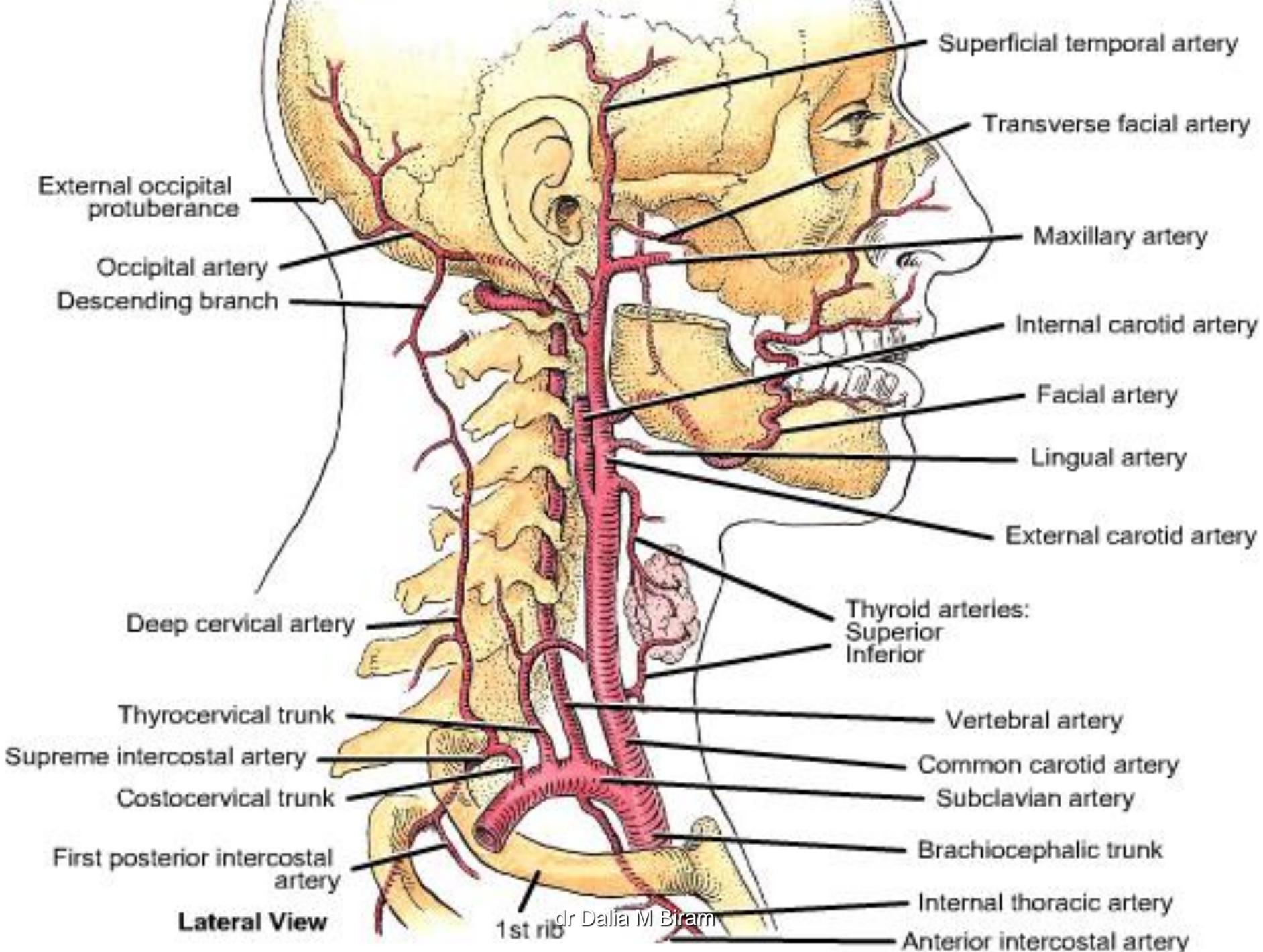


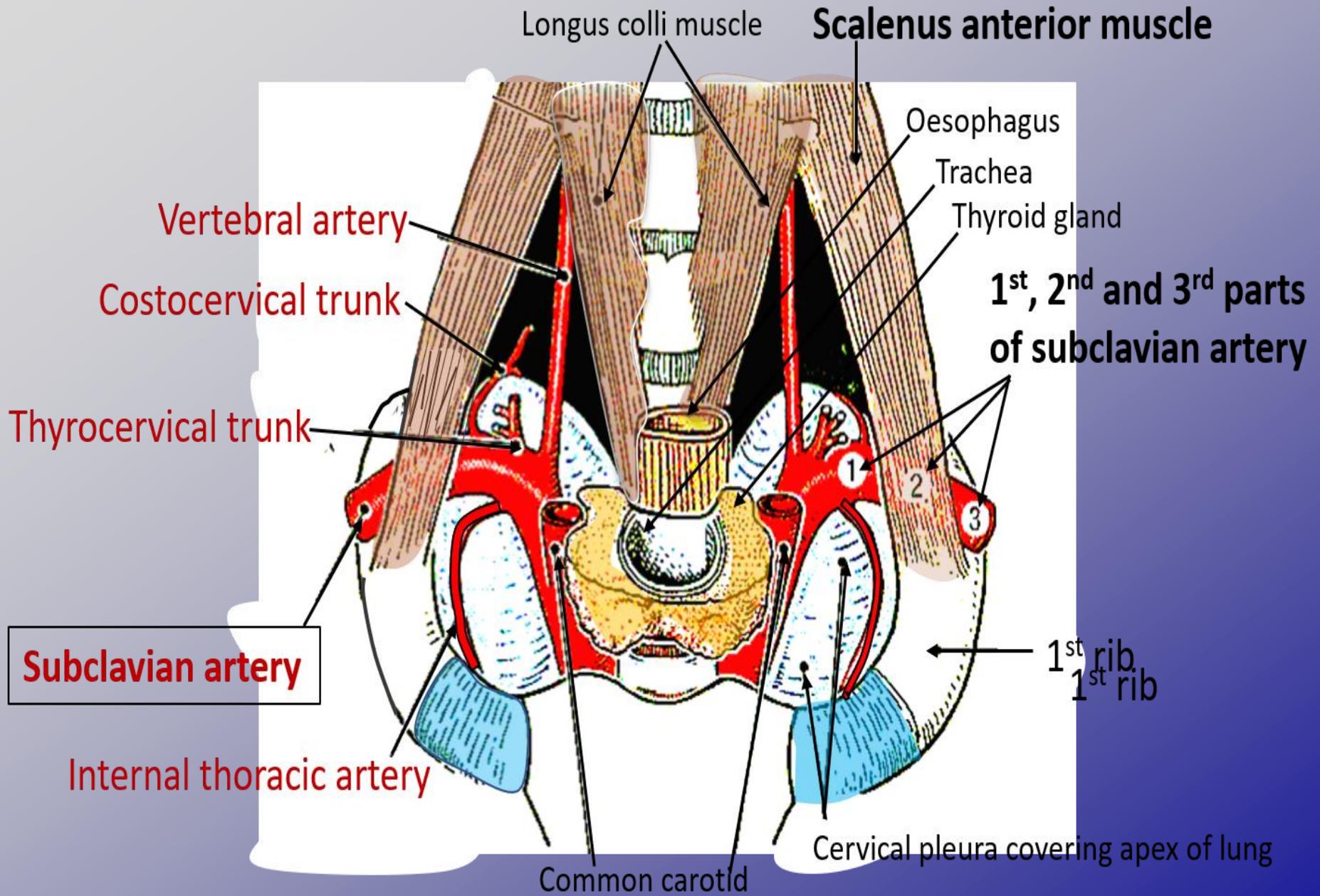
Blood vessels of the head& neck II

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SUBCLAVIAN ARTERY

- **Origin:**
- **The right artery** arises from the brachiocephalic trunk.
- **The left artery** arises from the aortic arch.
- The subclavian artery arches upward and laterally over the pleura and between the scalenus anterior and medius muscles
- **Termination:** at the outer border of the first rib, where the artery becomes the axillary artery.
- **Course:** the course of the artery is divided into;
- **First part** from its origin to the medial border of scalenus anterior
- **Second part** behind this muscle
- **Third part** from the lateral margin of scalenus anterior to the outer border of the first rib, where the artery becomes the axillary artery.



Relations:

First part of Subclavian artery

- **Anterior:** common carotid artery, vagus nerve and internal jugular vein.
- **Posterior:** Dome of pleura, apex of the lung and on right the right recurrent laryngeal n.

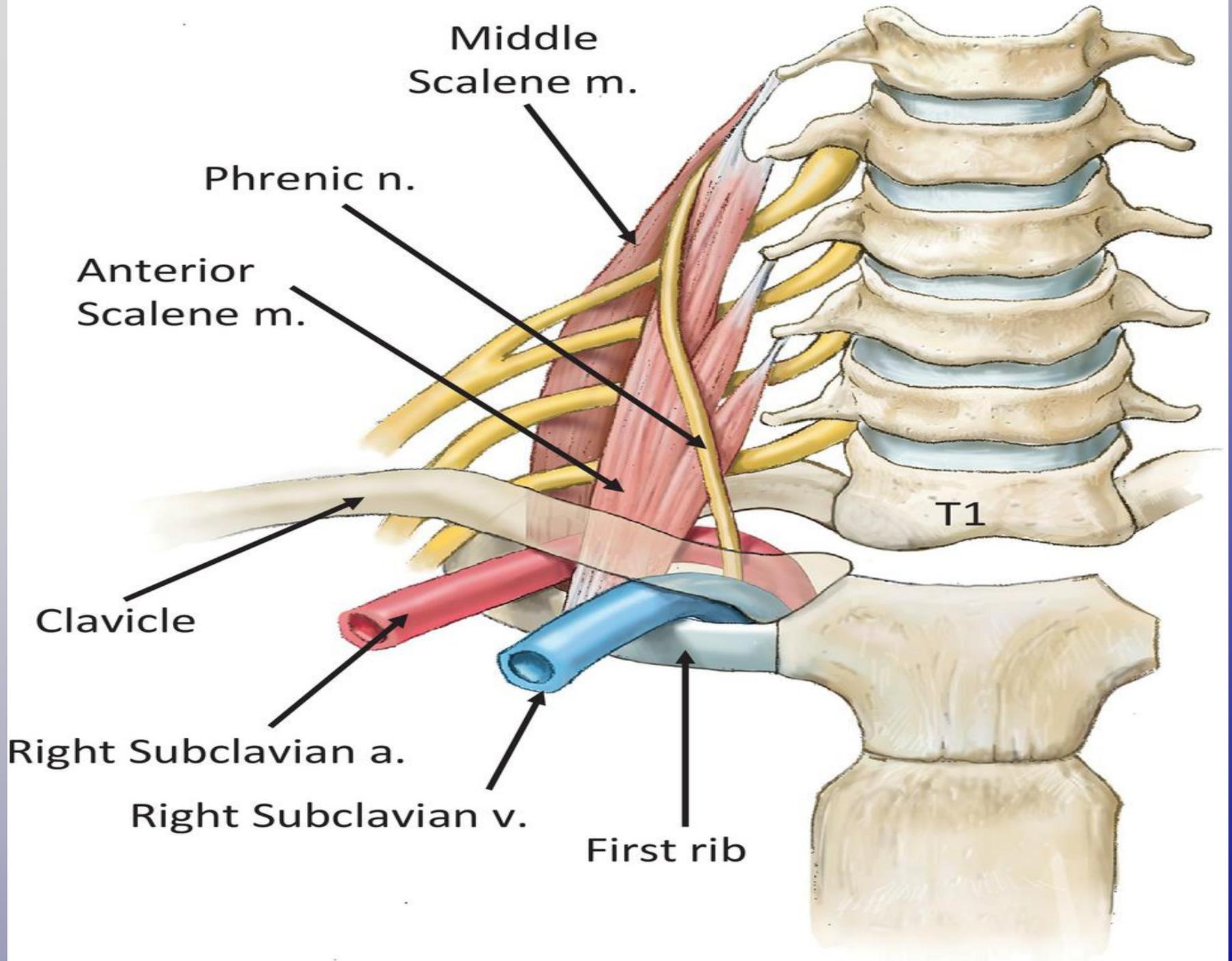
Second part of Subclavian artery

- **Anterior:** scalenus anterior muscle.
- **Posterior:** Dome of pleura, apex of the lung.

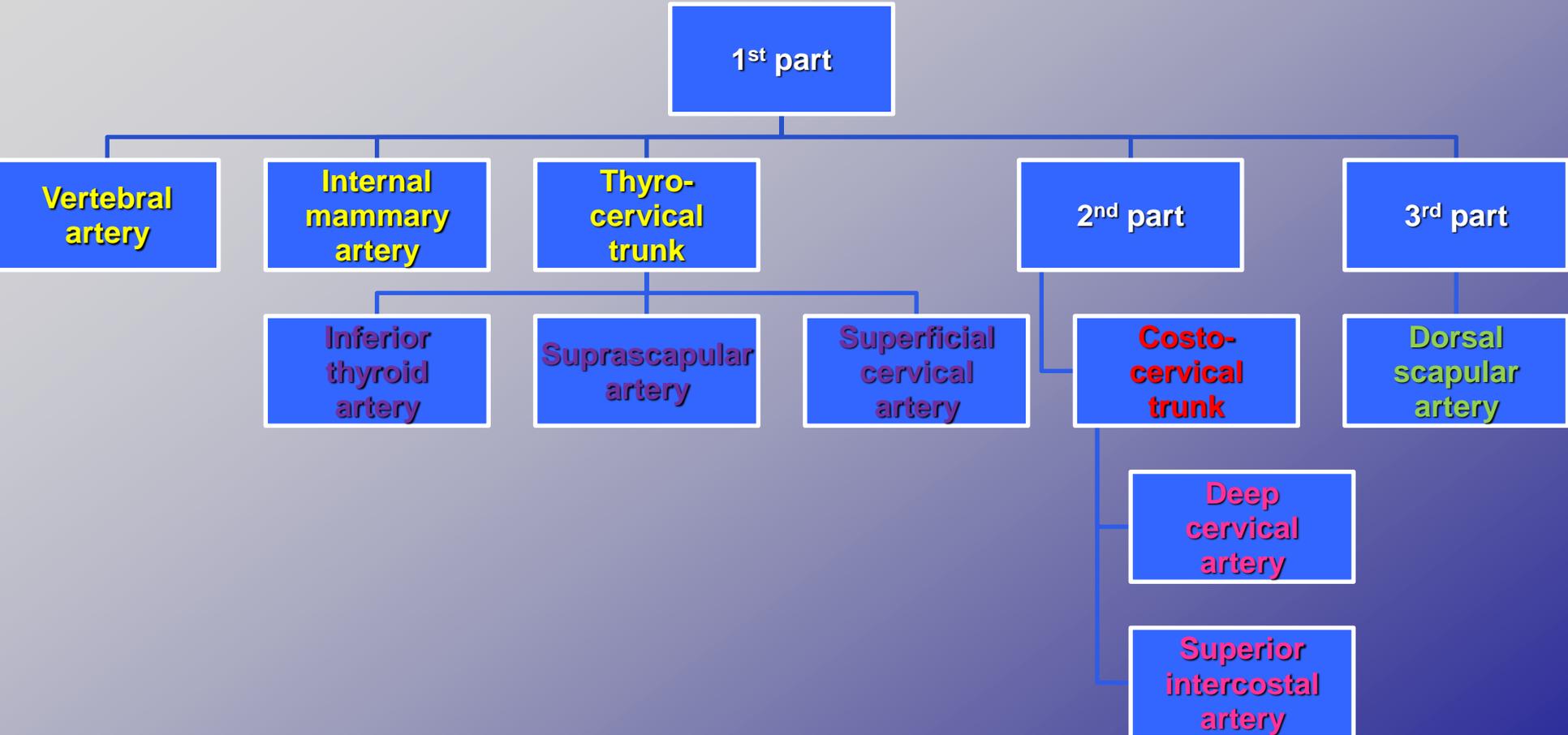
Relations:

Third Part of Subclavian Artery

- Anteriorly: Skin, superficial fascia, and investing deep cervical fascia, subclavian vein
- Posteriorly: Lower trunk of brachial plexus and scalenus medius.
- Superiorly: Upper and middle trunks of brachial plexus.
- Inferiorly: Upper surface of the first rib.



Branches of subclavian artery VIT C and D'



- **Branches of subclavian artery**

1- 1st part: gives 3 branches

- (1) Vertebral artery.
- (2) Internal thoracic (mammary) artery.
- (3) Thyrocervical trunk that give

A-Inferior thyroid artery

B-Suprascapular artery

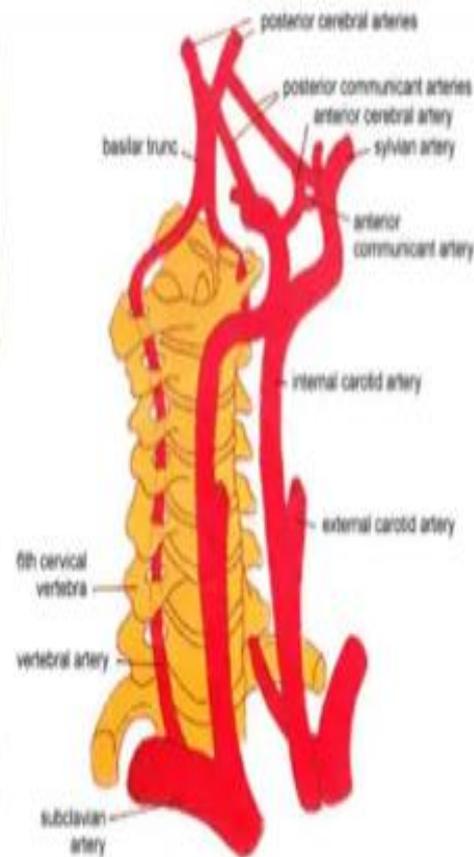
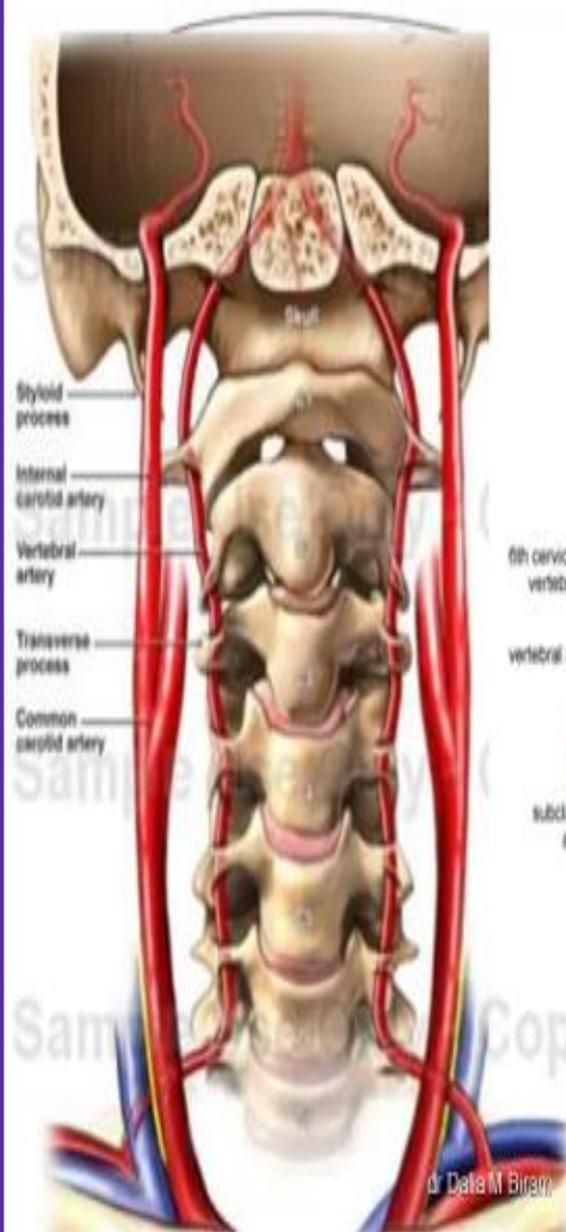
C-Superficial cervical artery

2-2nd part: costocervical trunk divided into

a) **Superior intercostal artery**; to the 1st and 2nd posterior Intercostal arteries.

b) **Deep cervical artery** ascends to back of neck to anastomose with the descending cervical Branch of **occipital artery (site of anastomosis between carotid and subclavian system)**.

3- 3rd part: no branches, but occasionally gives **dorsal scapular artery** if deep branch of transverse cervical artery absent



VERTEBRAL ARTERY

- It ascends in the neck through the foramina in the transverse processes of the upper six cervical vertebrae. It passes medially above the posterior arch of the atlas and then ascends through the foramen magnum into the skull, at the level of the lower border of the pons. It joins the vessel of the opposite side to form the basilar artery.

right subclavian artery

Vertebral artery

- **Course and relations:** divided into 4 parts:
- **1st part** ascends along the **medial border of scalenus anterior** to the foramen transversarium of **C6**.
- **2nd part** ascends in the foramina transversaria of the upper 6 cervical vertebrae.
- **3rd part:** in the **suboccipital triangle**.
- **4th part:** enter the cranial cavity through foramen magnum then united to form basilar artery in the basilar sulcus on the anterior surface of the pons.
- **Branches**
 - The **2nd part:** radicular branches to supply the spinal cord.
 - The **4th part:**
 - (1) Anterior **spinal** artery.
 - (2) Posterior **spinal** artery.
 - (3) **Posterior inferior cerebellar** artery.
 - (4) **Medullary** branches to the medulla oblongata.

- **Maxillary artery**

- **Origin:** the larger of the 2 terminal branches of ECA inside the parotid gland.
- **End,** it ends in the pterygopalatine fossa.

- **Course and relations :** it is divided by lateral pterygoid muscle into **3 parts:**

(1) First part: It leaves the parotid gland through its anterior surface.

(2) 2nd part: runs either deep or superficial to the lateral pterygoid muscle.

(3) 3rd part: passes through pterygomaxillary fissure to reach **pterygopalatine fossa.**

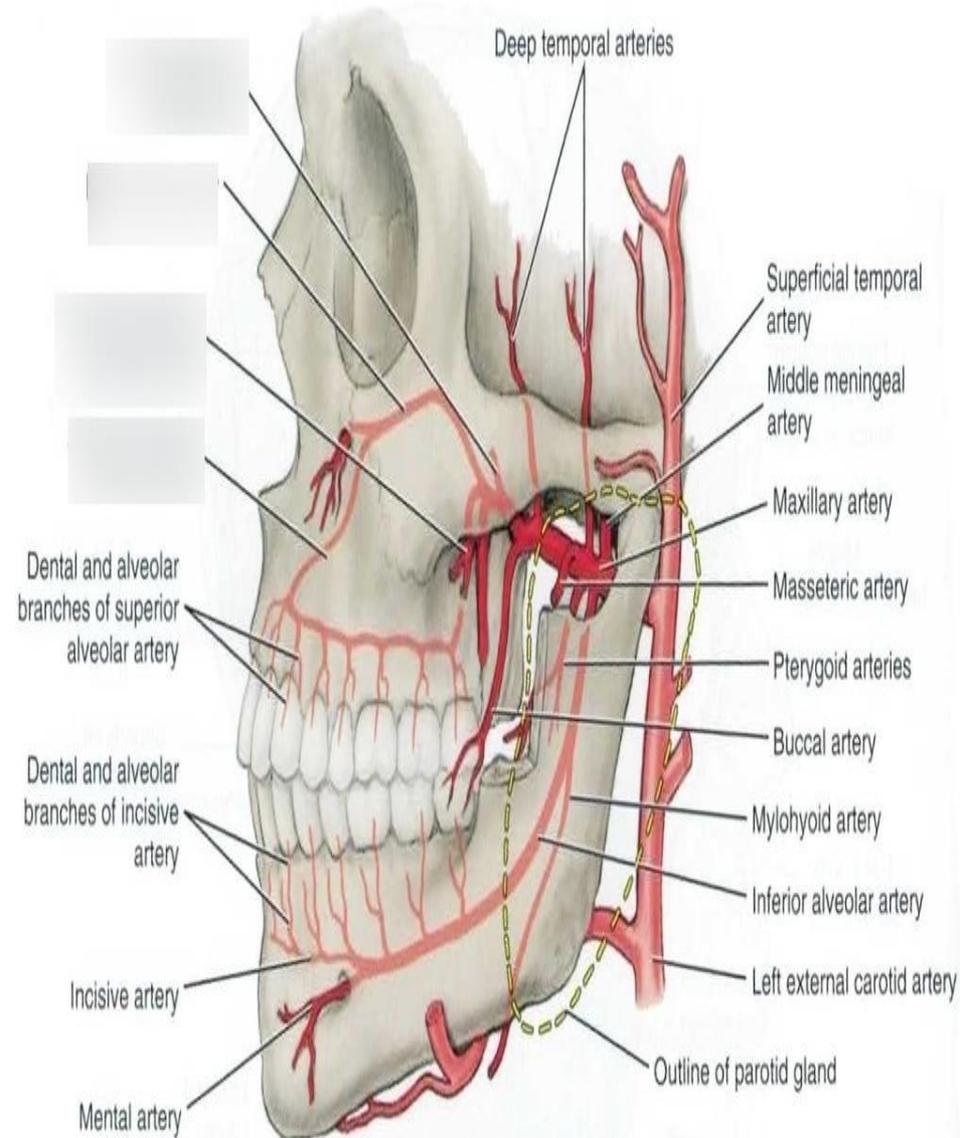
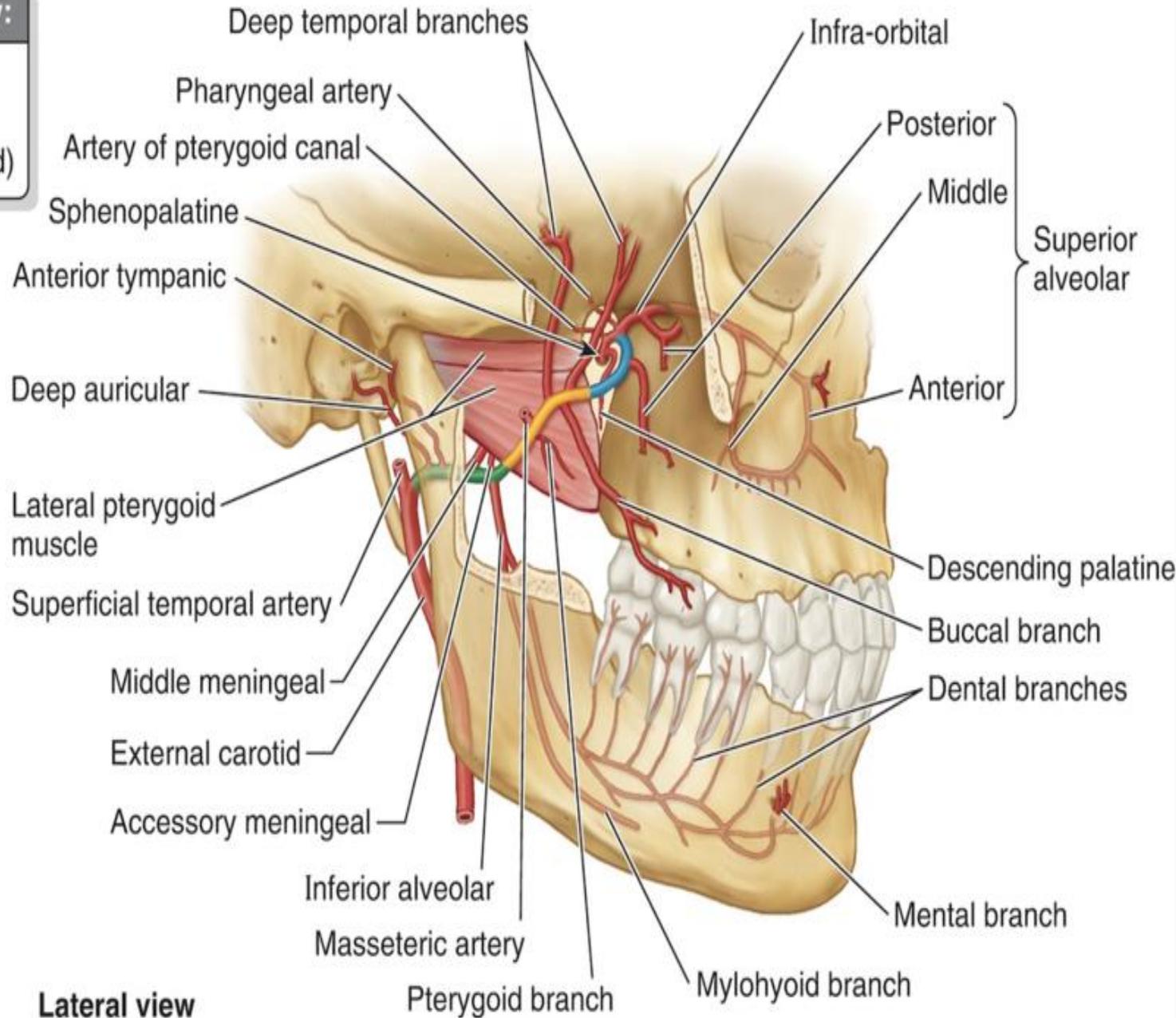


FIGURE 6-9 Pathway of the maxillary artery (except those branches to nasal cavity and palate).

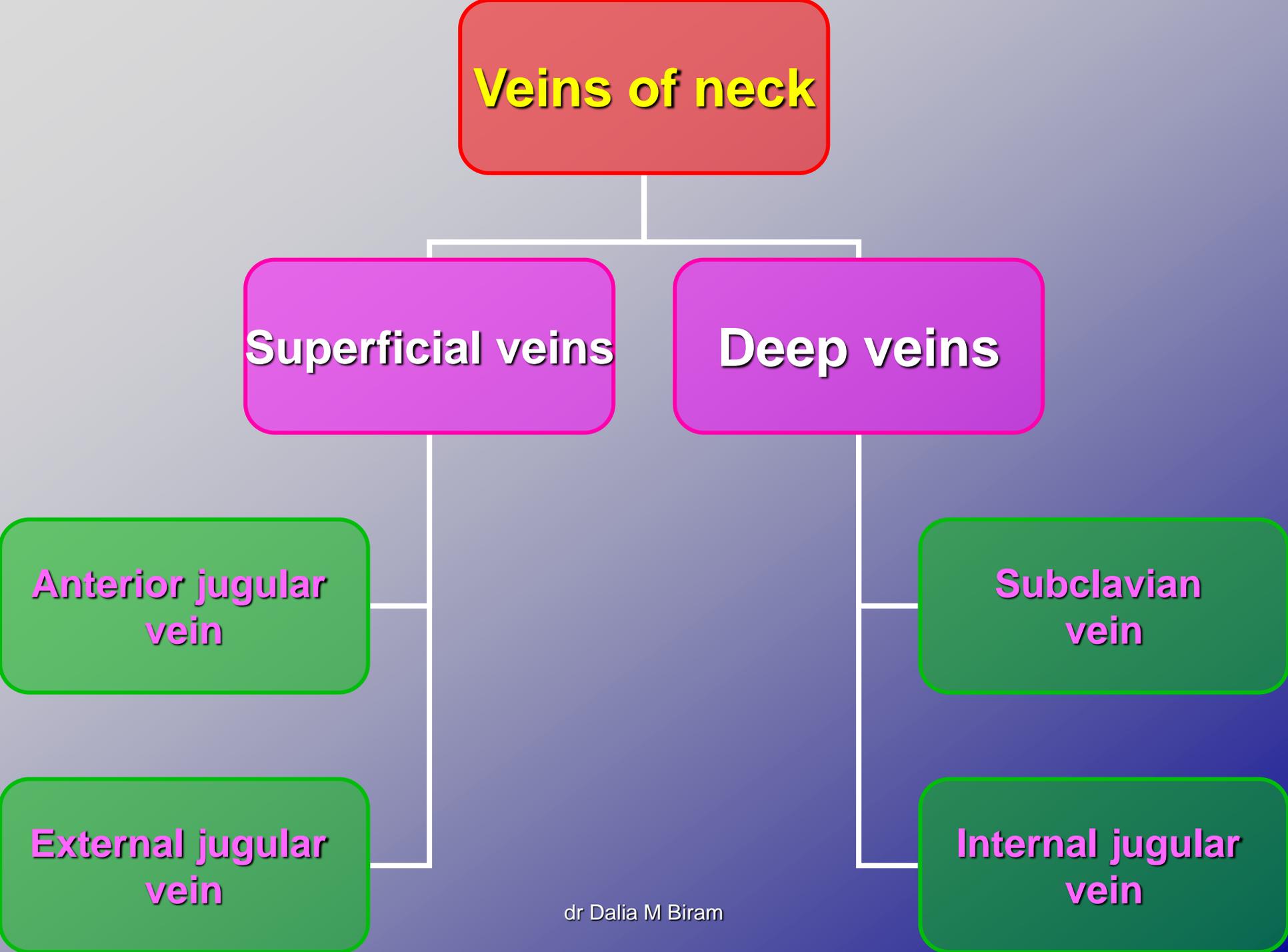
Parts of maxillary artery:

- █ Mandibular (1st)
- █ Pterygoid (2nd)
- █ Pterygopalatine (3rd)



Lateral view

Veins of neck



```
graph TD; A[Veins of neck] --> B[Superficial veins]; A --> C[Deep veins]; B --> D[Anterior jugular vein]; B --> E[External jugular vein]; C --> F[Subclavian vein]; C --> G[Internal jugular vein];
```

The diagram is a hierarchical flowchart. At the top is a red rounded rectangle labeled 'Veins of neck'. A white line descends from this box and splits into two horizontal branches. The left branch leads to a pink rounded rectangle labeled 'Superficial veins', and the right branch leads to a pink rounded rectangle labeled 'Deep veins'. From the 'Superficial veins' box, a white line descends and splits into two horizontal branches leading to two green rounded rectangles: 'Anterior jugular vein' (top) and 'External jugular vein' (bottom). From the 'Deep veins' box, a white line descends and splits into two horizontal branches leading to two green rounded rectangles: 'Subclavian vein' (top) and 'Internal jugular vein' (bottom). All text is in a bold, sans-serif font.

Superficial veins

Deep veins

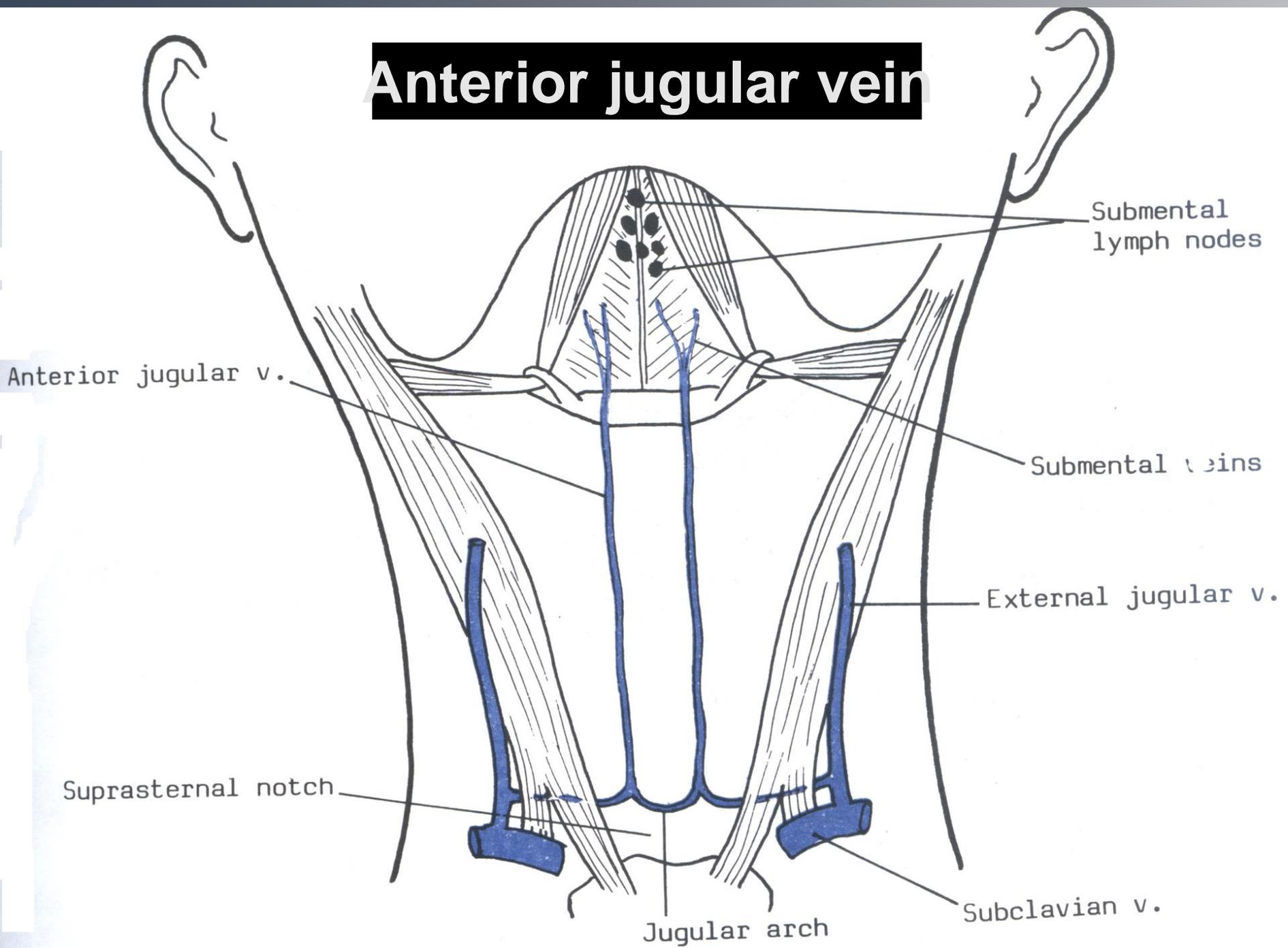
Anterior jugular vein

External jugular vein

Subclavian vein

Internal jugular vein

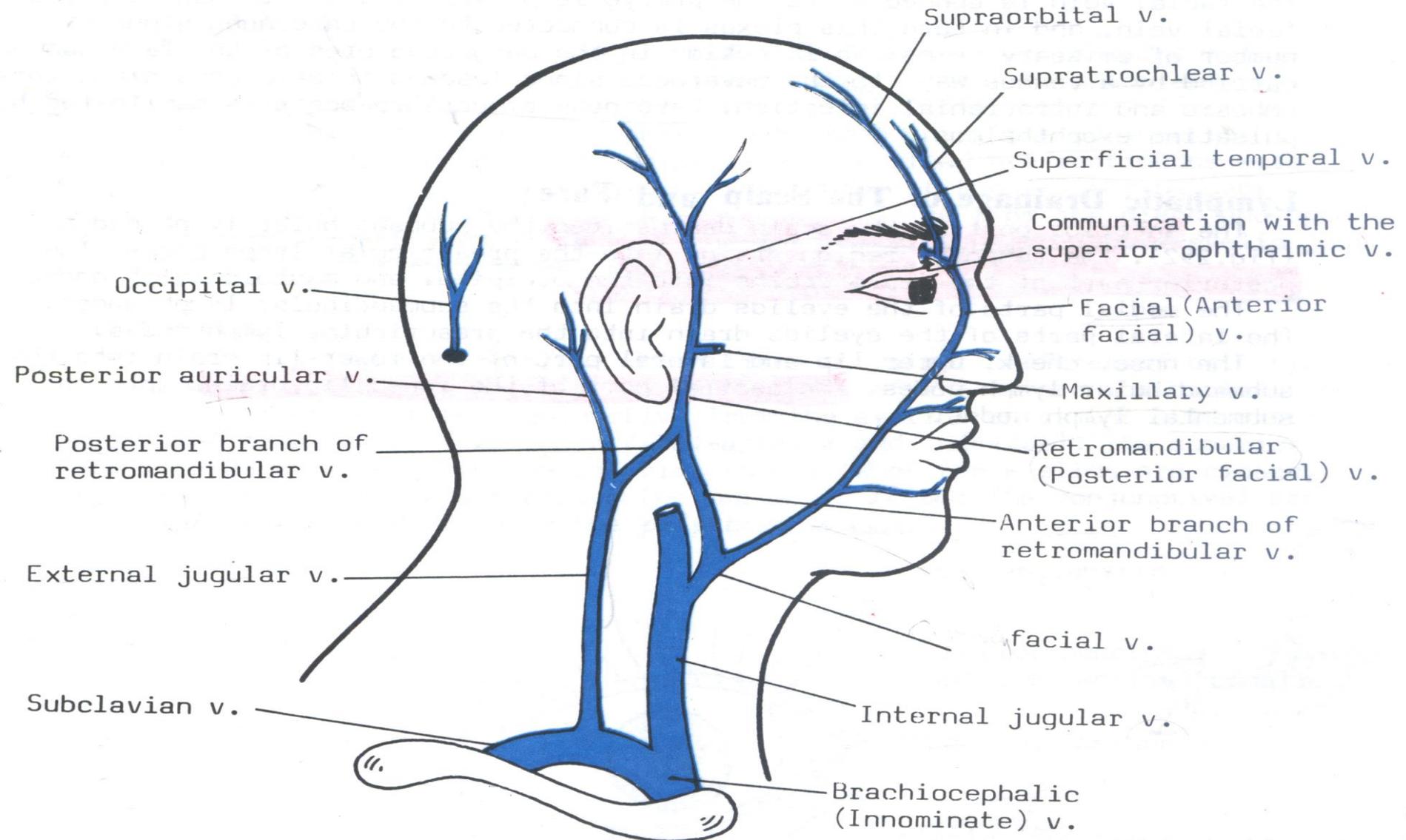
Anterior jugular vein



Anterior jugular vein

- It is formed by union of small submental veins.
- It descends in the superficial fascia close to the midline of neck.
- It pierces the deep fascia just above sternum and turns laterally deep to sternocleidomastoid muscle to reach the posterior triangle of neck where it opens into the external jugular vein.
- At the point of turning, the 2 anterior jugular veins are connected by “jugular arch” which is present in the suprasternal fossa.

External jugular vein



External jugular vein

- **Beginning:** It is formed by union of posterior branch of the retromandibular vein and the posterior auricular vein.
- It descends obliquely downwards and backwards lateral to the sternocleidomastoid where it is covered by the skin, superficial fascia and platysma.
- Then, it descends in the roof of the posterior triangle and pierces its deep fascia **to end** in the **subclavian vein**.(dangerous site of EJV)
- It has the following tributaries:
 - Anterior jugular vein
 - Suprascapular vein.
 - Superficial (or transverse) cervical vein.
 - Posterior external jugular vein: drains skin and superficial muscles of upper part of the back of the neck.

Internal jugular vein

■ **Beginning:** It is the continuation of the sigmoid sinus just outside the jugular foramen.

■ **Course & Relations:**

- At its upper end, it forms a dilatation called the superior bulb. At its lower end, it forms a smaller dilatation called the inferior bulb.
- The vein descends vertically in the carotid sheath lateral to ICA & CCA.
- The vagus nerve descends behind and between the V & A.

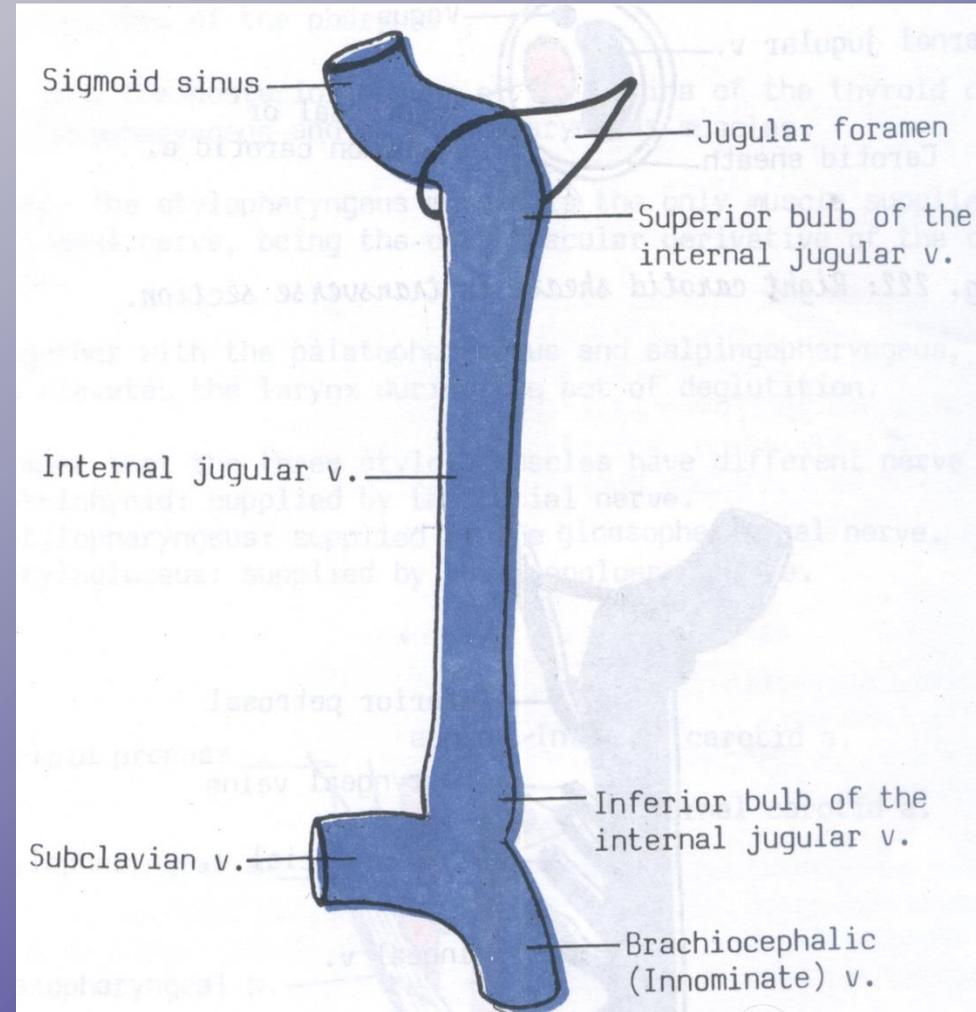
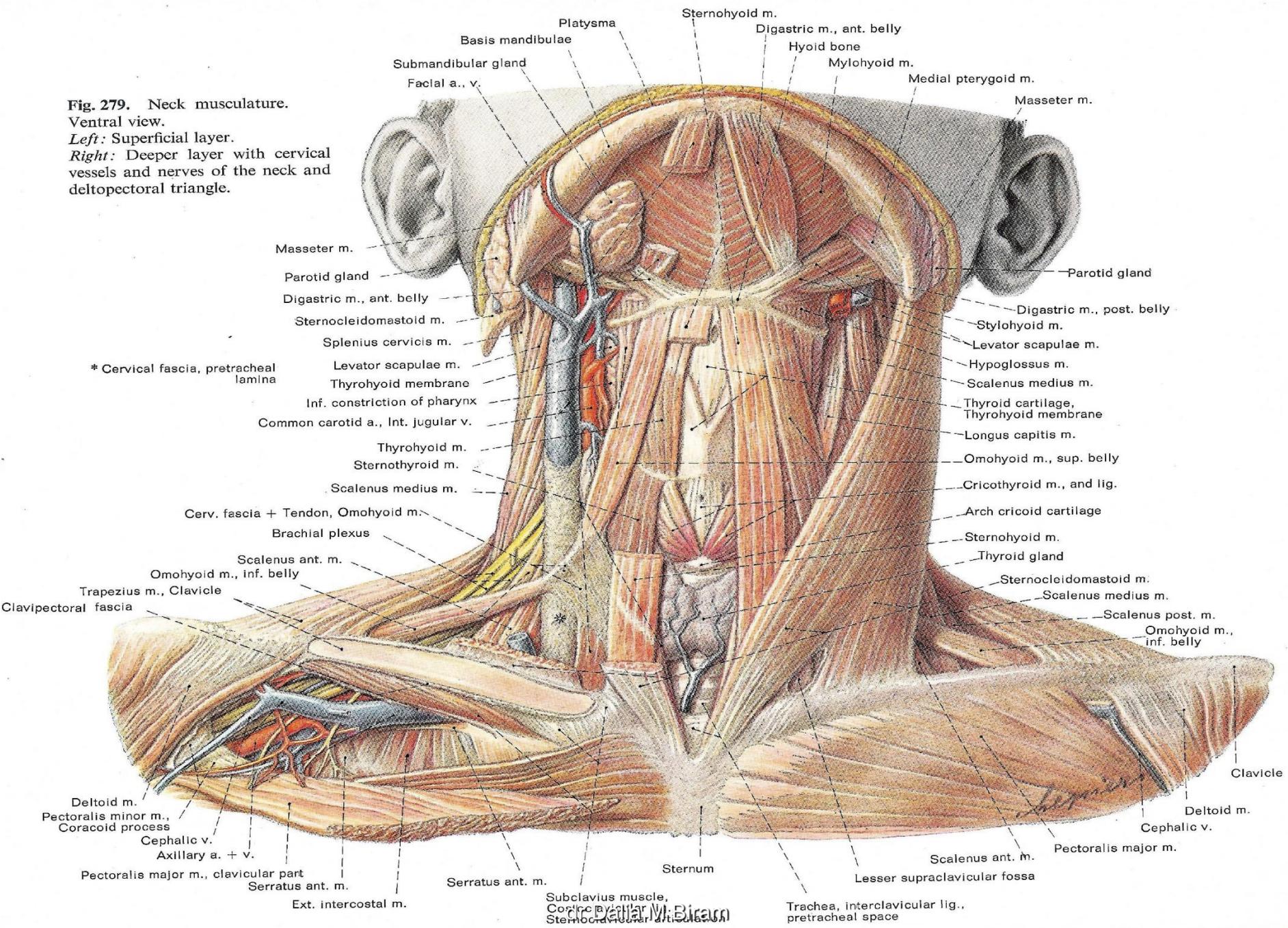


Fig. 279. Neck musculature.
 Ventral view.
Left: Superficial layer.
Right: Deeper layer with cervical vessels and nerves of the neck and deltopectoral triangle.



* Cervical fascia, pretracheal lamina

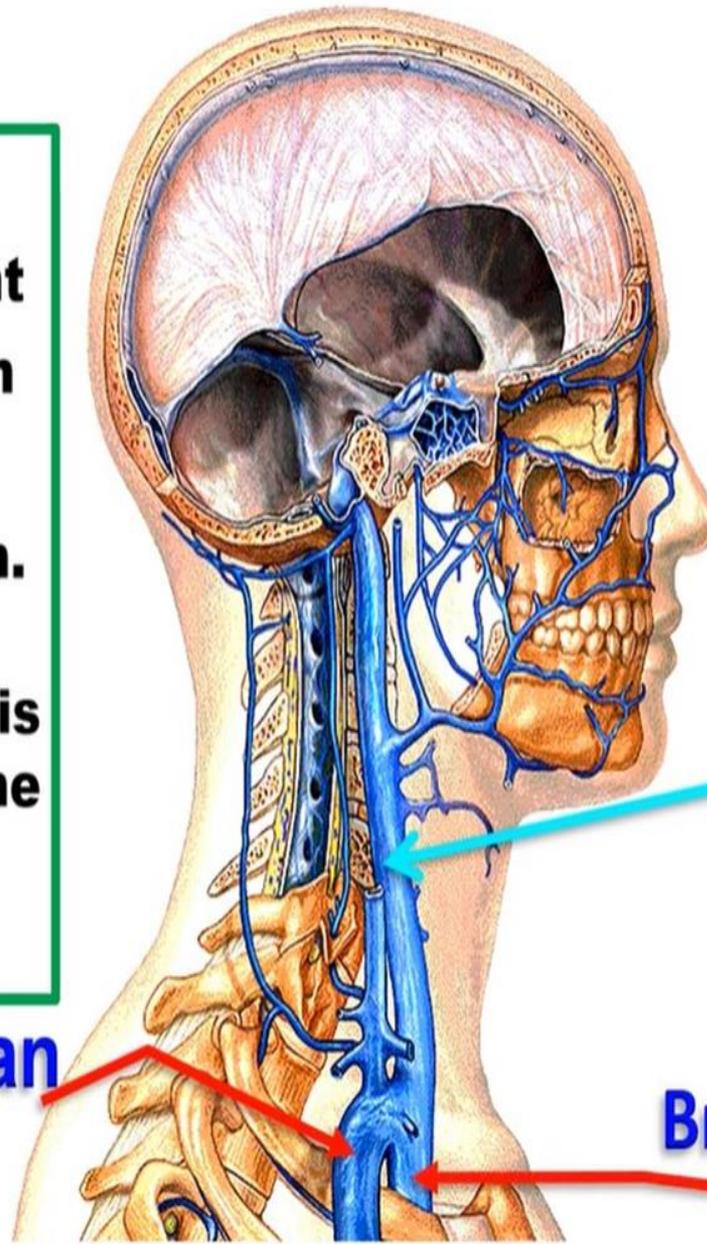
Subclavius muscle,
 Coracoclavicular ligament,
 Sternoclavicular joint

Trachea, interclavicular lig.,
 pretracheal space

- **Termination:** behind sternoclavicular joint by joining subclavian vein to form brachiocephalic vein.

N. B: the right vein is usually larger than the left one.

**Subclavian
vein**

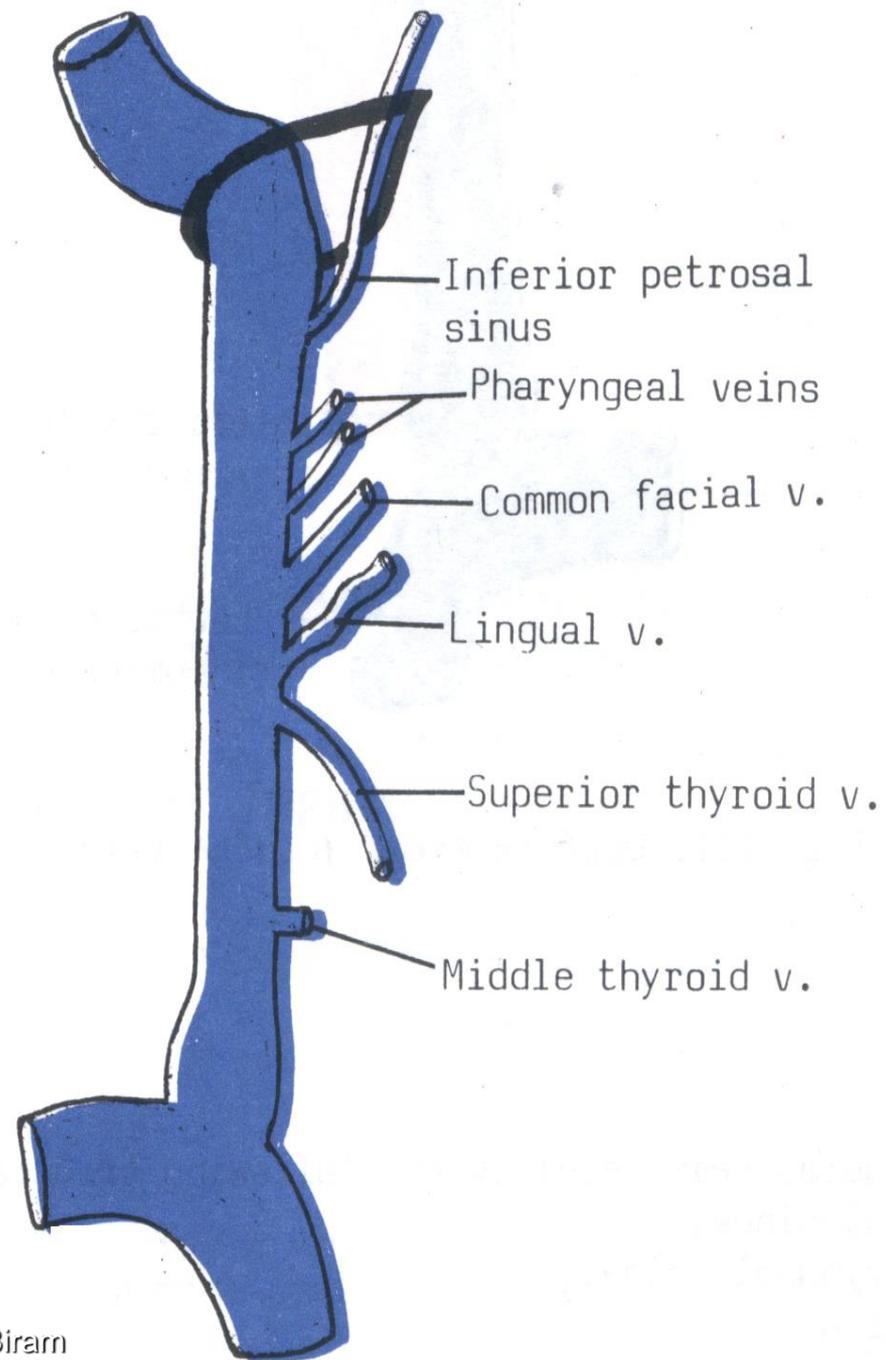


IJV

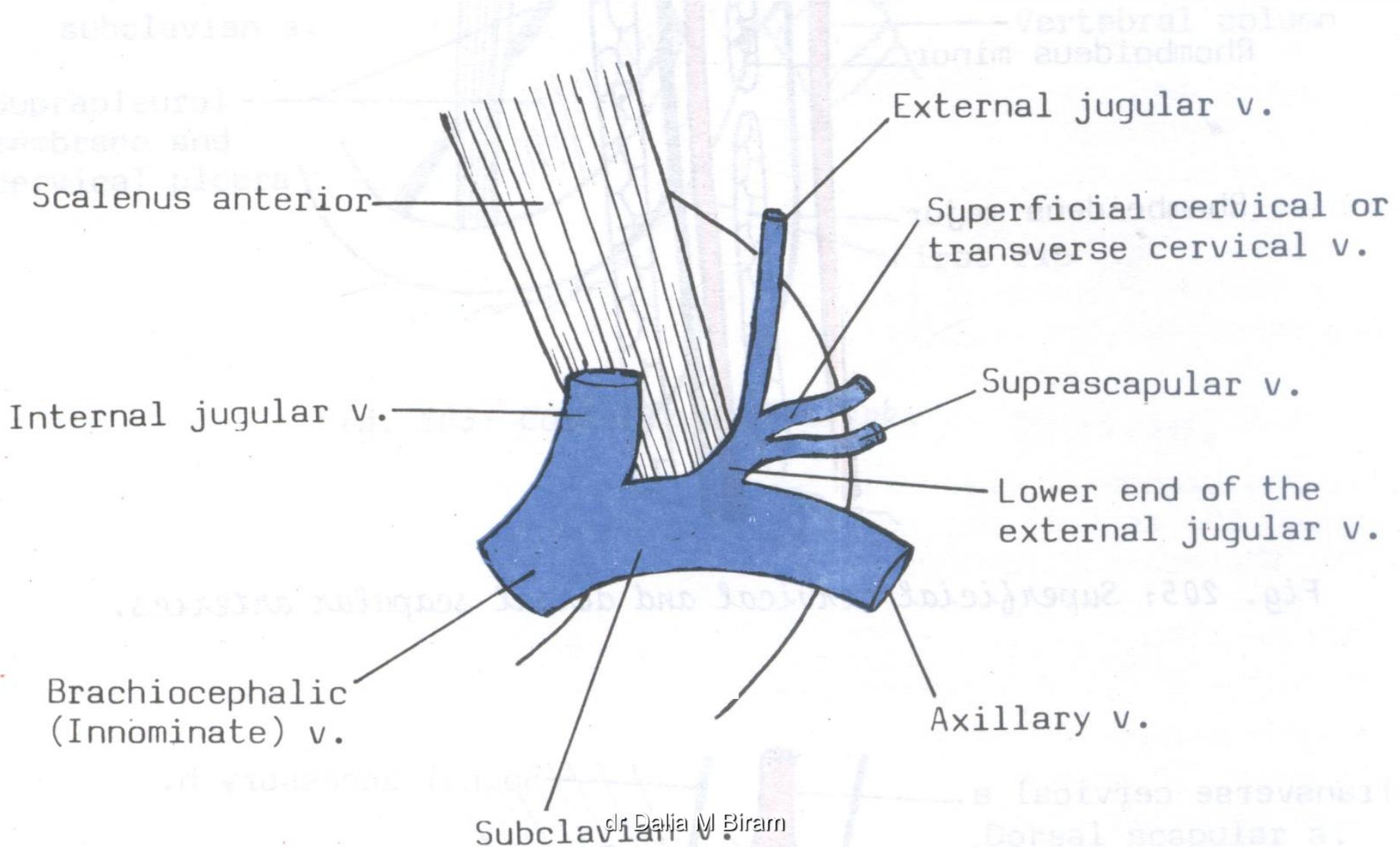
**Brachiocephalic
vein**

■ **Tributaries:** the internal jugular vein receives the following tributaries:

- Inferior petrosal sinus.
- Two or more pharyngeal veins.
- Common facial vein.
- Lingual vein.
- Superior thyroid vein.
- Middle thyroid vein.



Subclavian vein



Subclavian vein

- It is continuation of **axillary vein** at the outer border of first rib.
- It runs on the upper surface of first rib in front of insertion of scalenus anterior, which intervenes between it and the subclavian artery.
- It corresponds only to the third and second parts of the artery.
- It **ends** behind the medial end of clavicle by joining the IJV vein to form the innominate vein.
- It has only one tributary, which is the **external jugular vein**.

THANK YOU

dr Dalia M Biram