

وسهلا



أهلا

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

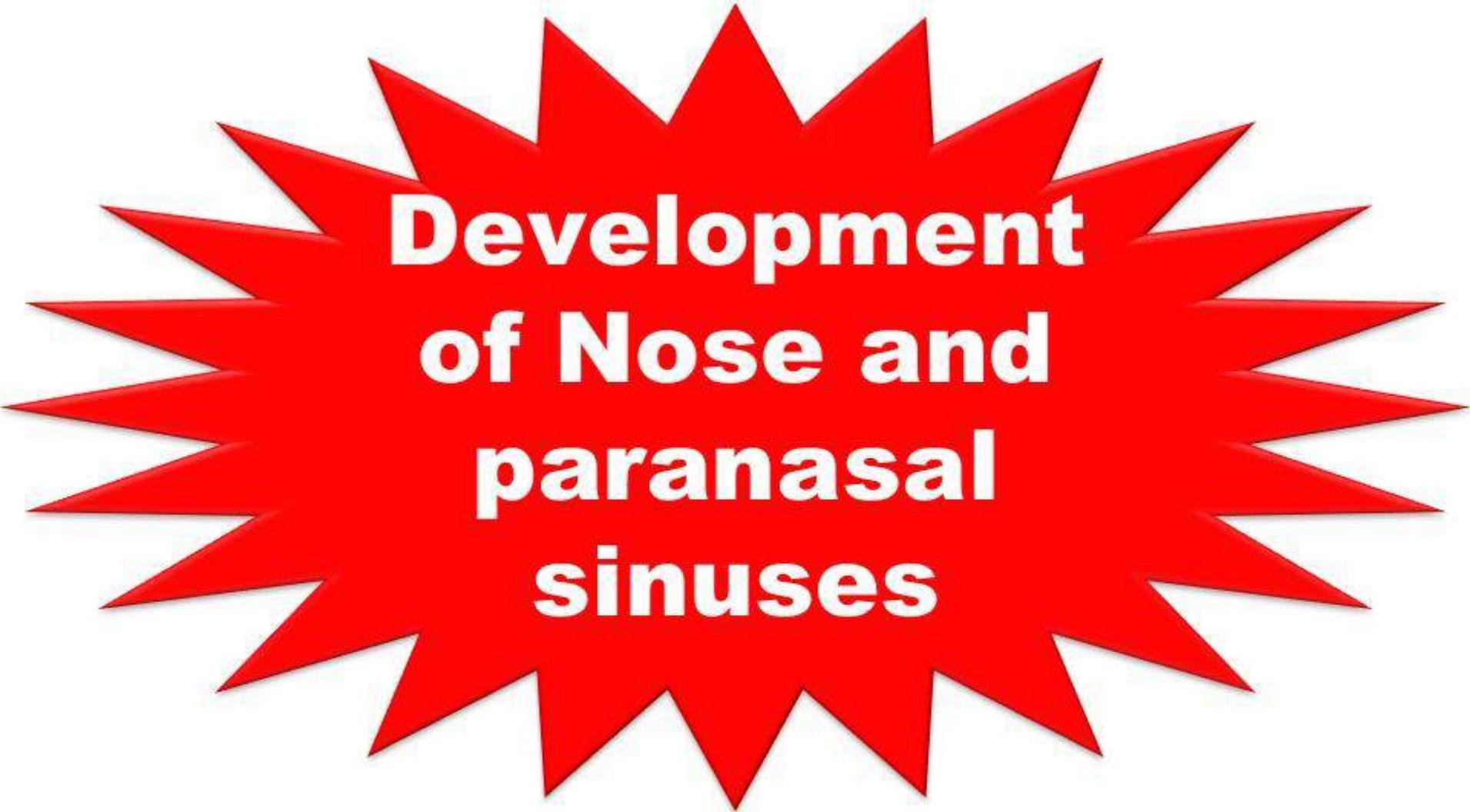
الأستاذ الدكتور يوسف حسين

كلية الطب - جامعة مؤتة - الأردن

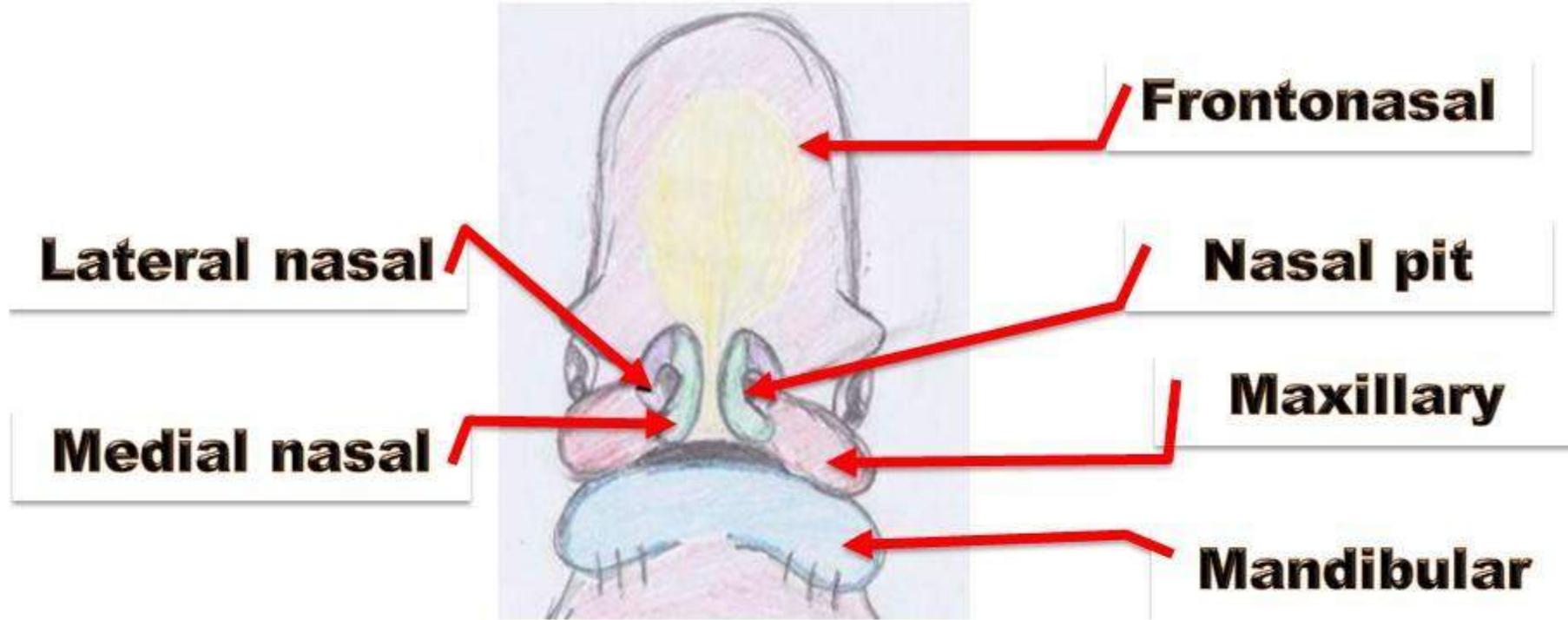
دكتورة من جامعة كولونيا المانيا

Prof. Dr. Youssef Hussein Anatomy - YouTube

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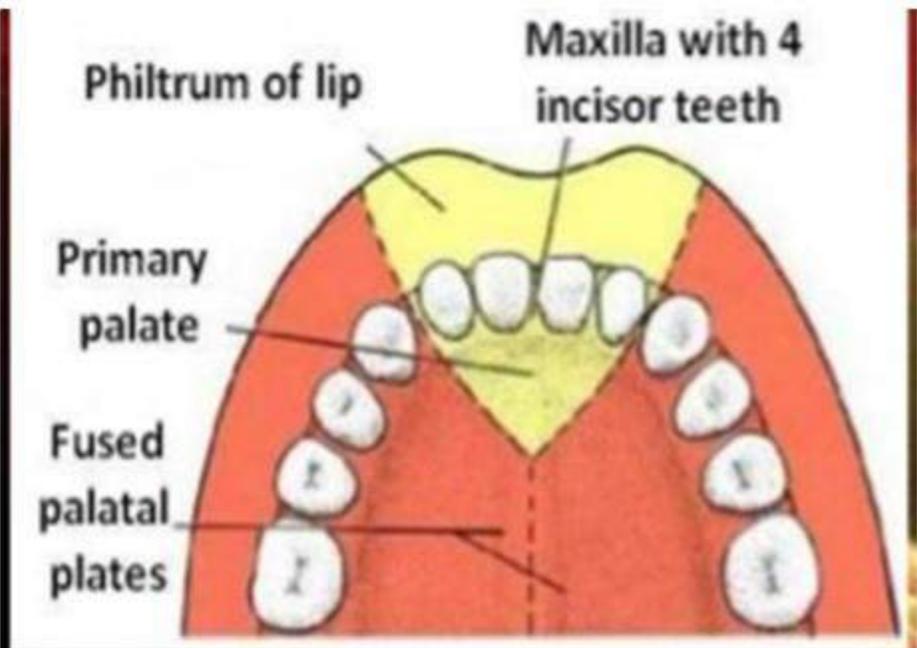
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**Development
of Nose and
paranasal
sinuses**



**** Frontonasal process:**

- a- The upper part forms the frontal bone.
- b- The lower part forms the nasal process.
- At the 4th week **2 Nasal placodes** (**2 ectodermal swellings**) develop in the lower border of the nasal process.
- - **Two nasal pits** (nostril) appear in the nasal placode divide the nasal process:
 - a- Two lateral nasal processes form the ala of the nose.
 - b- Two medial nasal processes unit with each other in the midline forming **median nasal process**



- **Median nasal process** that gives rise to:

- 1- Part of the nasal septum.
- 2- Philtrum (middle) of the upper lip.
- 3- Premaxilla (upper jaw that carries the 4 incisor teeth).
- 4- Primary palate.

- At first the primitive nasal cavity is continuous with the mouth cavity.
- Later; the nasal cavity is separated from mouth cavity by **secondary palate** to form the definitive nasal cavity.
- The definitive nasal cavity is divided into 2 cavities by a **nasal septum**.
- **Nasal conchae (turbinate's)** developed as bony projections from lateral wall of the nose.
 - **Development of Paranasal sinuses**
 - They develop as outpouching from mucus membrane of the lateral wall of the nose.
 - They extend into the maxilla, ethmoid, frontal and sphenoid bones during childhood and early adult life.



Arhinia (nasal aplasia)
due to bilateral absent
of nasal placodes



Half nose due to
unilateral absent of
nasal placodes



Polyrhinia due to duplication of the medial nasal process

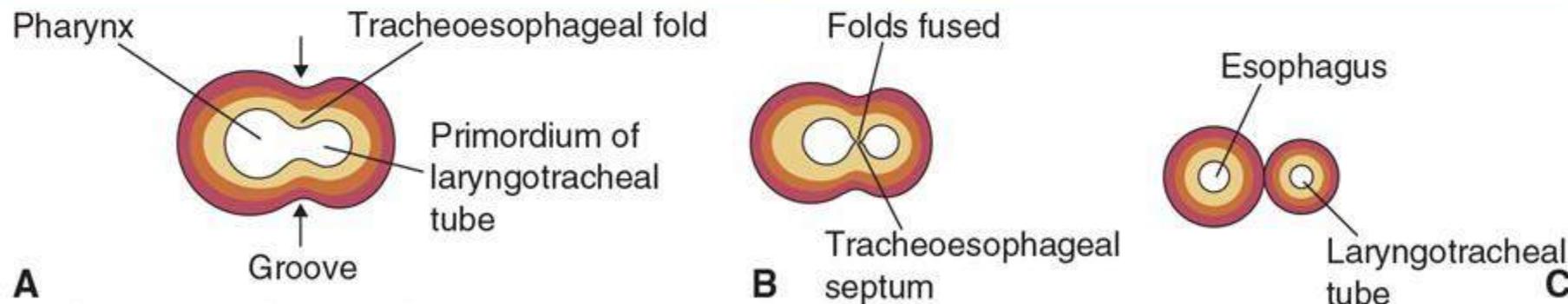
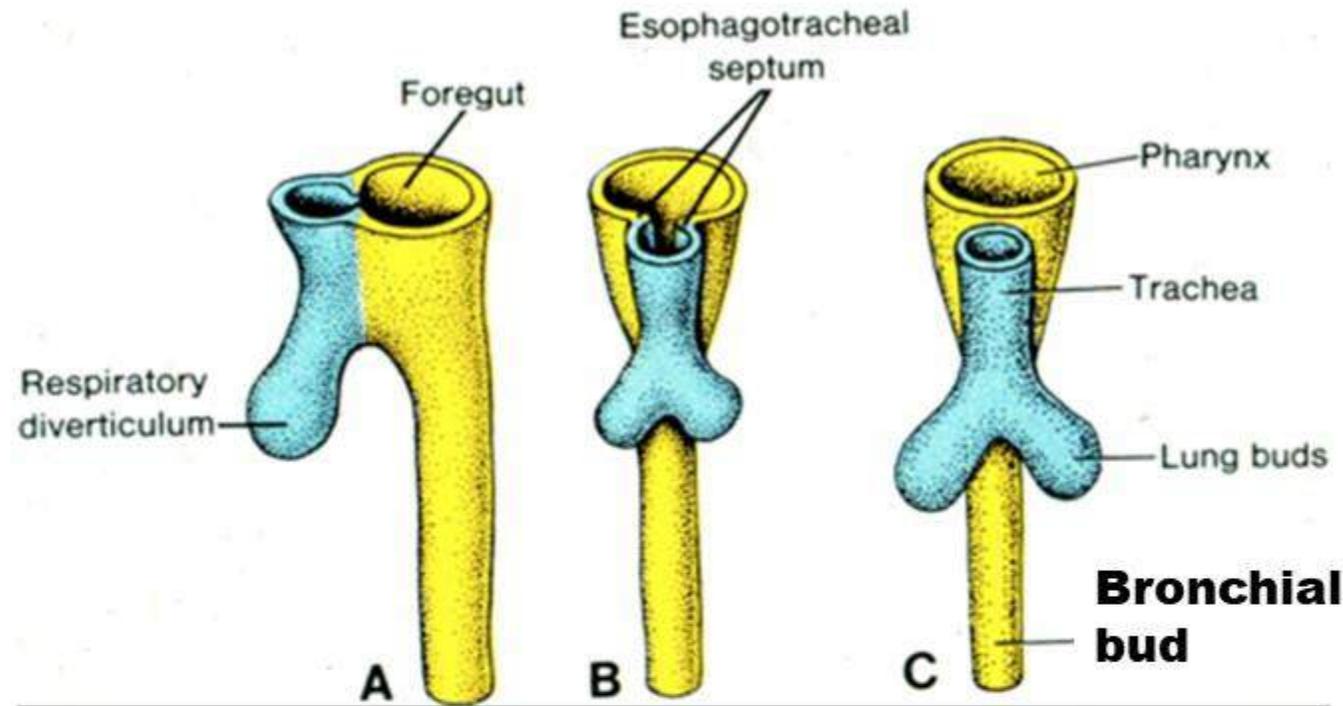


Oblique facial cleft due to failure of fusion of the maxillary process with the lateral nasal process

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**Development of
Larynx, Trachea,
Bronchi and
Lungs**

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



- **Two tracheoesophageal folds approximate and fuse with each other forming tracheoesophageal septum.**
- **The septum divides the tube into ventral part (Respiratory diverticulum, laryngotracheal tube) and dorsal part (foregut, pharynx and esophagus).**

- **Development of the larynx**

- The **mucosa** is developed from **cranial part** of the laryngotracheal tube.
- The **cartilage and muscles**: from the mesoderm of the 4th and 6th pharyngeal arches.

- **Development of the Trachea**

- The **mucosa** is developed from **caudal part** of the laryngotracheal tube.
- The **cartilages**: from the mesoderm around the laryngotracheal tube.

- **Development of the bronchi**

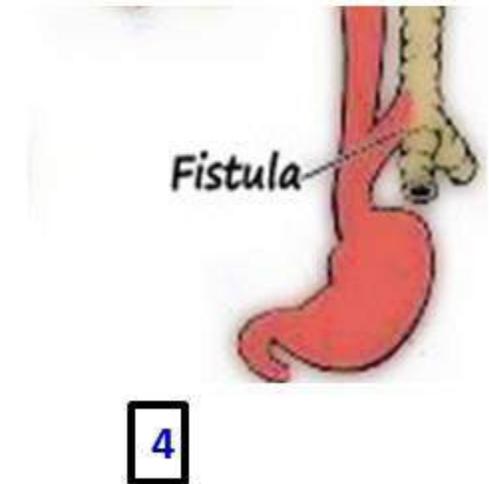
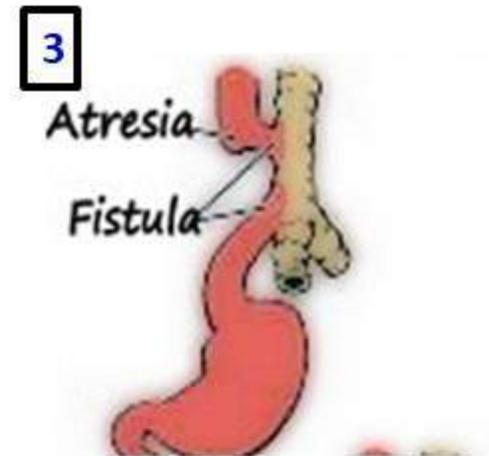
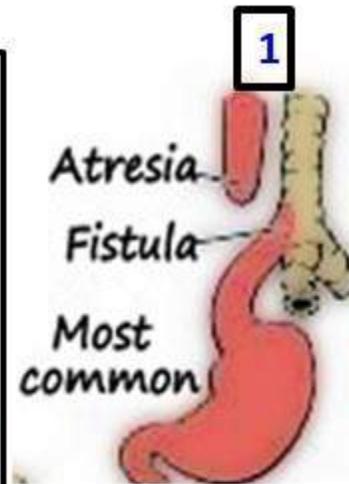
- The **lower end of the tube derived into two bronchial buds** forming right and left bronchus.
- The **cartilages**: from the mesoderm around the buds.

Congenital anomalies of the Tracheoesophageal septum

- An abnormal opening between esophagus and trachea caused by failure of complete closure of the tracheoesophageal septum.

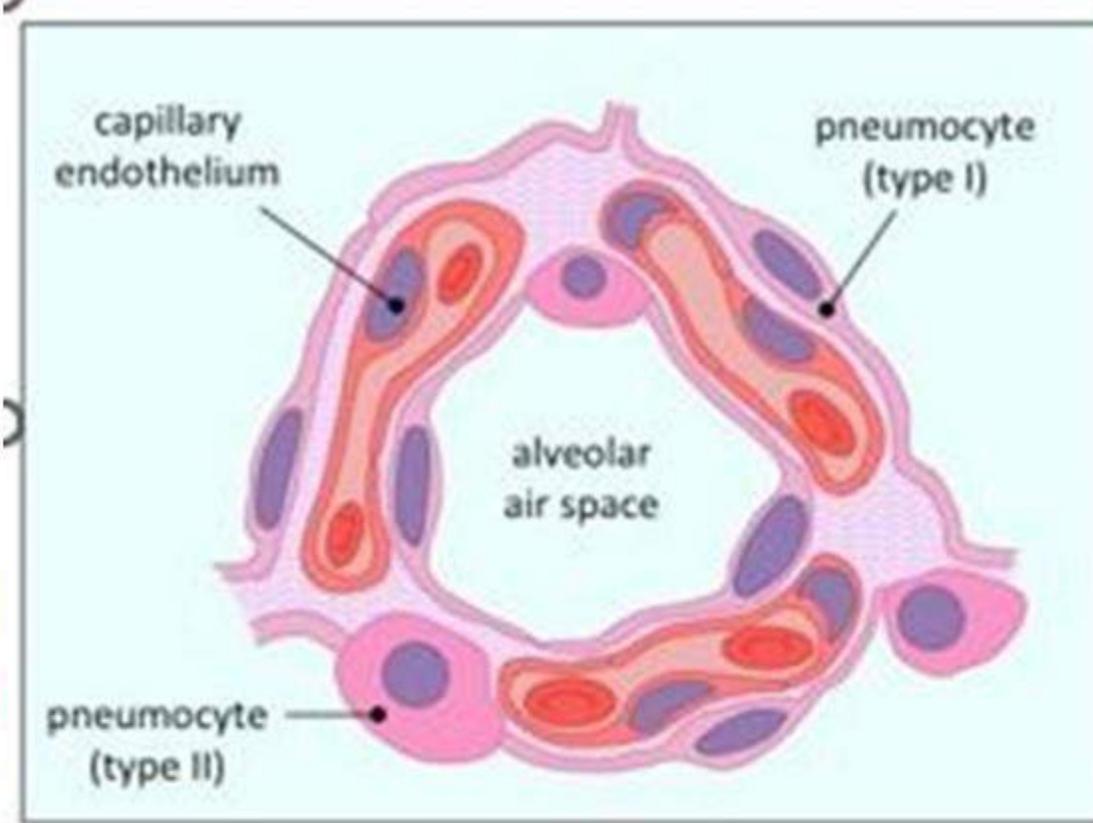
• Types of the fistula:

1. **Proximal part** of esophagus ends as a **blind sac** and distal part continues with the trachea.
2. **Proximal part** of esophagus **continues** with trachea and distal part ends as blind sac.
3. Proximal and distal parts of esophagus **continue** with trachea separately.
4. Proximal and distal parts of **continue** with trachea by **single tube (fistula)** .



- **Development of the lungs**

- **Each bronchus divides repeatedly forming bronchioles and alveoli**
- **The blood capillaries and connective tissue developed from the mesoderm**
- **No mature alveoli before birth**
- **The alveoli are lined by two types of cells: Type I pneumocytes, for gas exchange, and Type II pneumocytes, secrete surfactant to low the surface tension of the barrier.**
- **Other cells** (Macrophages responsible for the immune system) and (Epithelial barrier)
- **The amount of the surfactant increases especially during the first two weeks after birth**
- **The fluid in the alveoli is absorbed and alveoli expanded with air after birth**



- **** Congenital anomalies of the lungs:**

- **Agenesis of one or both lungs:** is rare and caused by failure of the **bronchial buds** to develop.
- **Abnormal number of lung lobes:** due to abnormal division of the **bronchial buds**.
- **Congenital cysts of the lung:** either single or multiple. This give rises to **honeycomb appearance** in the X-ray.
- **Congenital collapse of the lung** (respiratory distress syndrome of neonate): due to congenital absence of the **surfactant**. It is one of the common causes of death in the premature infants.

- **Two processes grow laterally from each vertebrae,**

1. **Transverse (posterior) process.**

2. **Costal (anterior) process;**

**** Fate of the costal process;**

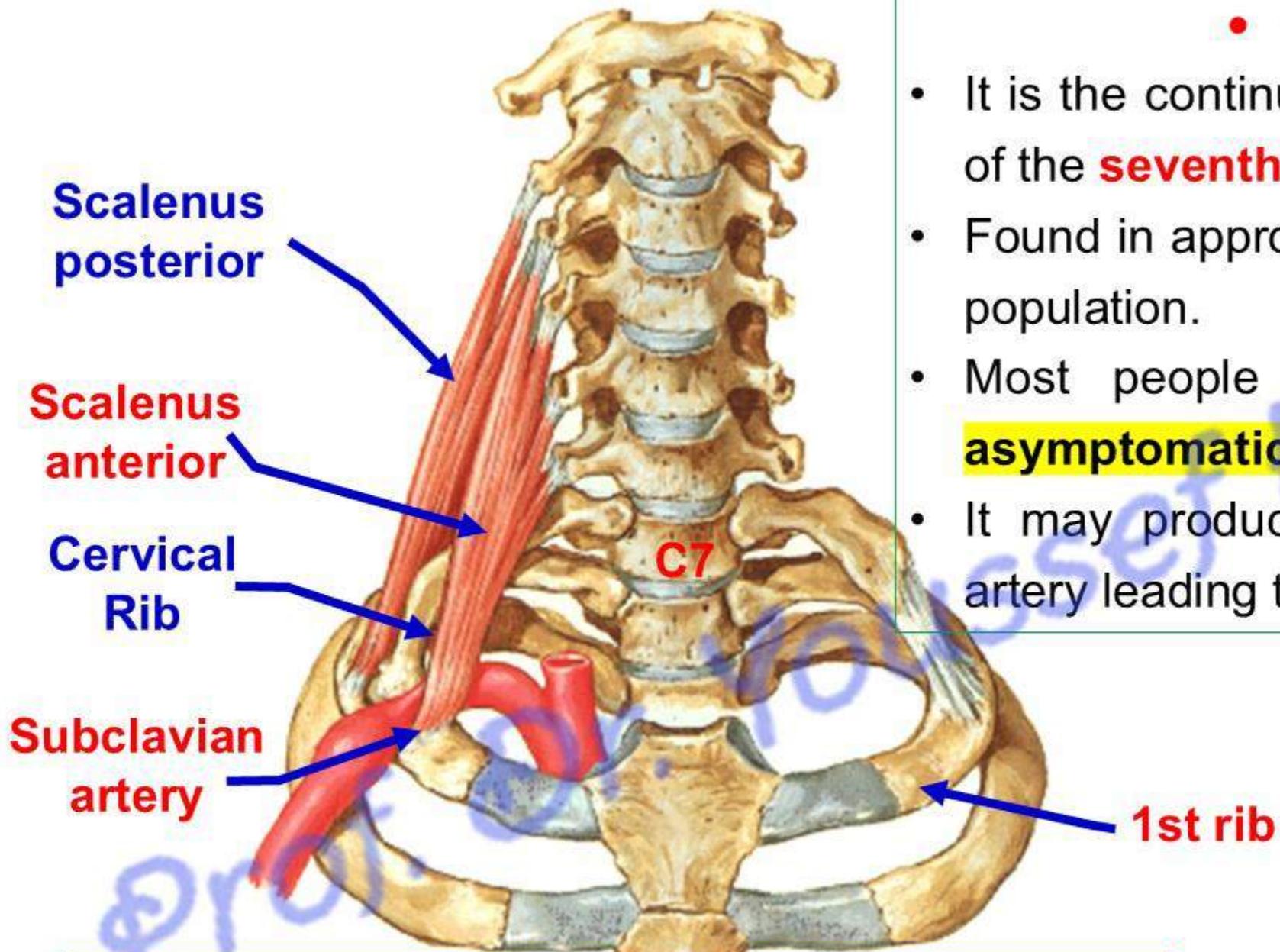
a- In the cervical region: the costal process fuses with the transverse process around the vertebral vessel to form foramen transversarium in each cervical vertebrae.

b- In the thoracic region: they elongate to form the ribs and their cartilages.

b- In the lumbar and sacral vertebrae: it fuses with the transverse process.

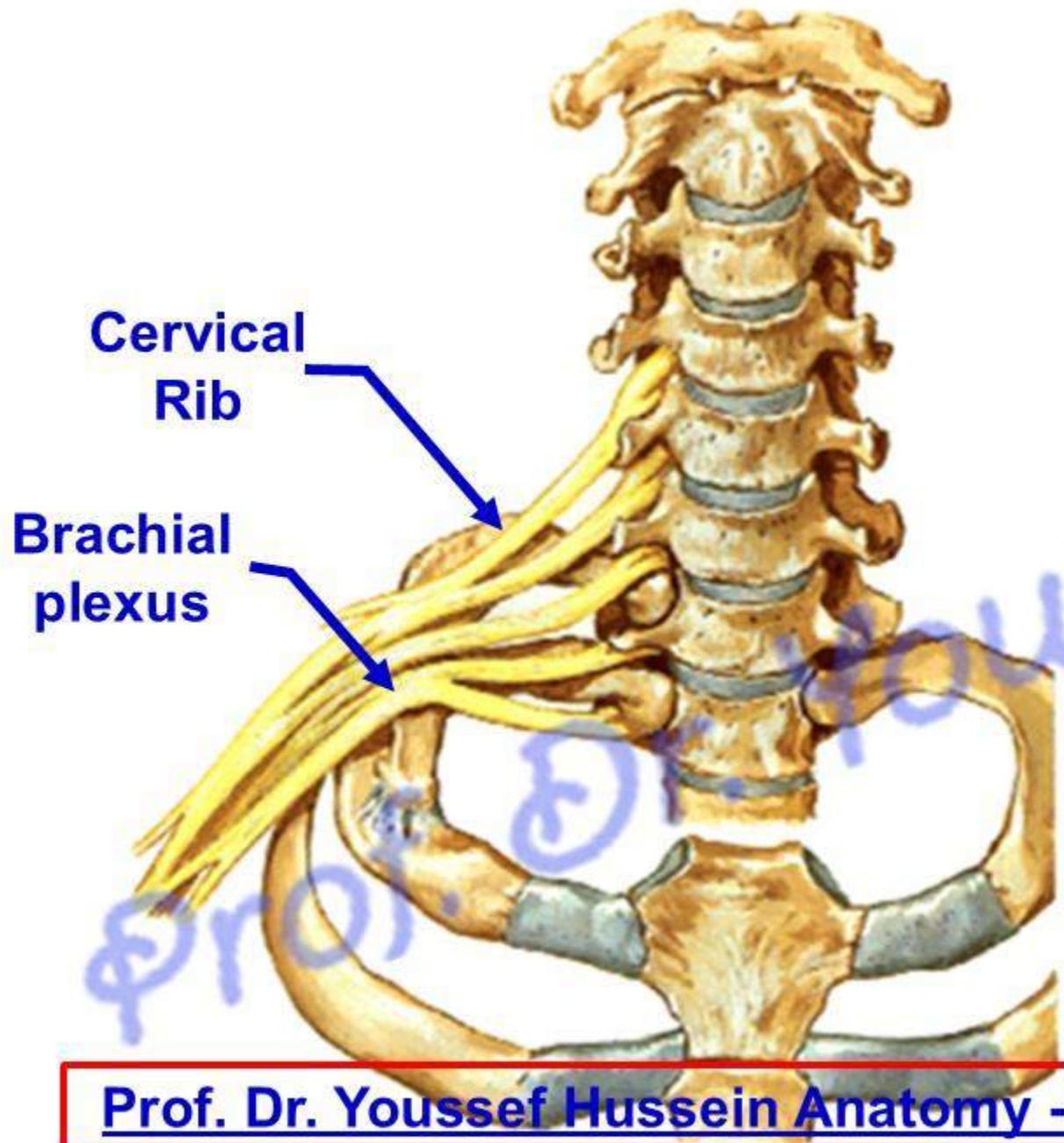


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• Cervical Rib

- It is the continuation of the costal process of the **seventh cervical vertebra** (C7).
- Found in approximately 0.5% to 1% of the population.
- Most people with a cervical rib are **asymptomatic**
- It may produce pressure on subclavian artery leading to **ischemia of upper limb**



- **Cervical Rib**

* It may produce stretch on the **lower trunk of brachial plexus** leading to **Klumpke's paralysis** :

- 1- Tingling and numbness along the ulnar border of the forearm and hand.
- 2- Wasting of the small muscles of the hand, inability to carry out fine movement.

https://www.youtube.com/channel/UCVSNqbibj9UWYaJdd_cn0PQ

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Thank You
Questions

<https://www.youtube.com/@ProfDrYoussefHusseinAnatomy/playlists>