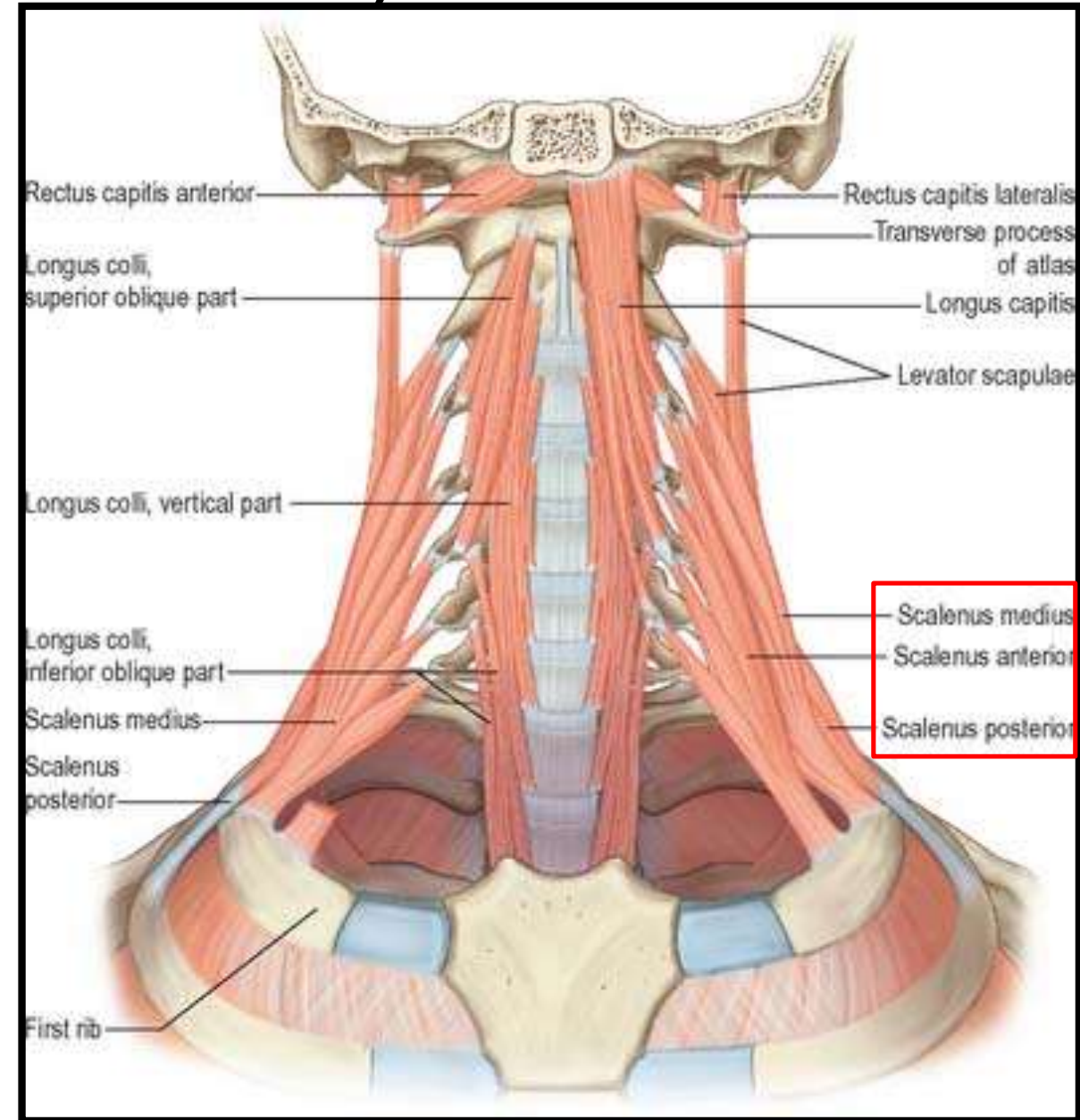


Paravertebral Region & Root Of Neck

Presented by :- Dr. Sushma Tomar
Associate Professor
Department of Anatomy

PARAVERTEBRAL (Lateral Vertebral)MUSCLES

- Extend obliquely from **transverse processes** of cervical vertebrae to the **upper two ribs**.
- Lie under cover of sternocleidomastoid.
- Covered by **prevertebral layer of deep cervical fascia**.
- Consists of:-
 - *Scalenus posterior.*
 - *Scalenus medius.*
 - *Scalenus anterior.*



Scalenus Posterior

- **Smallest** and most deeply situated muscle in this group.

ORIGIN-

- **Posterior tubercles** of the transverse processes of **C4**, **C5**, and **C6** vertebrae.

INSERTION-

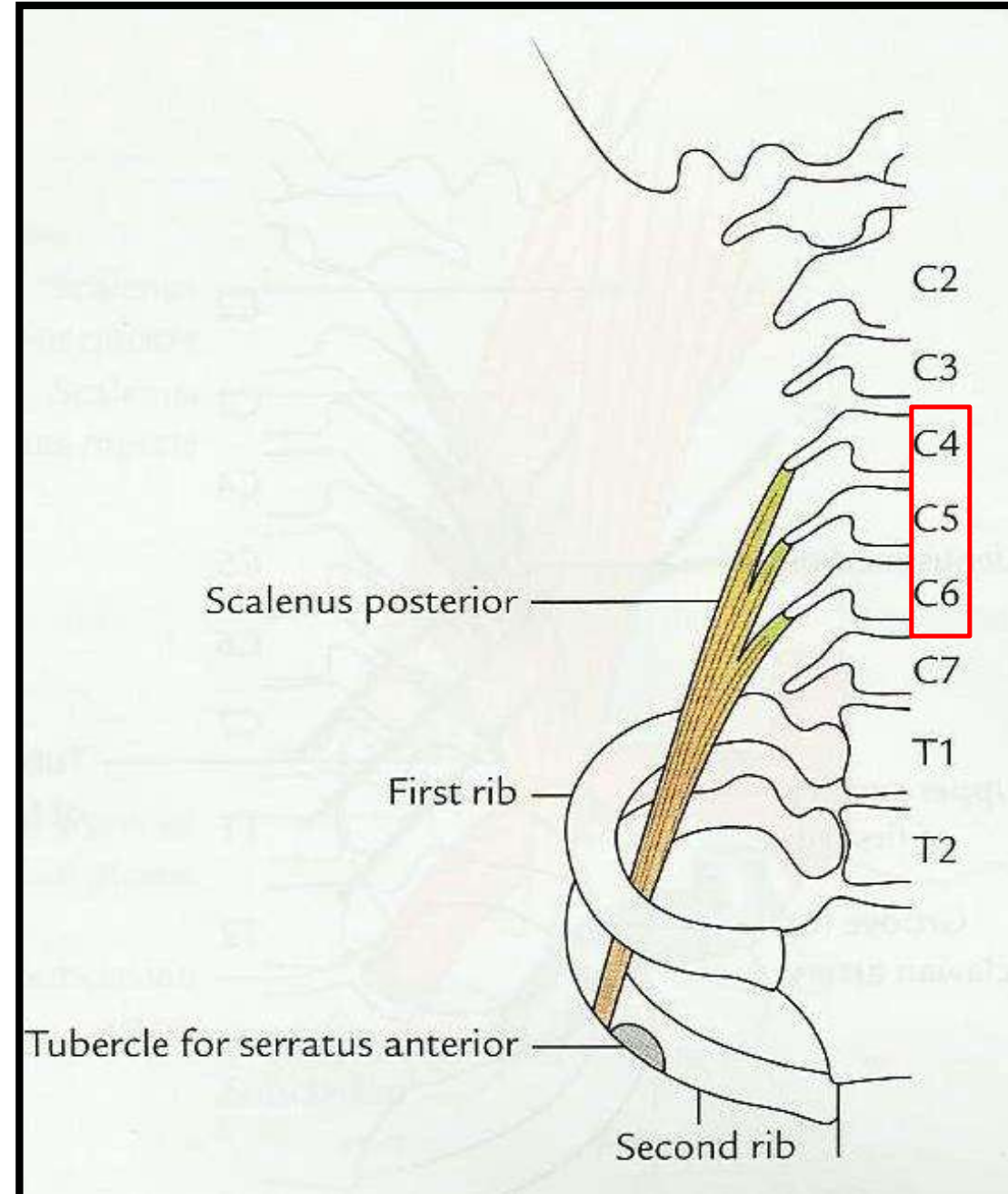
- Outer surface of the **2nd rib**, behind the tubercle for Serratus anterior.

NERVE SUPPLY-

- Anterior primary rami of lower three cervical (**C6**, **C7**, and **C8**) spinal nerves.

ACTIONS-

- Bends the cervical vertebral column to the same side (when the 2nd rib is fixed).
- Elevates the 2nd rib (when upper attachment is fixed).



Scalenus Medius

ORIGIN-

- **Posterior tubercles** and **costo-transverse bars** of the transverse processes of **C2- C6** vertebrae.

INSERTION-

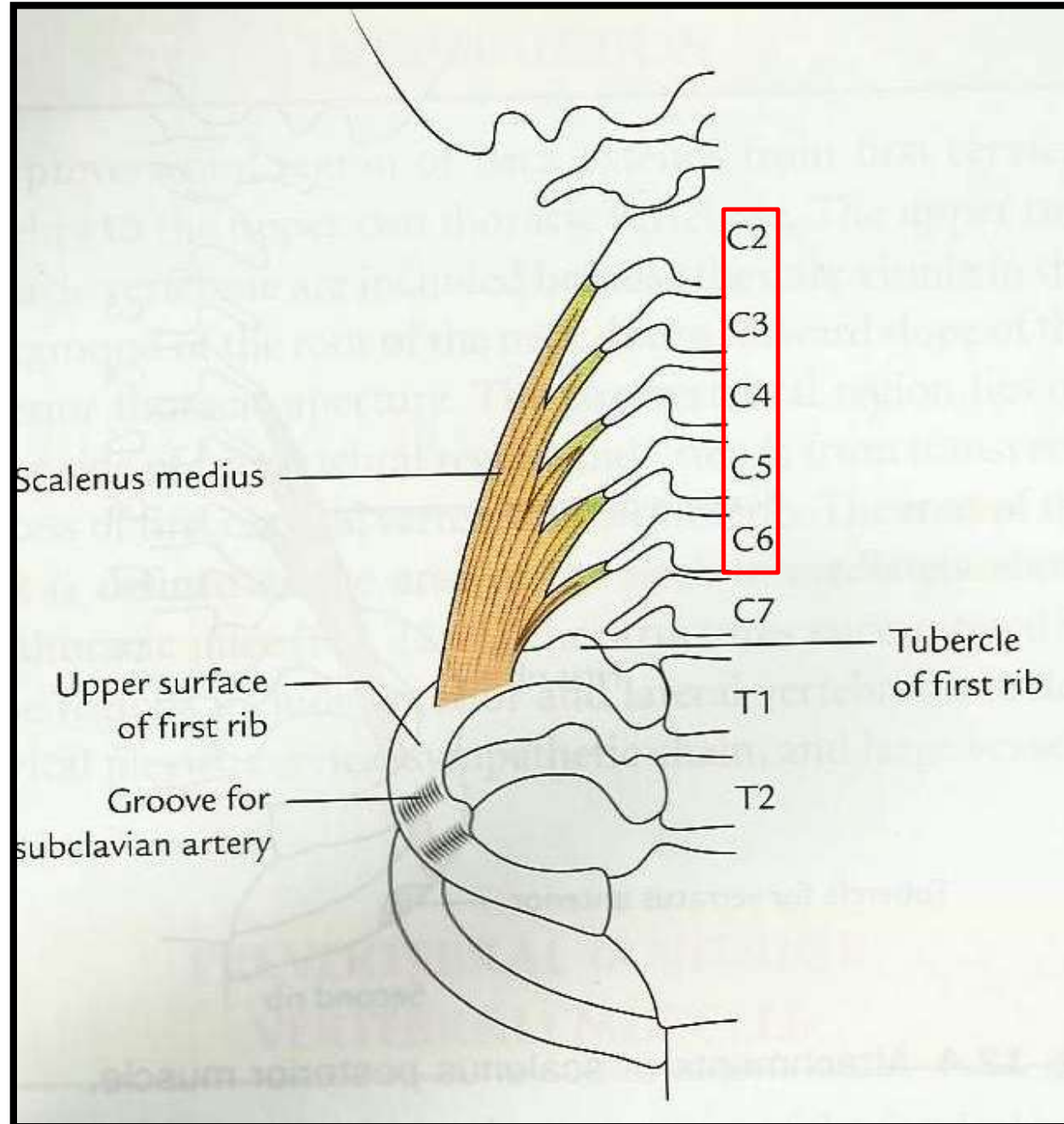
- Upper surface of the **1st rib**, between the tubercle of the rib and groove for subclavian artery.

NERVE SUPPLY-

- Anterior primary rami of **C3-C8** spinal nerves.

ACTIONS-

- Bends the cervical vertebral column to the same side (when the 1st rib is fixed).
- Elevates the 1st rib (when upper attachment is fixed)- *accessory muscle of respiration.*



Scalenus Anterior

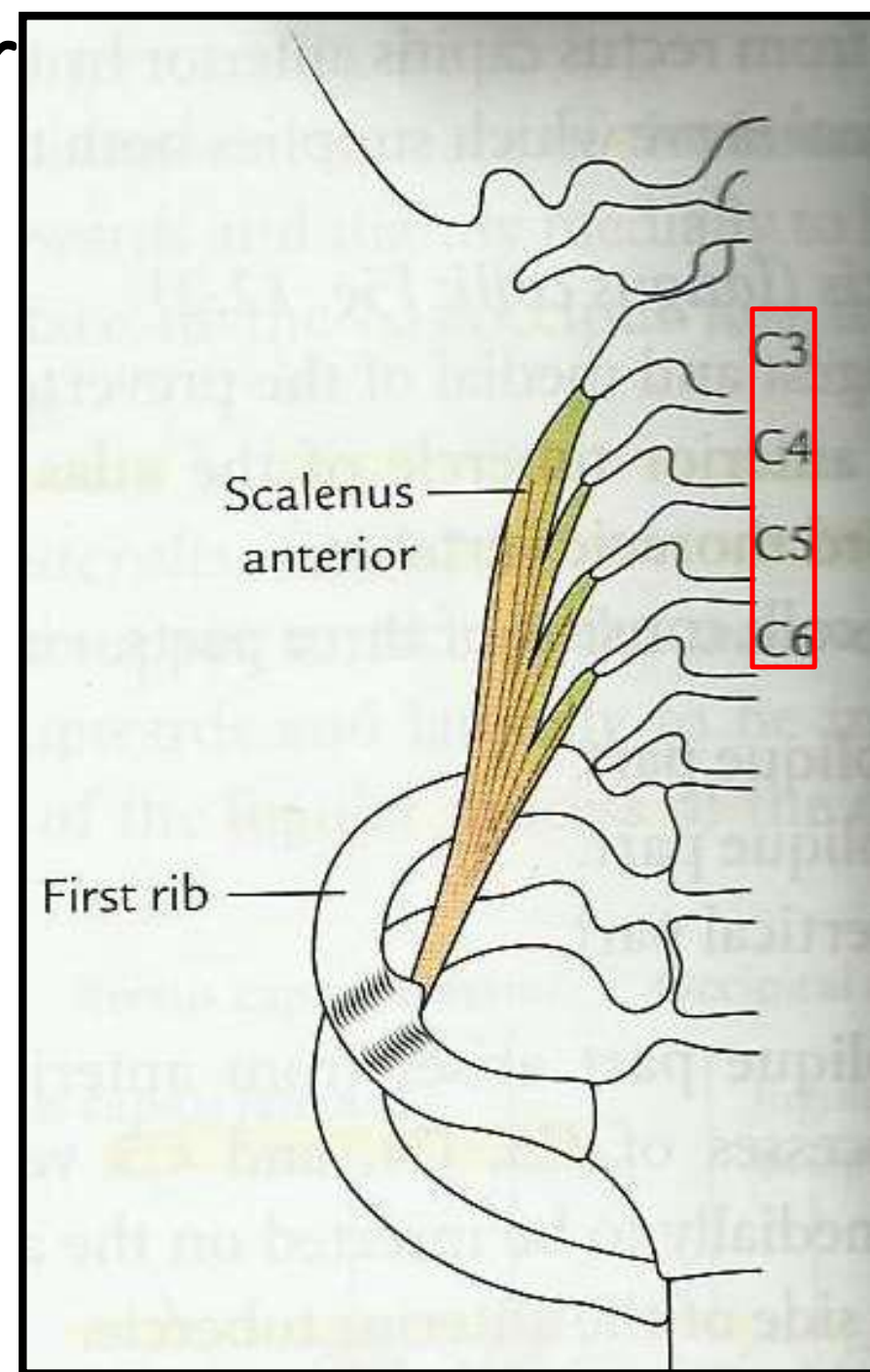
- *'Key muscle'* at the **root of the neck**.
- Most superficial and lies deep to Sternocleidomastoid muscle.
- It is a useful **'surgical landmark'**.

ORIGIN-

- **Anterior tubercles** of the transverse processes of **all typical cervical (C3- C6)** vertebrae.

INSERTION-

- **Scalene tubercle** on inner border of the **1st rib**.
- Ridge on the upper surface of **1st rib** separating the groove for subclavian artery posteriorly and groove for subclavian vein anteriorly.



Scalenus Anterior contd...

NERVE SUPPLY-

- Anterior primary rami of **C4, C5,** and **C6** spinal nerves.

ACTIONS-

- Flexion of cervical part of vertebral column.
- Elevates the 1st rib-*accessory muscle of respiration.*



Relations of Scalenus Anterior

ANTERIOR-

One nerve-

1. Phrenic Nerve.

Two arteries-

1. Suprascapular artery.
2. Transverse cervical artery.

Two veins-

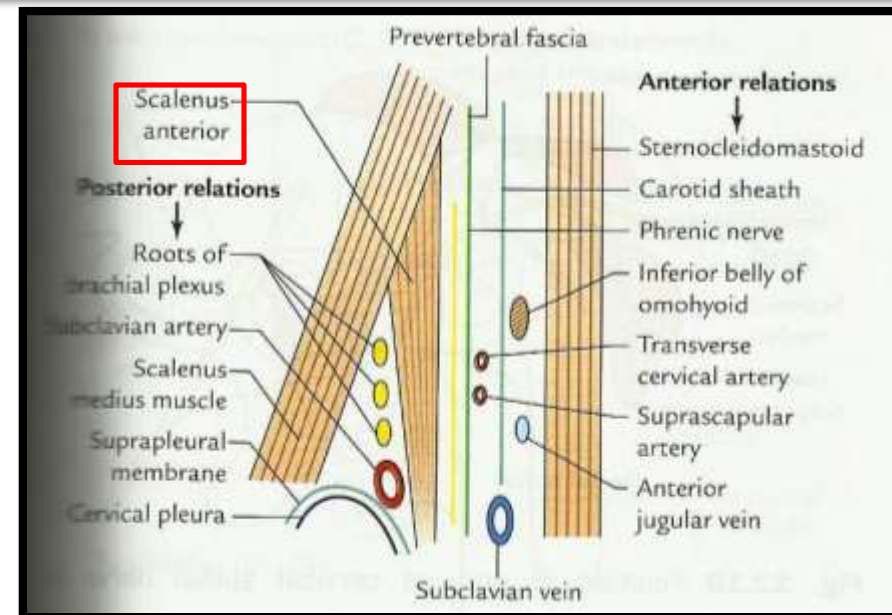
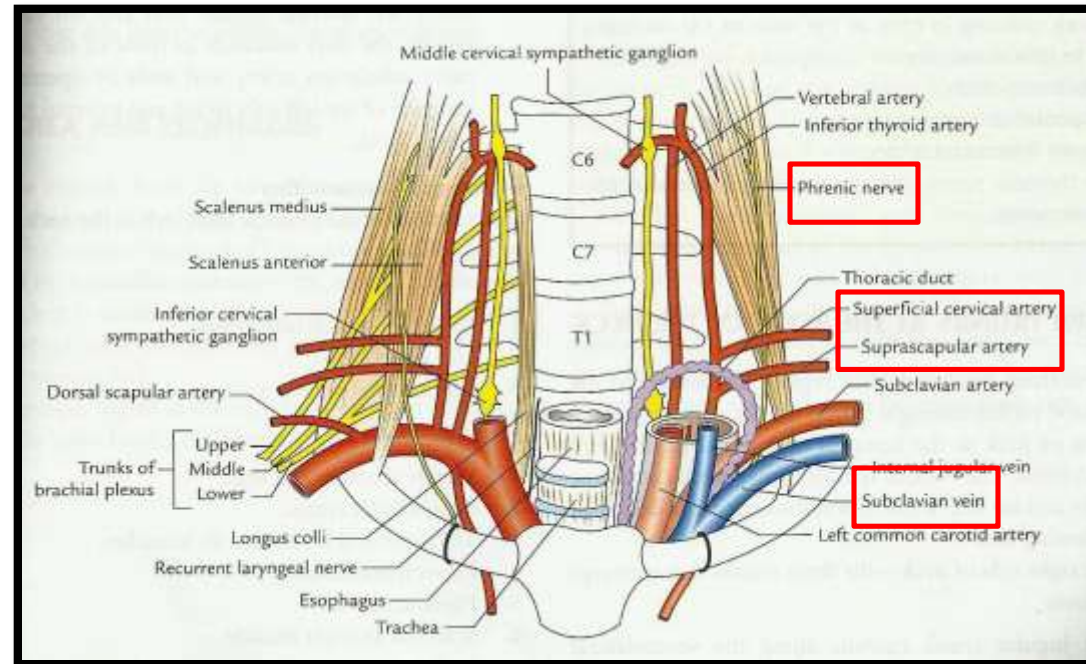
1. Anterior jugular vein.
2. Subclavian vein.

Two muscles-

1. Inferior belly of omohyoid.
2. Clavicular head of Sternocleidomastoid

Carotid sheath.

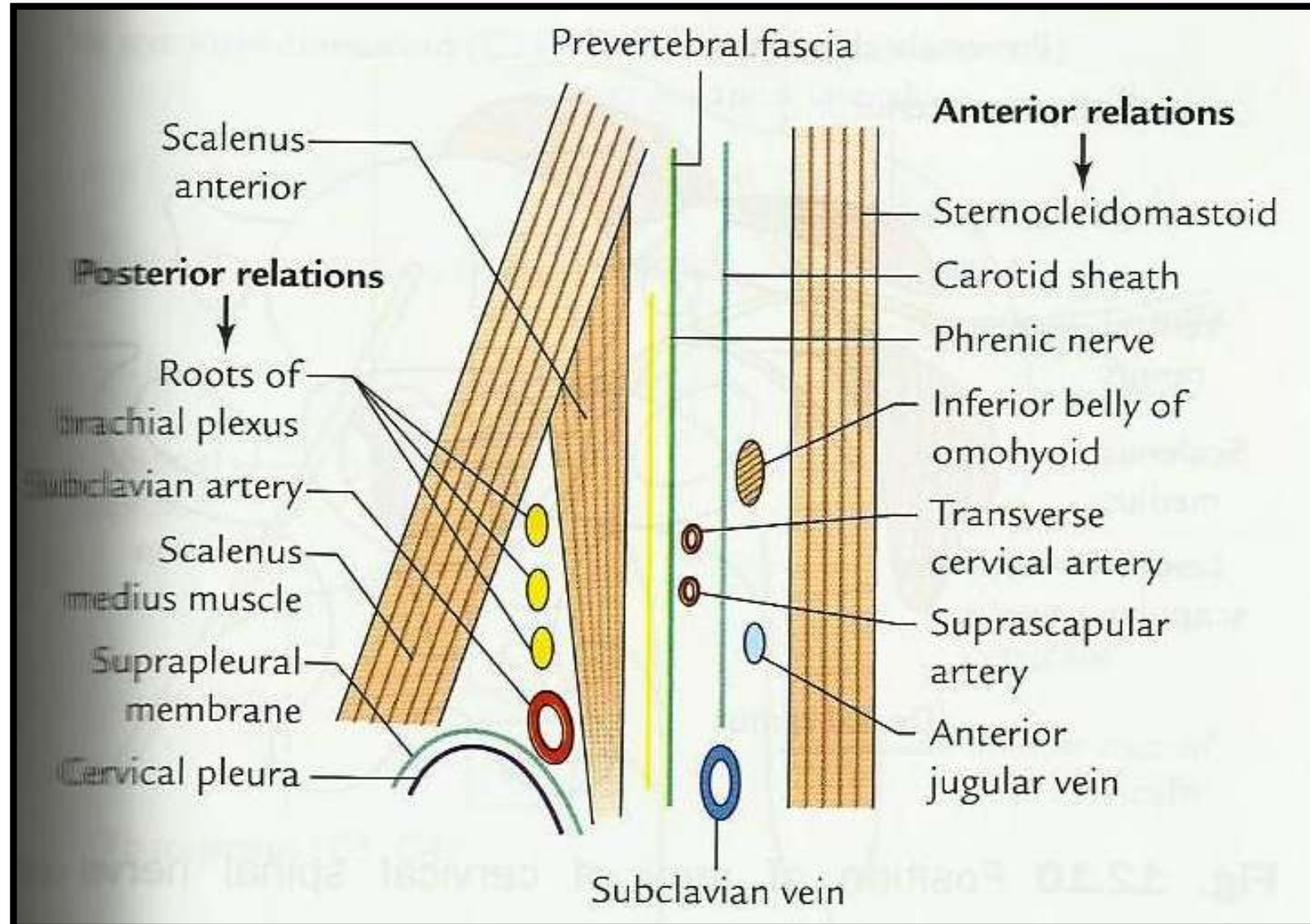
Clavicle bone.



Relations of Scalenus Anterior contd...

POSTERIOR-

- Roots of brachial plexus.
- 2nd part of Subclavian artery.
- Scalenus medius muscle.
- Cervical pleura.
- Suprapleural membrane.



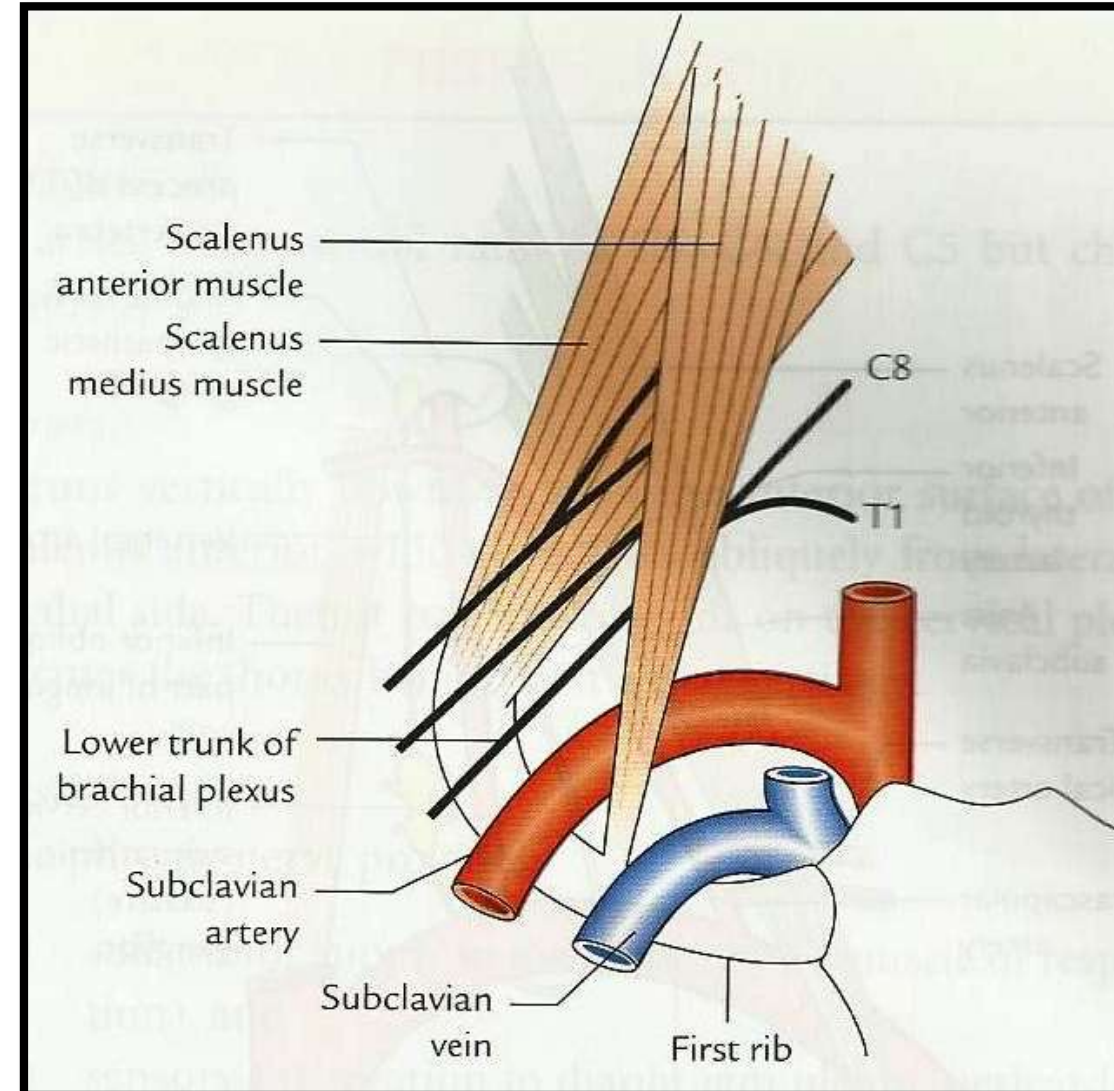
Scalene Triangle

LOCATION-

- Above the first rib between **Scalenus anterior** and **Scalenus medius** muscle.

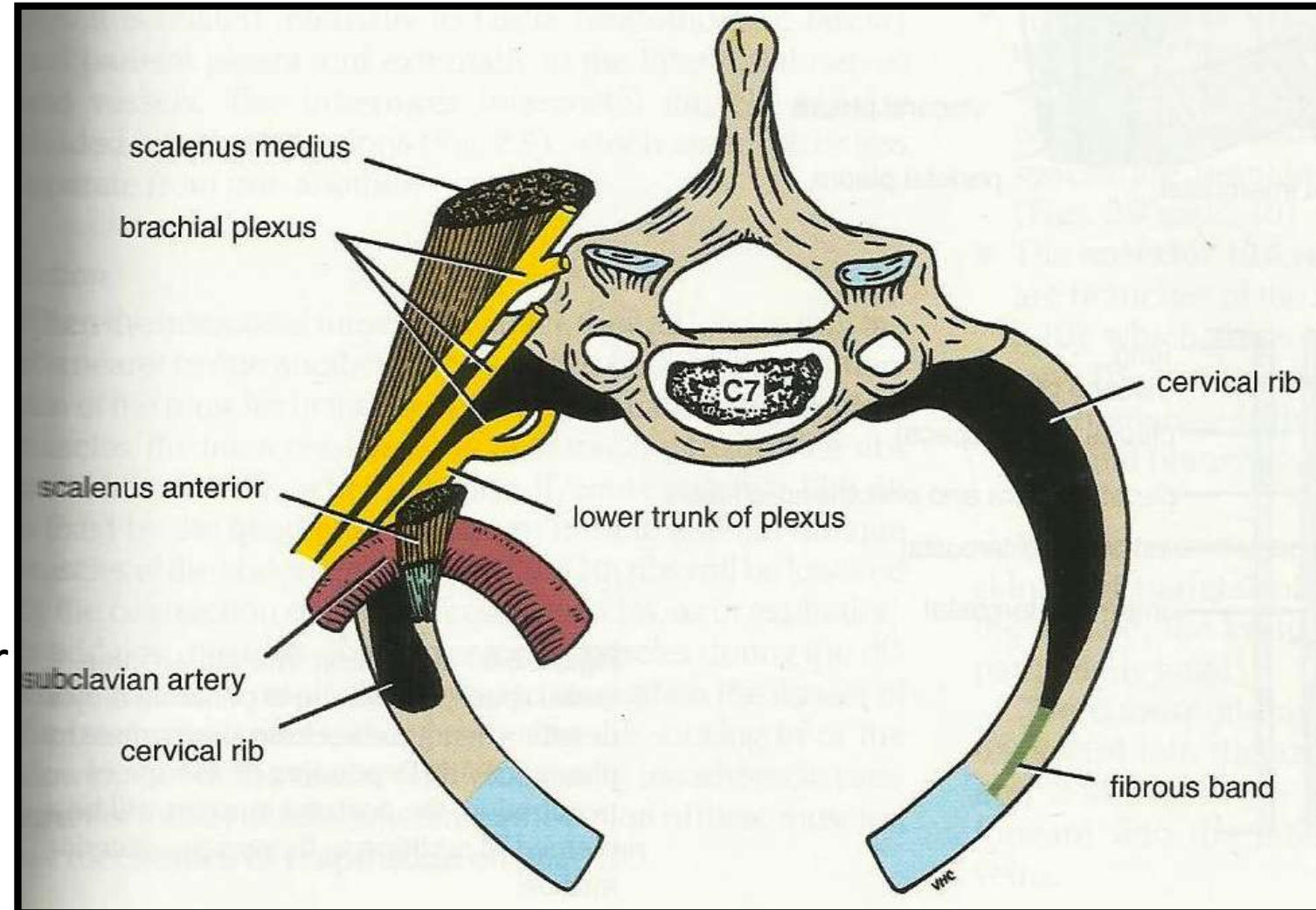
CONTENTS-

- Trunks of brachial plexus.
- Subclavian artery.



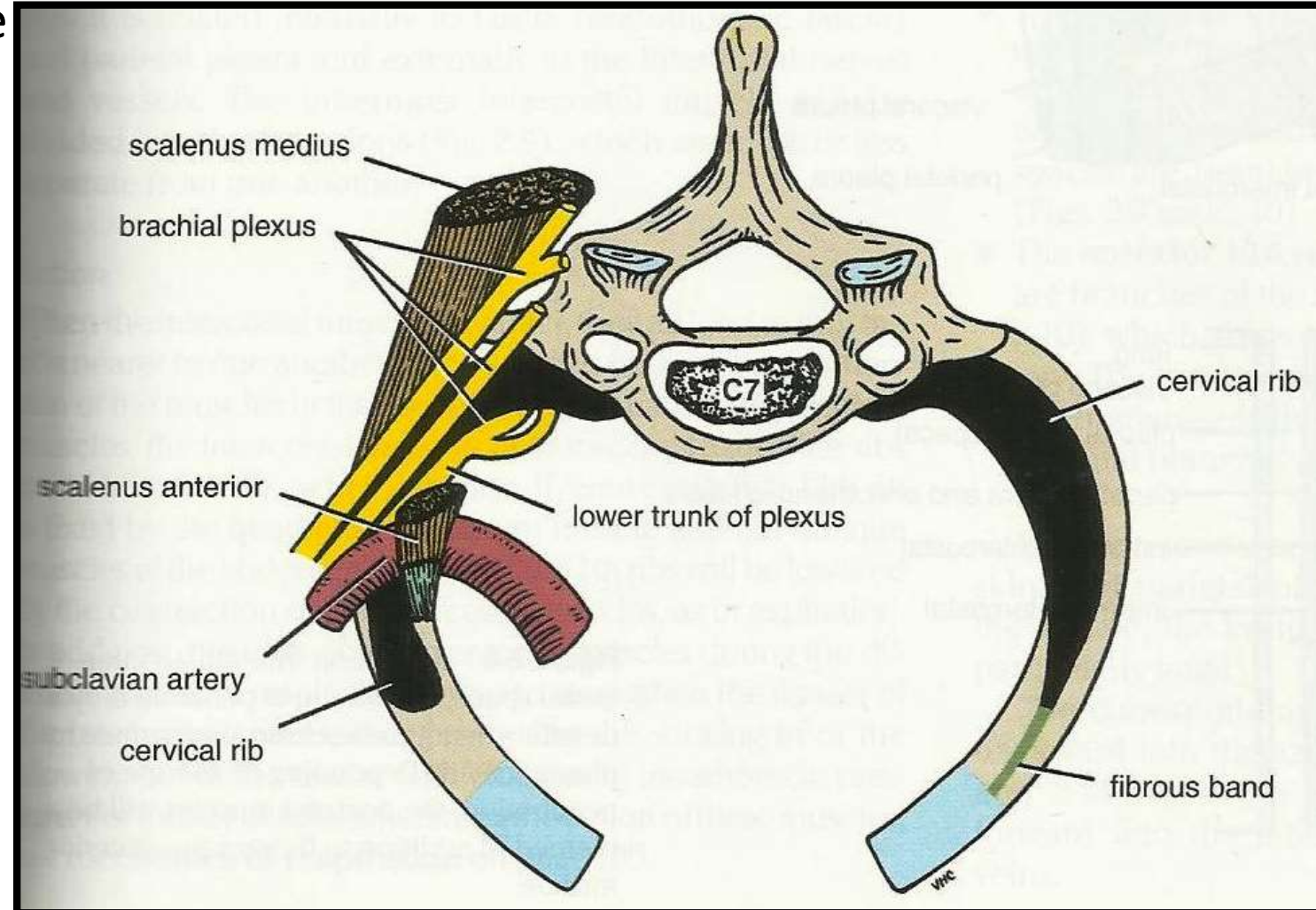
Cervical Rib

- Costal elements of **7th cervical vertebra** undergo abnormal development and form cervical rib.
- Cervical rib arises from **anterior tubercle** of transverse process of **7th cervical vertebra**.
- Occurs in less than **0.5%** of population.
- Cervical rib may have free anterior end, may be connected to the 1st rib by a fibrous band or may articulate with the 1st rib.



Cervical Rib contd...

- **Complete cervical rib** passes laterally and forward **between** the **Scalenus anterior** and **Scalenus medius** muscles and joins with the first rib close to the insertion of scalenus anterior.
- More often it is unilateral.
- **More frequent** on the **right side**.
- Lower trunk of brachial plexus arches over the cervical rib.



Scalene Syndrome

- Occurs due to compression of lower trunk of brachial plexus (C8 and T1) and Subclavian artery in the scalene triangle.

ETIOLOGY-

- Cervical rib.
- Spasm of scalene muscles.

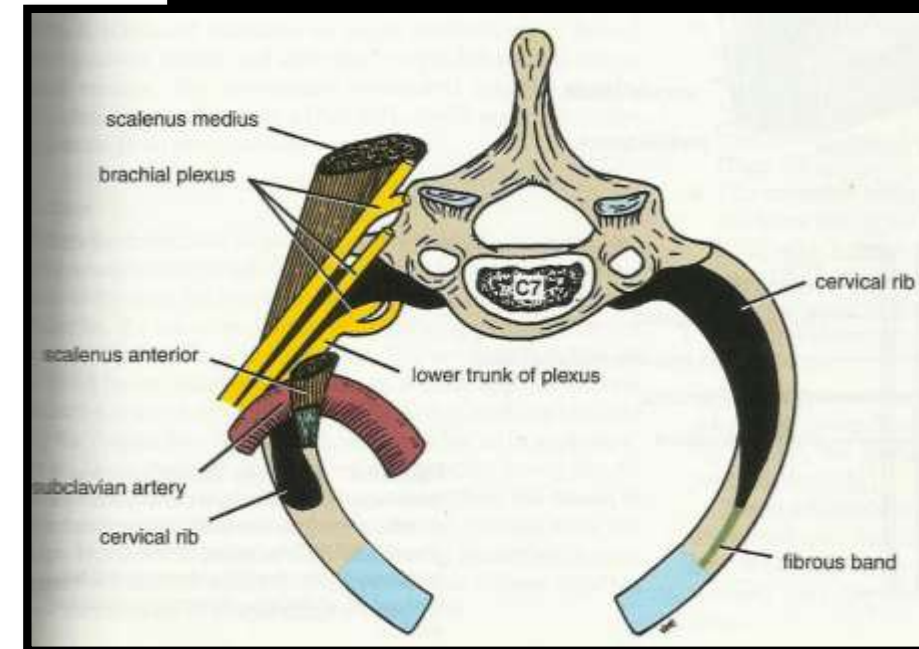
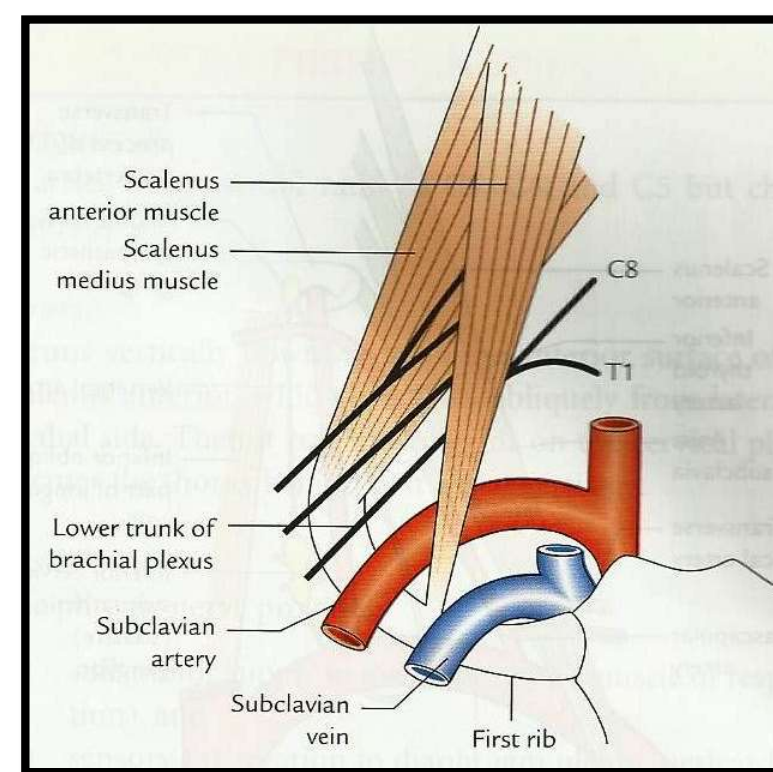
CLINICAL PRESENTATION-

Due to compression on lower trunk of brachial plexus:

- Sensory loss of medial one and half fingers of the hand and part of forearm.
- Tingling sensation and numbness along the inner border of forearm and hand.
- Progressive paresis and wasting of hypothenar muscles of the hand.

Due to occlusion of Subclavian artery:

- Ischemic pain and absence of radial pulse



Scalene Syndrome contd...

- Compression of Subclavian artery may result in an aneurysm, which is a potential source of emboli to the hand.
- Emboli may cause gangrene of the finger tips.

LOCAL COMPLICATIONS-

- Tender supraclavicular lump which is bony hard and fixed.

Scalenovertеbral Triangle OR Triangle of Vertebral Artery

- A deeply placed triangular space at the root of the neck.

BOUNDARIES-

Medial-

Inferior oblique part of Longus colli.

Lateral-

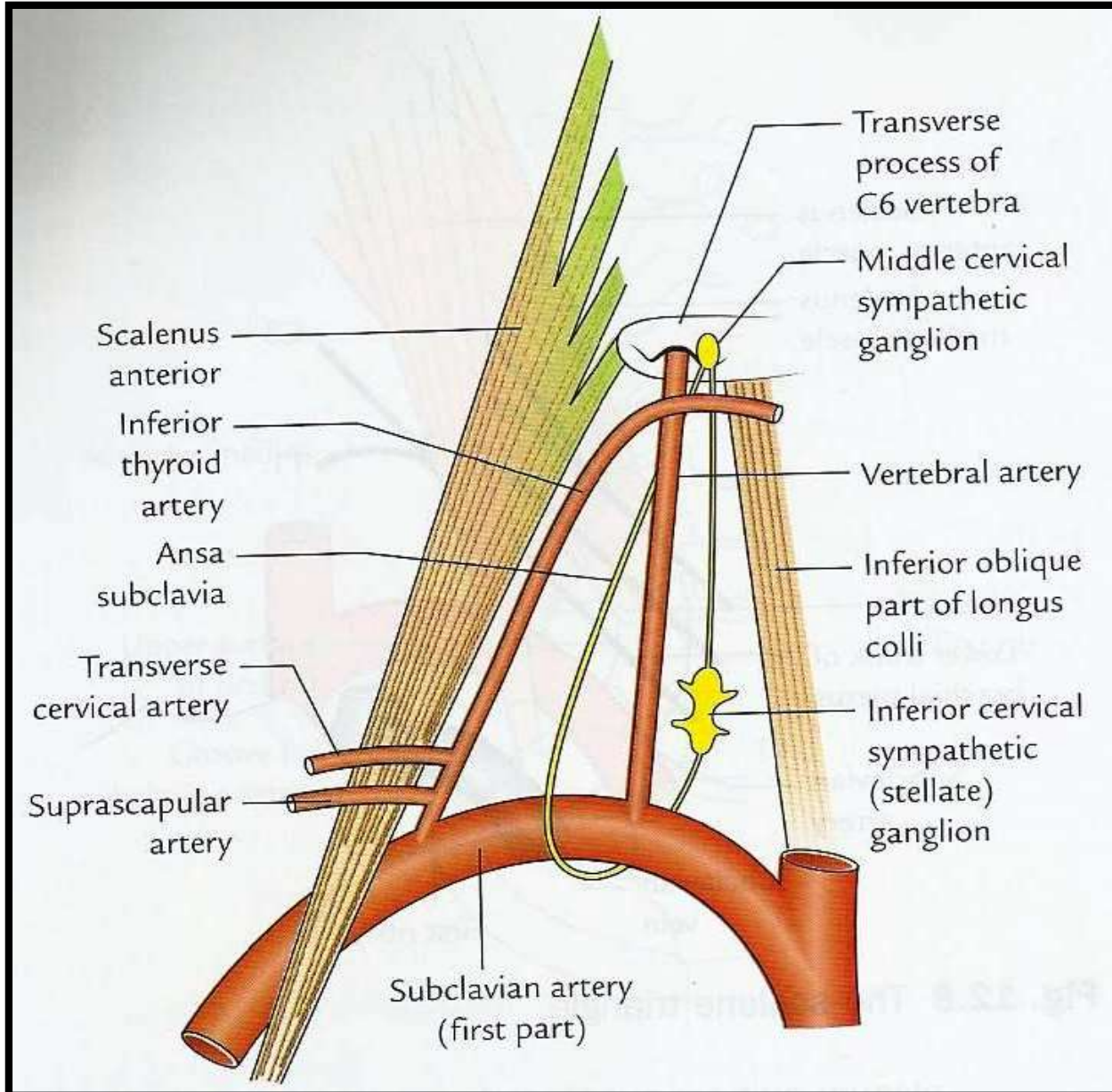
Medial border of Scalenus anterior.

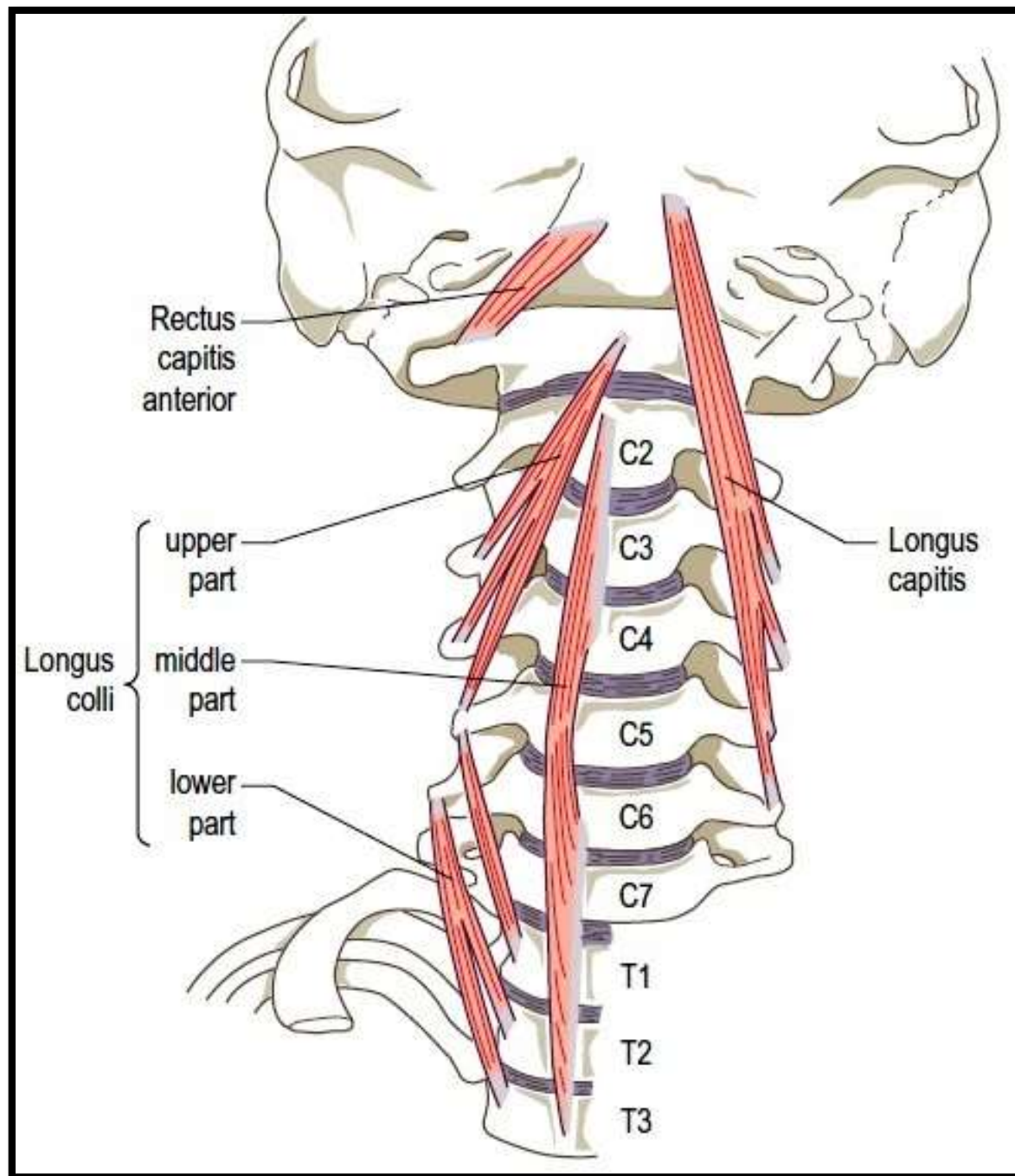
Apex-

Transverse process of C6 vertebra.

Base-

1st part of subclavian artery.





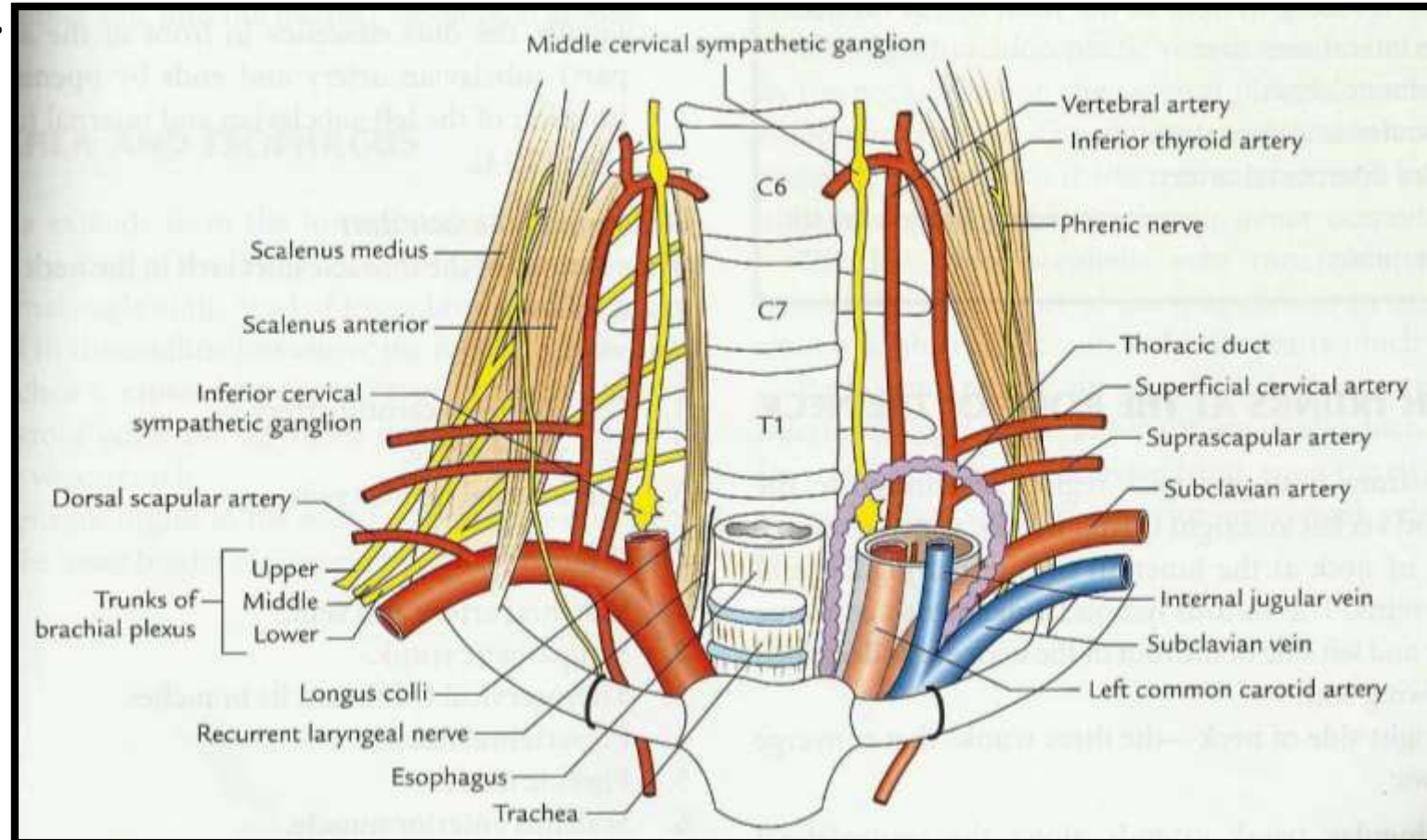
Boundaries of Scalenovertеbral Triangle contd...

Floor-

1. Transverse process of C7 vertebra.
2. Ventral ramus of C8 spinal nerve.
3. Neck of 1st rib.
4. Cupola of cervical pleura.

Roof-

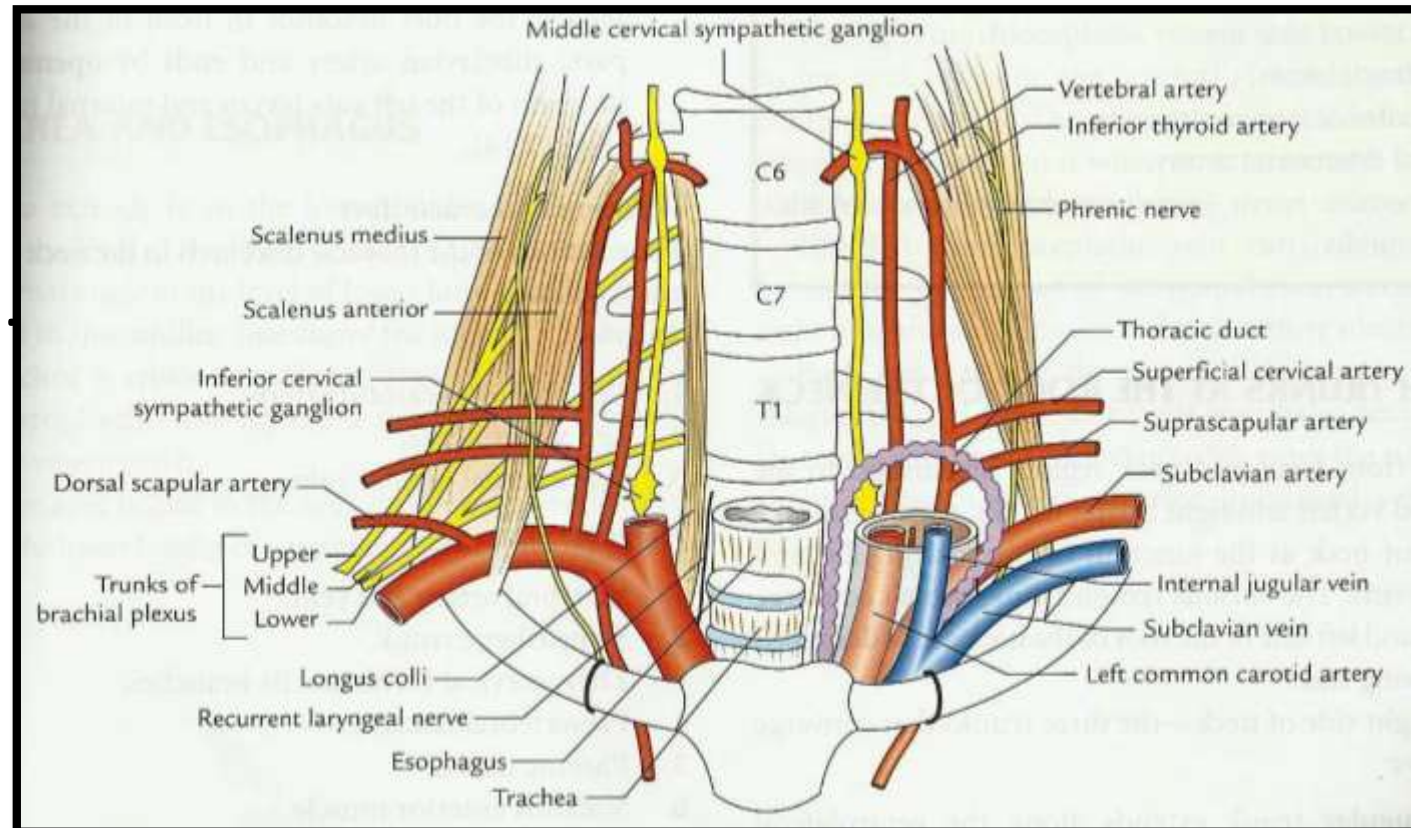
Carotid sheath



SCALENOVERTEBRAL TRIANGLE CONTD...

CONTENTS-

- 1st part of vertebral artery.
- Thyrocervical trunk.
- Inferior thyroid artery.
- Sympathetic chain with stellate ganglion.
- Ansa subclavia.



Thank You!