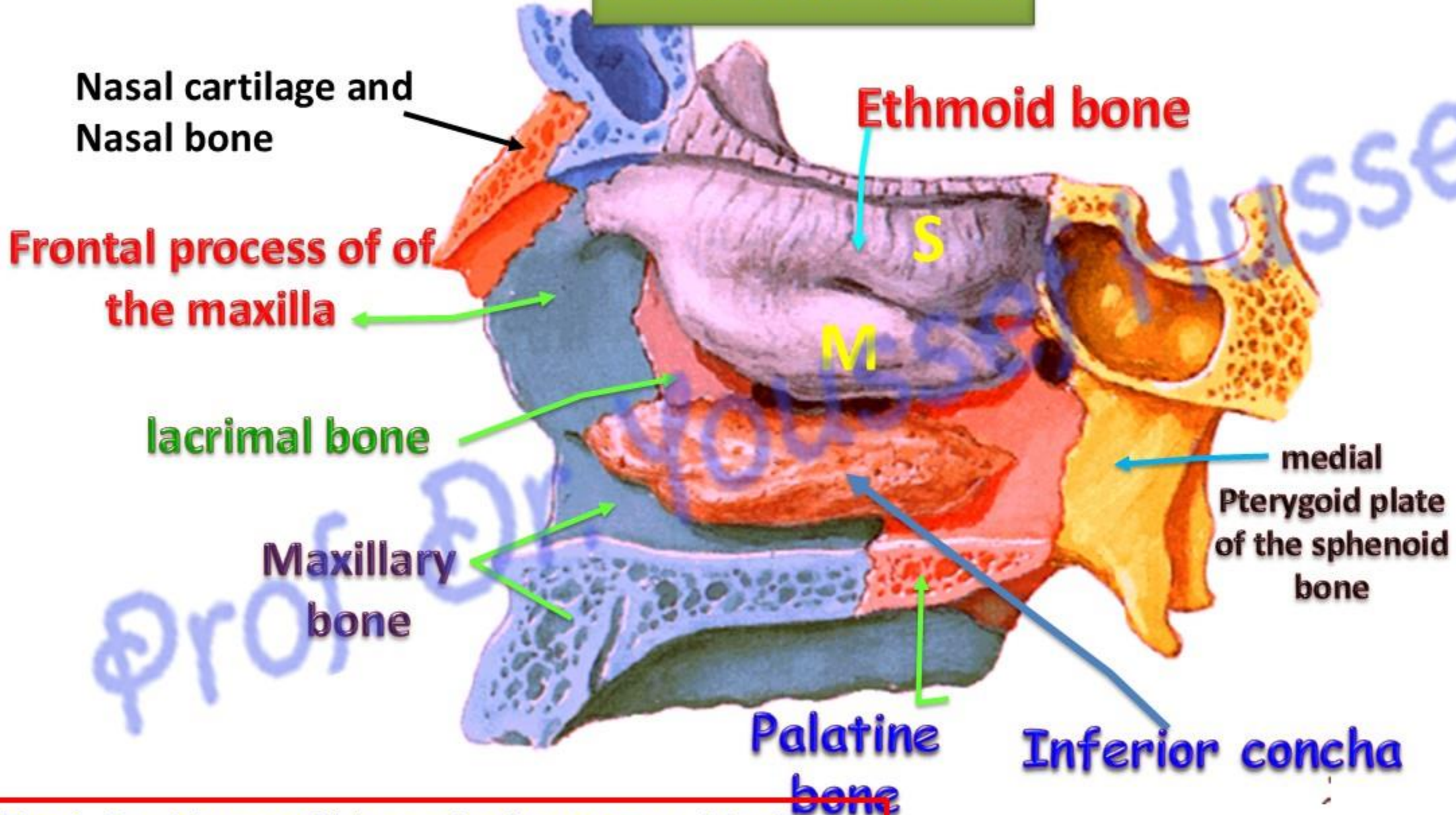


Floor is hard palate separating it from oral cavity



Nasal septum

Lateral wall



Lateral wall

Sphenoethmoidal recess

Frontal sinus

Superior concha

Superior meatus

Middle meatus

inferior concha

Inferior meatus

Temp Lobe

Hypothalamus

M B

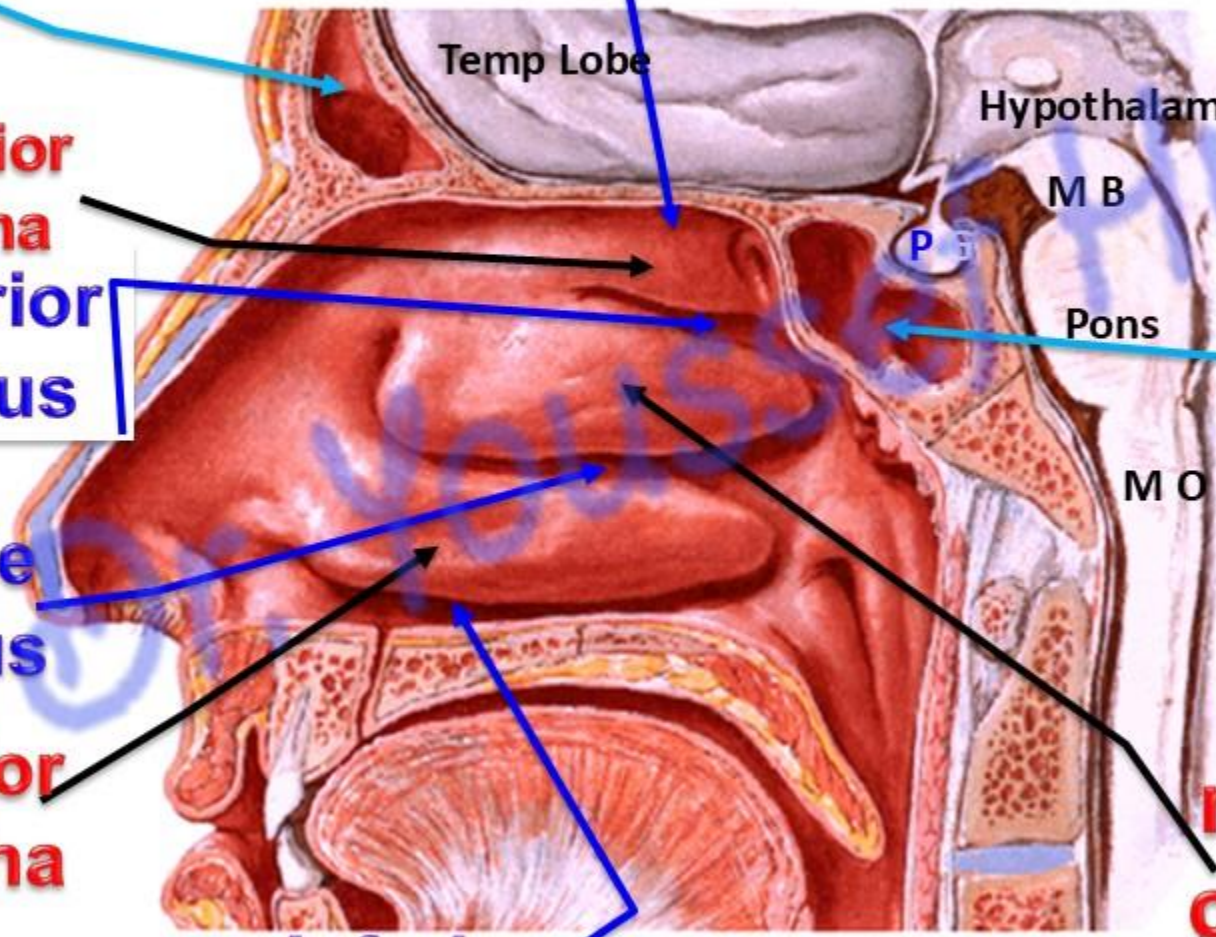
P

Pons

M O

sphenoid air sinus

middle concha



- **Openings in the nasal meatuses of the lateral wall:**

(1) **Sphenoethmoidal recess:** above the **superior concha**.

- It receives the opening of the **sphenoidal air sinus**.

(2) **Superior Meatus** : below superior concha and receives opening of the **posterior ethmoidal air sinus**.

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(3) **Middle meatus:** below middle concha and **shows**,

a- Bulla ethmoidalis: a rounded elevation overlies the **middle ethmoidal air sinus** and receives its opening.

b- Hiatus semilunaris: a crescent groove below the bulla ethmoidalis receiving the opening of

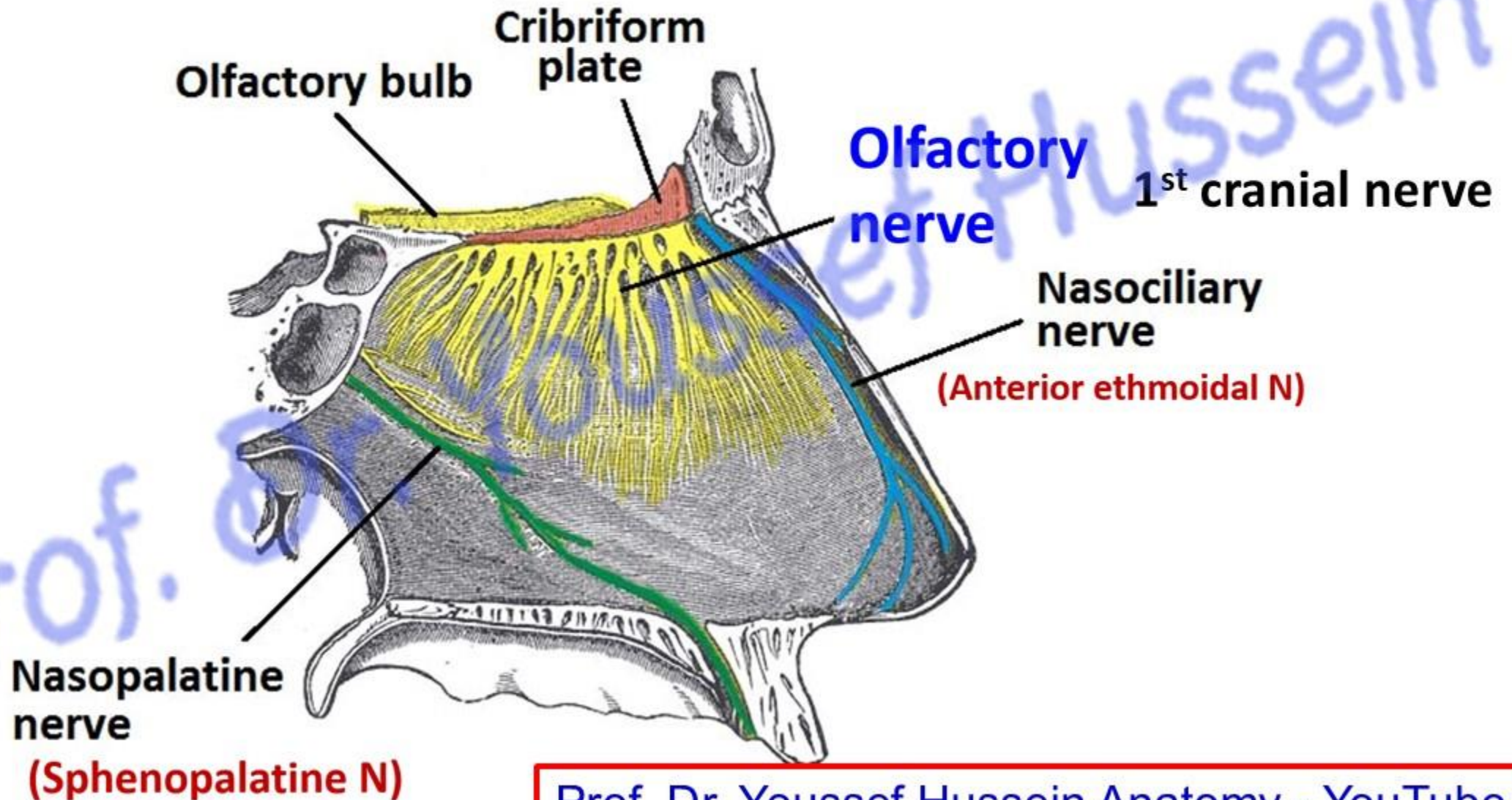
1) Frontal air sinus opens into the anterior end.

2) Anterior ethmoidal air sinuses.

3) Maxillary air sinus opens near the posterior end.

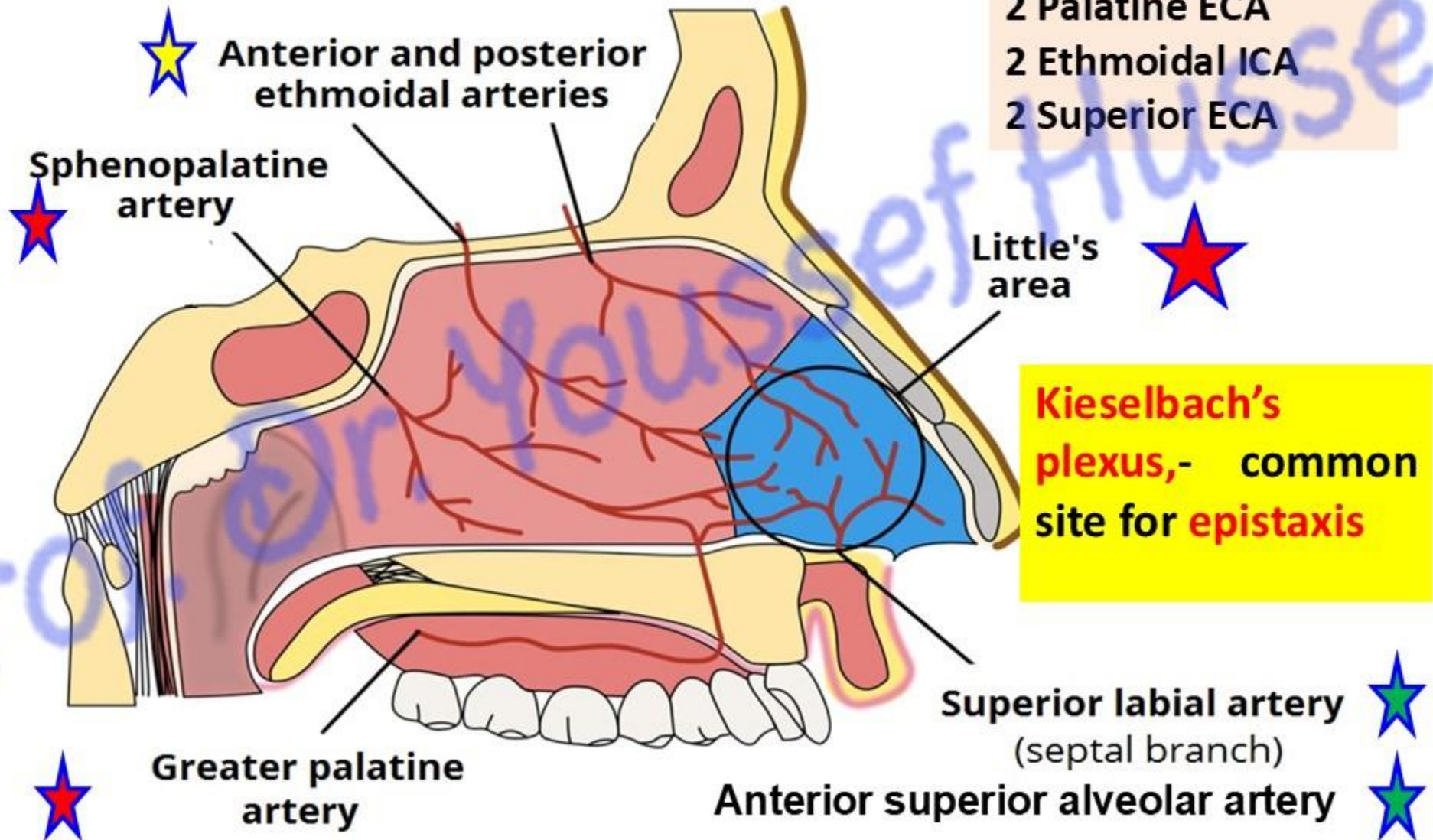
(4) **Inferior-meatus:** below inferior concha and receives the opening of **nasolacrimal duct**.

Nerve supply of the nose



Arterial blood supply of the nose

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A- Arterial supply of the nose:

- 1- **Sphenopalatine artery**: from the 3rd part of maxillary artery (main source of blood supply).
- 2- **Greater palatine** from the 3rd part of maxillary artery,
- 3,4- **Anterior and posterior ethmoidal** from ophthalmic artery.
- 5- **Septal branch** of the **superior labial artery** (facial artery).
- 6- **Anterior superior alveolar artery** from the 3rd part of maxillary artery.

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B- Venous drainage

The veins drain into the pterygoid and pharyngeal venous plexus and facial vein.

▪ Lymphatic drainage

- **Anterior Part**: drains into the submandibular lymph nodes.
- **Posterior Part**: drains into the retropharyngeal and upper deep cervical lymph nodes.

▪ **Applied anatomy,**

- **Little's area** is an area on the inferior and anterior part of the **nasal septum** showing rich arterial anastomosis (**Kieselbach's plexus**). This anastomosis is formed by;

1) Sphenopalatine artery.

2) Greater palatine artery.

3,4) Anterior and posterior ethmoidal arteries.

5) Septal branch of superior labial artery.

- It is a common site for **epistaxis** (bleeding from the nose).

- **To stop the bleeding:**

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a- Sit down and firmly pinch the soft part of nose for 10-15 M, **NOT** lean backward because blood drains into throat

b- Nasal pack soaked with adrenaline in the vestibule.

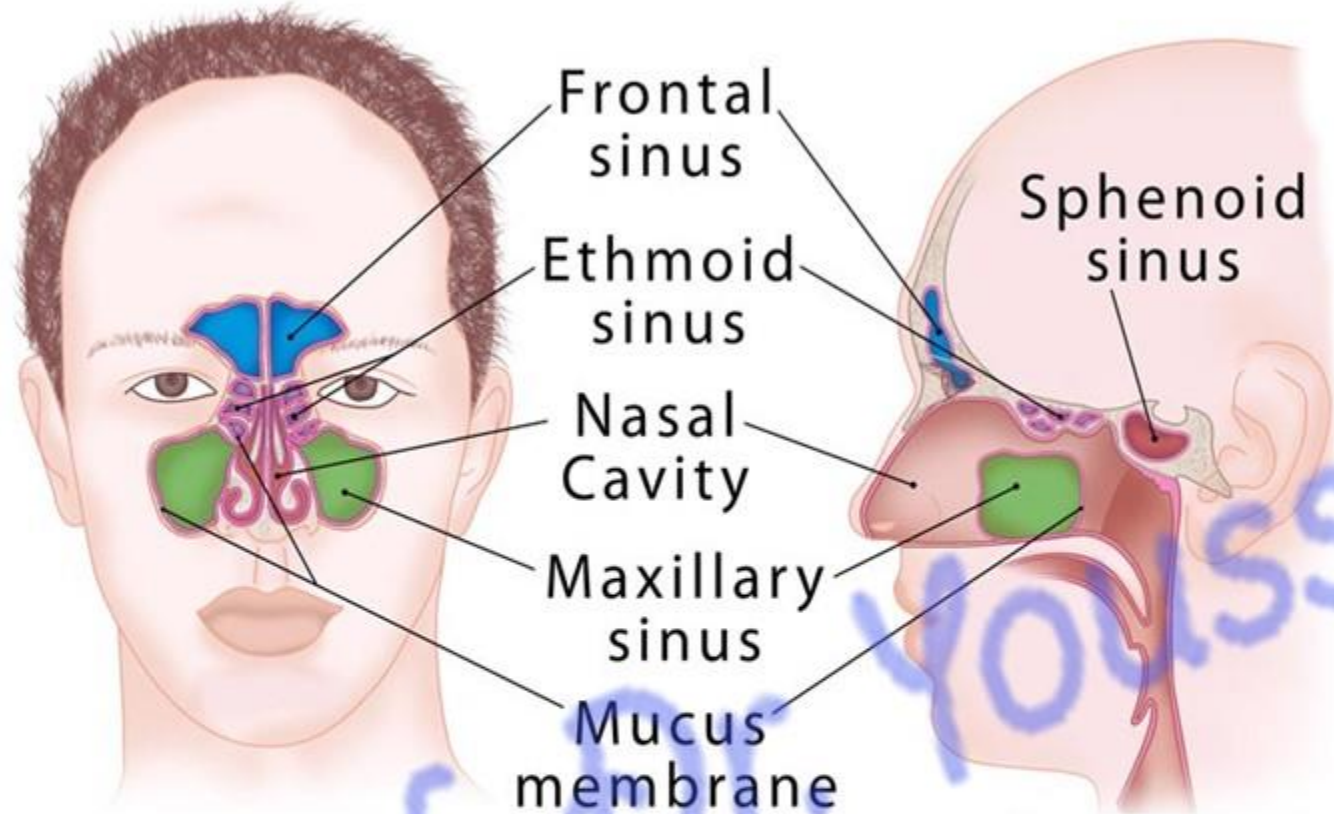
c- Cauterization of the bleeding arteries.

d- Legation of the 3rd part of the maxillary artery.

▪ Anastomosis between ECA & ICA in the nose

- 1- **Anterior and posterior ethmoidal** from ophthalmic artery (*internal carotid artery*).
- 2- **Sphenopalatine** artery: from the 3rd part of maxillary artery (main source of blood supply), (*external carotid artery*)
- 3- **Greater palatine** branch of the 3rd part of maxillary artery, (*external carotid artery*)
- 4- **Septal branch of the superior labial artery** (facial artery), (*external carotid artery*)
- 5- **Anterior superior alveolar artery** (from infra orbital artery from the 3rd part of maxillary artery, (*external carotid artery*))

Paranasal Sinuses



▪ Paranasal sinuses

▪ They are air filled spaces inside the skull bones related to the nose and opens in the lateral wall of the nasal cavity.

▪ Functions:

- 1) Lighten the weight of the skull.
- 2) Gives resonance to the voice.
- 3) Warming and humidification of inspired air.

Paranasal sinuses

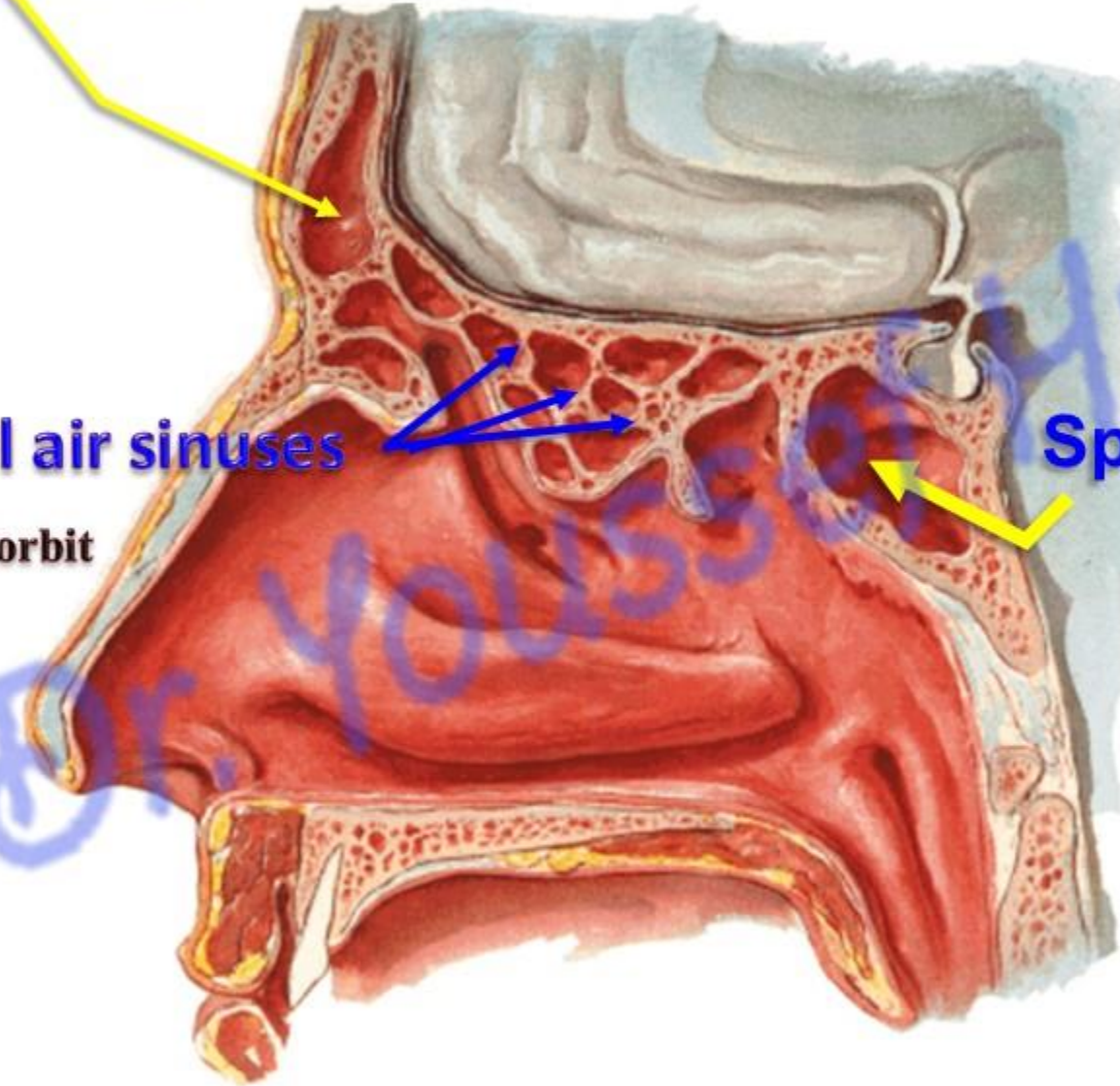
frontal sinus

Ethmoidal air sinuses

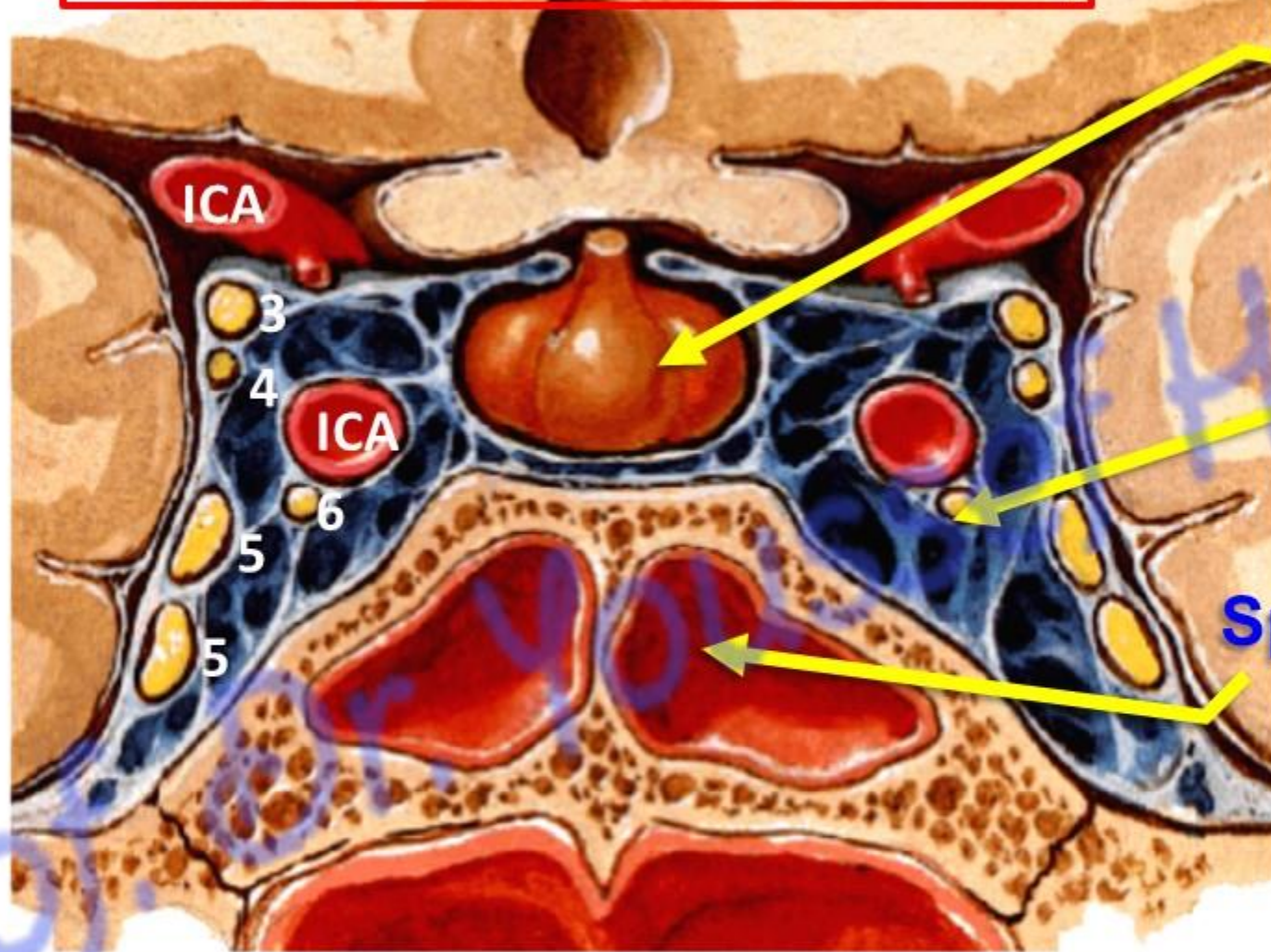
Between nose & orbit

- Anterior
- Middle
- Posterior

Sphenoidal sinus



	Frontal	Sphenoidal	Ethmoidal	Maxillary
Site	frontal bone	body sphenoid	ethmoid bone	maxilla
Opening	hiatus semilunaris of middle meatus	spheno-ethmoidal recess	<ul style="list-style-type: none"> - Posterior into superior meatus. - Middle into bulla ethmoidalis - Anterior into hiatus semilunaris 	hiatus semilunaris of middle meatus
Nerve & blood vessels	supratrochlear and supraorbital (ophthalmic N&VS)	posterior ethmoidal (ophthalmic N&VS)	<ul style="list-style-type: none"> a- posterior by posterior ethmoidal b- Anterior and middle by anterior ethmoidal N&VS 	Superior alveolar N&VS (Maxillary)
Lymph nodes	submandibular	Retropharyngeal	<ul style="list-style-type: none"> a- Posterior into retropharyngeal b- Anterior & middle into submandibular 	submandibular



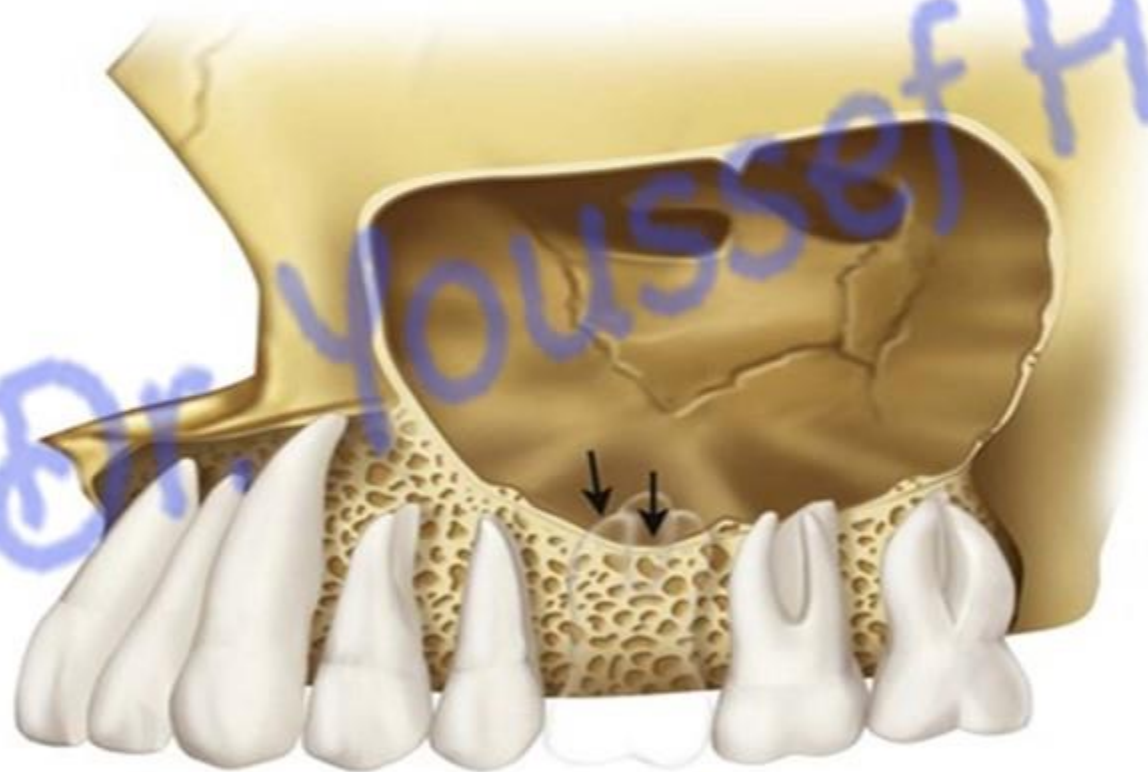
Pituitary gland

Cavernous sinus

Sphenoidal sinus

- ❖ **Sphenoidal sinus** is related to
 - Pituitary gland (above)
 - Cavernous sinus (on each side)

Maxillary sinus



**Maxillary
sinus**

Base

The lateral
wall of the
nasal cavity

Roots of
upper teeth

Floor

Alveolar
process
of maxilla

Roof

The
floor of
the orbit

Apex

Zygomatic
process of
maxilla



▪ Maxillary sinus

- **Shape** pyramidal in shape

- **Relations:**

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(1) **Apex:** directed laterally and lies at the zygomatic process of maxilla.

(2) **Base:** directed medially and formed by lateral wall of the nasal cavity and contains **opening of the sinus in upper part.**

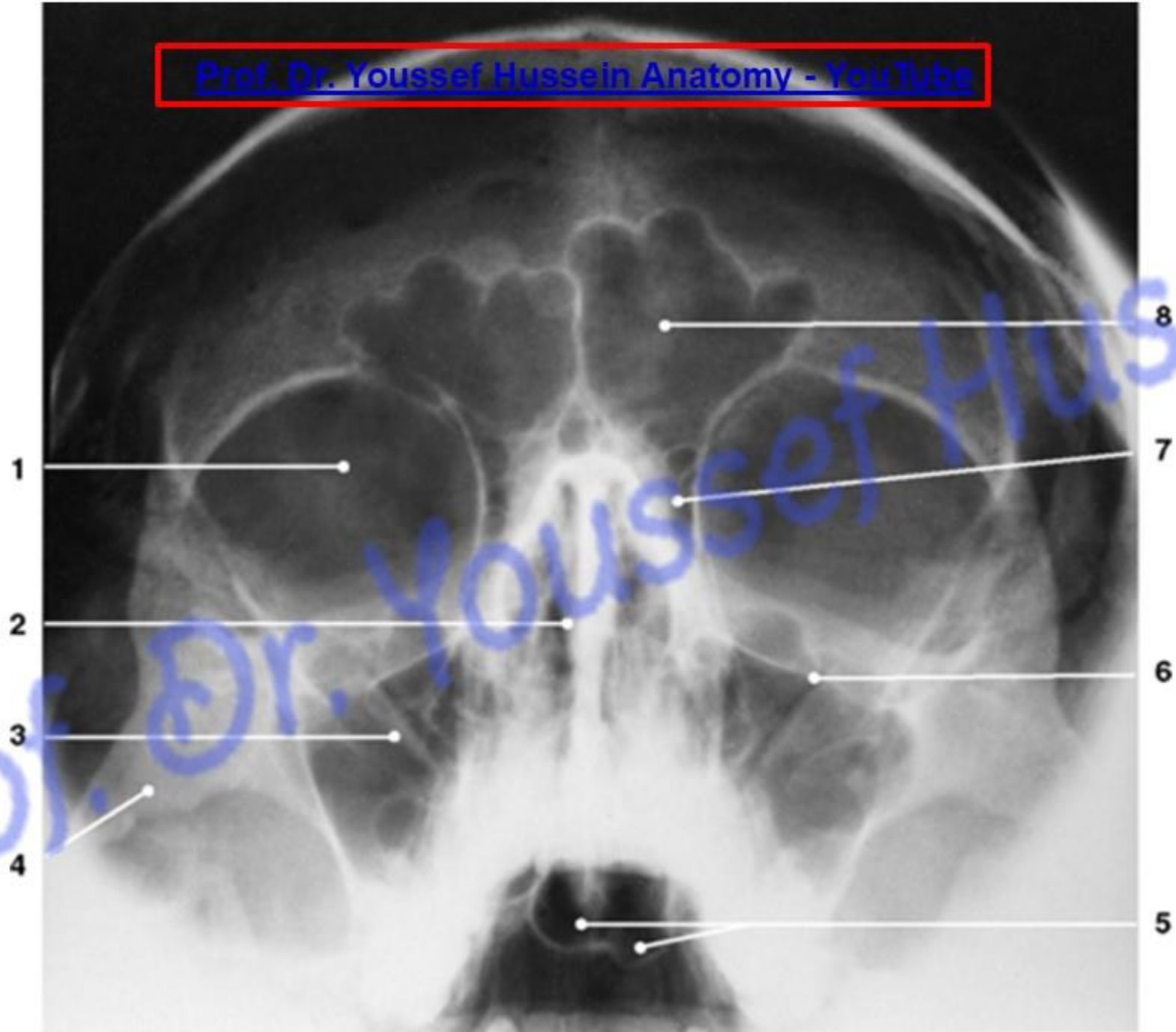
(3) **Roof:** formed by the floor of the orbit. The roof is traversed by the **infra orbital canal** containing infra-orbital nerve and vessel.

(4) **Floor:** formed by the alveolar process of maxilla (**Roots of molar and premolar teeth**).

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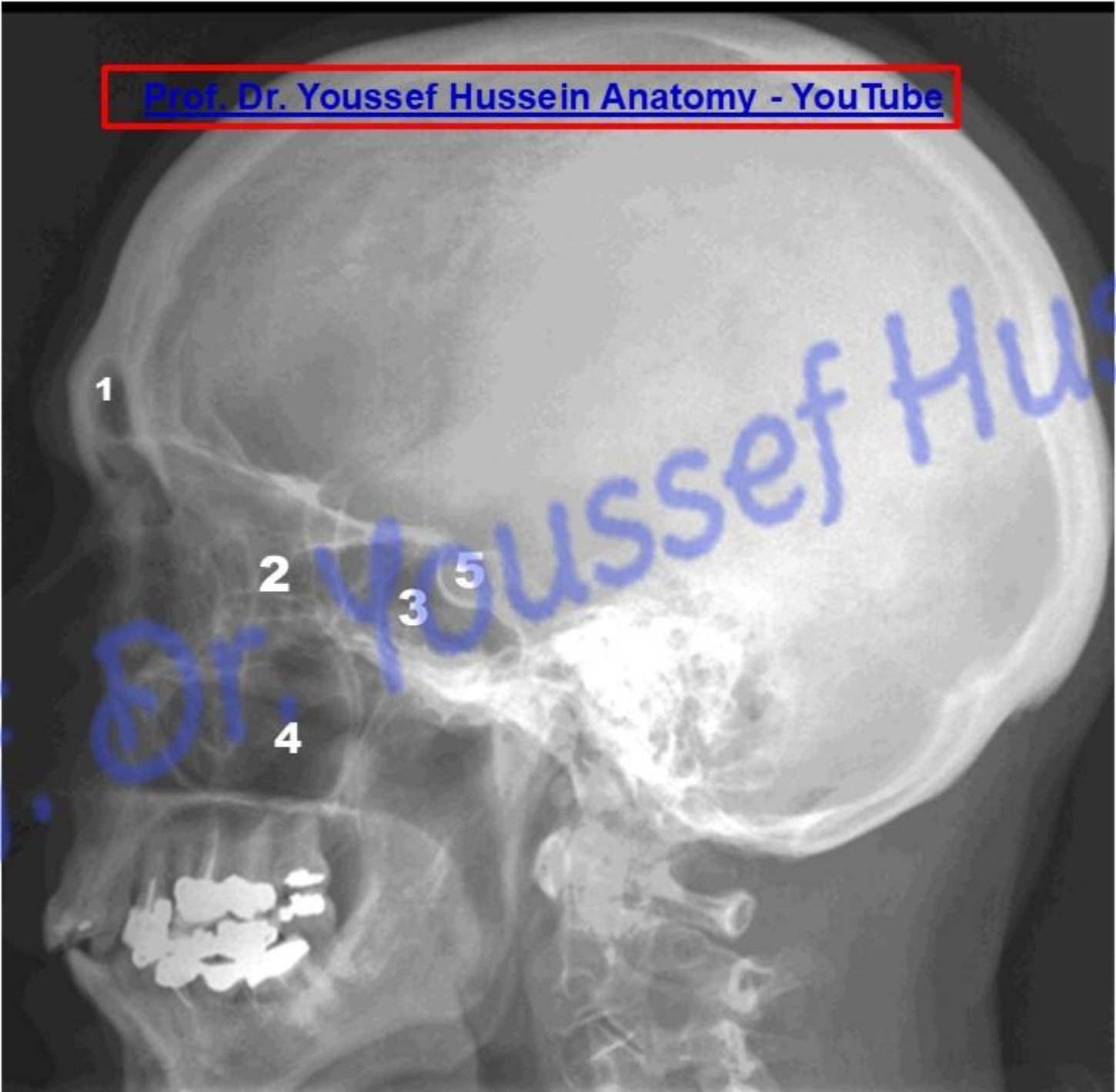
Clinical notes about maxillary sinus

- **Opening of the sinus in the upper part of the base** so the higher position makes the drainage difficult leading to **sinusitis**.
- **Superior alveolar nerves** supply **both sinus** and **upper teeth and gum** so inflammation of the sinus can be confused with **toothache (Referred pain)**.
- **The roots of the upper molars bulge into the floor of the sinus** but not perforated. During Dental Extraction must be care to avoid fraction of the root **because** the fractured root may be driven into the maxillary sinus forming **communication** between the sinus and oral cavity.



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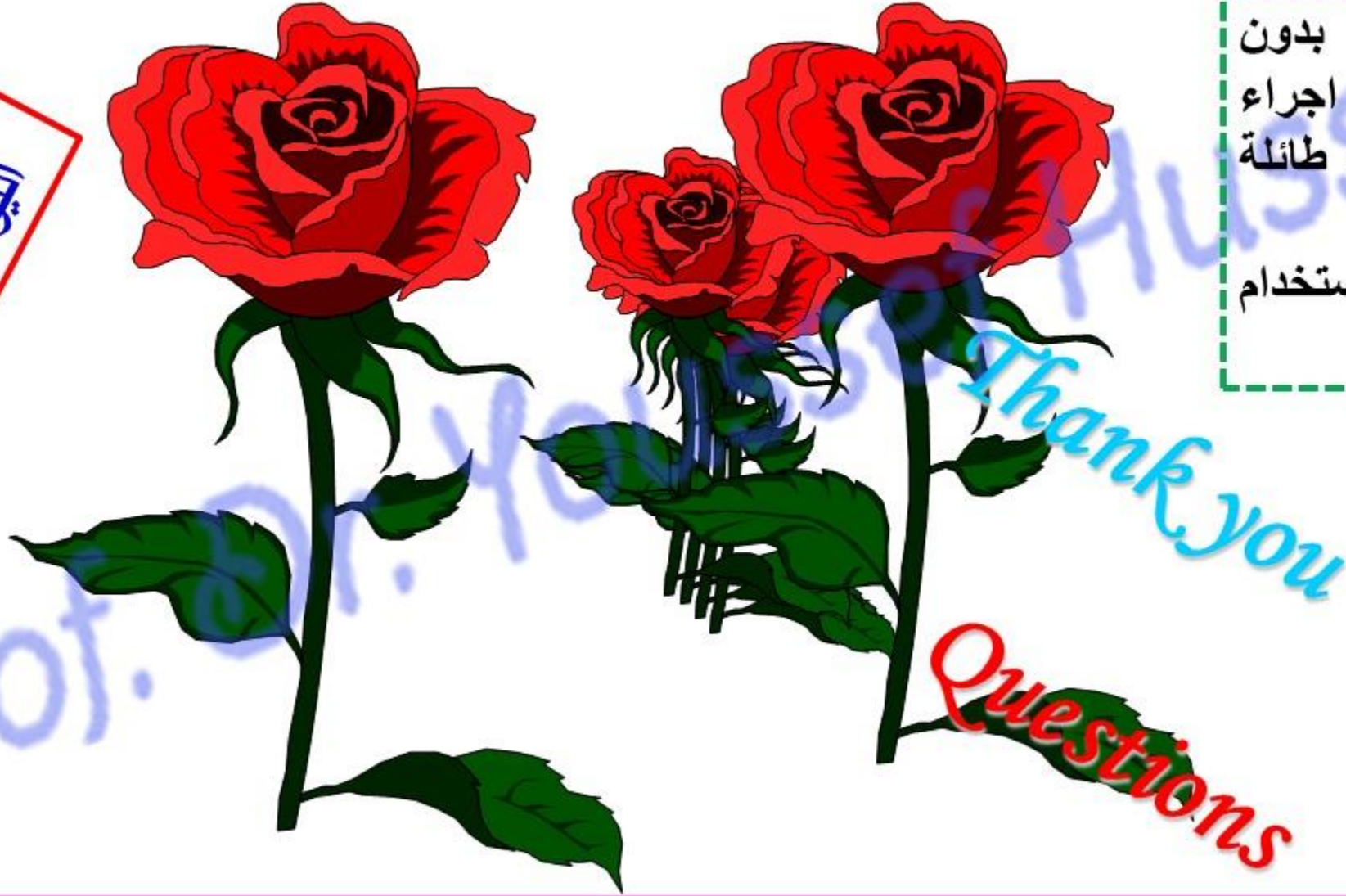


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اليوتيوب د. يوسف حسين



Thank You
Questions

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