The Posterior Cervical Triangle
Objectives …

- To define fascial compartments of the neck.

- To describe the borders & main contents of the posterior cervical triangle.

- To relate subclavian vessels & brachial plexus to the region.
Midline surface landmarks in the neck:

- **Hyoid bone**
- **Thyroid C**
- **Cricoid C**
- **Trachea**
Skin incisions in the Head & Neck ...

Surgical incisions should follow a map of skin lines called tension lines

Tension lines of the skin (Langer or cleavage lines):

- Follow collagen arrangement
- Incisions along them end with minimum scars
- In the neck, they are transverse
- Senile wrinkles follow these lines
Structures between the skin & deep fascia:

1- Platysma:

**Origin:** Pectoral fascia

**Insertion:** Lower border of the mandible & skin of the corners of the mouth

**Nerve supply:** Cervical branch of VII

**Action:** Depresses the corner of the mouth & lower border of the mandible
2- Veins:

External jugular vein:
• Formed just below the auricle
• Extends between the angle of mandible & the middle of the clavicle
• Drains into the subclavian vein
• Distended in heart failure & increased intrathoracic pressure

Anterior jugular vein:
• Formed below the chin
• Run each side of the midline
• Connected to each other by the jugular venous arch in the suprasternal space
• Empty in the EJV
3- Nerves (cutaneous branches of cervical plexus):

**Lesser occipital (C2):**
- Along the posterior border of SCM
- Supplies skin & subcutaneous tissue at the insertion of the muscle

**Great auricular (C2,3):**
- Ascends in the direction of the auricle
- Supplies the auricle (except the upper ½ of lateral surface) & skin over the angle of mandible
Anterior cervical cutaneous (C2,3):
- Crosses SCM horizontally forward
- Supplies skin & subcutaneous tissues of the cylinder of the neck

Supraclavicular (C4):
- Medial; skin over manubrium sterni
- Intermediate; skin over the pectoral region down to the sternal angle
- Lateral; skin over deltoid as far as the distal 1/2 of muscle
Deep fascia of the neck:

1- Investing
2- Prevertebral
3- Pretracheal
4- Carotid sheath
The investing fascia:

- Double layered fascial cylinder surrounding the neck
- Attached superiorly to the superior nuchal line – zygomatic arch – mandible
- Attached inferiorly to the clavicle & spine of scapula
- Has hyoid bone attachment
- Encloses two muscles on each side (sternomastoid & trapezius)
- Encloses 2 glands on each side (parotid & submandibular)
- It roofs all neck triangles
The prevertebral fascia:

- Surrounds the vertebral column & surrounding muscles
- Extends from skull base down to T4
- Forms the floor of posterior cervical triangle
- Forms the axillary sheath
The pretracheal fascia:
- Surrounds the thyroid gland
- Attached to thyroid cartilage of larynx
- Makes the thyroid moves up with swallowing
The carotid sheath:

- Surrounds the carotid arteries, IJV & vagus nerve
- Extends from skull base (margins of carotid canal) down to aortic arch
- Fuses laterally with investing fascia
- Fuses medially with pretracheal fascia
Boundaries of cervical triangles:

1- Anterior:
- Midline
- Mandible (lower border)
- Anterior border of SCM

2- Posterior:
- Clavicle (middle third)
- Anterior border of trapezius
- Posterior border of SCM
Sternocleidomastoid:

- Arises from the manubrium sterni & medial third of clavicle
- Inserted in the mastoid process & lateral third of superior nuchal line
- Supplied by the accessory nerve
- Action:
  - Unilateral:
    - Flexes the head to its own side
    - Turns the face to the opposite side
  - Bilateral:
    - Extends the skull
    - Accessory muscle of respiration
The posterior cervical triangle:

Contents:

Structures in the posterior triangle

- Nerves
  - Spinal accessory
  - Cervical plexus
    - C1-4
  - Sensory (discussed)
  - Motor
    - C1 to XII nerve
    - Ansa cervicalis
    - Phrenic

- Arteries
  - Occipital (in the apex)
  - Transverse cervical & suprascapular (in the base)

- Others
  - Lymph nodes
  - Omohyoid
Spinal accessory nerve (CN XI):

- Extends between SCM & trapezius supplying them

- Nearer to the roof (easily injured)

- Its injury due to penetrating trauma or surgery results in torticollis (wry neck)
Wry neck (torticollis)

Un-apposed unilateral spasm of trapezius & sternomastoid
resulting in turning of the face to the .?. side
Motor branches of cervical plexus:

1- C1 fibers distributed by hypoglossal nerve as:
   1- Meningeal branch
   2- Superior ramus of ansa C.
   3- Nerve to thyrohyoid
   4- Nerve to geniohyoid

2- Inferior root of ansa cervicalis (C2,3).

3- Phrenic nerve C4).
Lymph nodes:

1- Occipital:
- Along the occipital artery
- In the apex of triangle

2- Supraclavicular:
- Along transverse cervical & suprascapular arteries
- In the base of the triangle
- They represent a group of deep cervical nodes
Muscles in the floor:

Removing the fascial carpet of the floor of the triangle will expose the following muscles:

- Splenius
- Levator scapulae
- Scalenus posterior
- Scalenus medius
- Scalenus anterior
Vital structures are embraced between scalenus anterior & medius:

1- The roots of brachial plexus

2- The subclavian artery
Subclavian artery:

- Arises from the brachiocephalic trunk on the right & from aortic arch on the left side
- Passes behind scalenus anterior which divides it into three parts
- Continues beyond the outer border of the first rib as the axillary artery surrounded by fascial sheath
Branches:

First part:

1- Vertebral artery:
- Ascends in F transversaria of C6-C1
Supplies the neck muscles, spinal cord & hindbrain

2- Internal thoracic artery:
- Descends to the chest wall
- Supplies the anterior chest wall, pericardium & breast
3- Thyrocervical artery:

Form arched trunk which gives:

- Ascending cervical; ascends on scalenus anterior
- Suprascapular; to scapular region
- Transverse cervical; divides into deep cervical & dorsal scapular
- Inferior thyroid; enters the gland

Second part:

Costocervical trunk:

- Gives the deep cervical & superior intercostal branches
Scapular anastomosis connects the first part of subclavian with the third part of axillary artery
Branches of subclavian artery:
1- Vertebral
2- Thyrocervical
3- Internal mammary
4- Costocervical