Sympathetic Chain

- Two Ganglionic Trunks
  - Extent: base of skull to C1
  - Position: Paravertebral
  - Termination: fuse in front of coccyx to form an unpaired Ganglionic Impar
Sympathetic Chain

- 3 Ganglia in cervical part
- 11 Ganglia in thoracic Part
- 4 lumbar Ganglia
- 4 Sacral ganglia
Sympathetic Chain-cervical part

- lie Behind Carotid Sheath and
- in front of Longus colli & Longus Capitis muscles
- Initially
  no. of Sympathetic ganglia correspond to no. of Spinal Nerves
- Later
- Superior formed by fusion of upper 4 cervical Ganglia
- Middle by 5th and 6th
- Inferior by joining of 7th and 8th cervical ganglia
Sympathetic Chain – Cervical Part

- Cervical Part Ganglia
  - Superior Cervical ganglia
  - Middle Cervical Ganglia
  - Inferior Cervical ganglia

Sometimes

Inferior cervical and first Thoracic fuse to form a Cervico-Thoracic or Stellate Ganglia
Sympathetic Chain –
Cervical Part

- Do not receive white rami communicantes from cervical spinal segments

- LAT. HORN CELLS OF T1-T5 PROVIDE PRE-GANGLIONIC FIBRES

- Gives grey rami communicantes to all 8 cervical nerves
Sympathetic Chain – Cervical Part

- **GANGLION**
  - Contains-multipolar post ganglionic neurons & few interneurons (chromaffin or SIF cells*)
  - *modulate activities of post ganglionic neurons by dopamine

- **SYMPATHETIC TRUNK**
  - Conveys pre & post ganglionic motor & sensory fibres between ganglia
SUPERIOR CERVICAL GANGLION

- Largest, fusiform, 2.5cm length
- Fuses upper four cervical ganglia
- Situation- opposite C2 & C3 Vertebrae behind ICA & in front of I. capitis
- Receives pre-ganglionic fibres mostly from upper three thoracic segments
- BRANCHES (all convey post-ganglionic fibres & some sensory fibres)
SUPERIOR CERVICAL GANGLION

- **BRANCHES**
- Lateral-grey rami comm. to C1-C4 nerves & (C5-C8)
- Medial-laryngo-pharyngeal
  - cardiac (no pain fibr.)
Anterior-ramify around CCA, ECA & its branches
Ascending-INTERNAL CAROTID NERVE
  - carotido-tympanic
  - deep petrosal
  - communicating (v, iii, iv, v, & vi)
  - nervus conarii (pineal gland)
Term. communicating (ant. & middle cerebral ophthalmic arteries)
Middle Cervical ganglion

- Formed by joining of Two ganglia
- Corresponding C5 and C6 Nerves
- Situated Opposite C6 Vertebra
- Between C C A in front and the loop of the I T Art Behind
Middle Cervical ganglion

Communications

Connected with Inf. Cer. Ganglion by two cords

Posterior cord splits to enclose the vertebral artery

Anterior Cord forms Ansa Subclavia which loops in front and below the first part of the subclavian artery
Middle Cervical ganglion

Branches
Lateral Branches
Send gray rami communicans to C5 and C6 spinal nerves
Medial Branches
a) Thyroid branches accompany the ITA and supply the Gland
b) Cardiac branches join to form deep cardiac plexus
Inferior Cervical Ganglion

- Formed by Joining of Two ganglia corresponding with C7 and C8 Nerves
- Sometimes inferior joins with first Thoracic ganglia to form Cervico-Thoracic or Stellate ganglion
- Situation – between trans. Pro. of C7 vertebra and the neck of First rib
Inferior Cervical Ganglion

- **Relations**
  - In front –
    - First Part of Vertebral Artery and corresponding Vein
    - Thoracic duct (Lt) or Rt Lymphatic duct
    - Carotid Sheath
    - Cervical Pleura covered with Suprapleural Memb.
  - Behind
    - C8 nerves
  - Medially – Longus Coli Muscle
  - Laterally – Costo cervical Trunk
INFERIOR CERVICAL GANGLION

- Branches-grey rami communicantes to C7 & C8 (T2-T7 SPINAL SEGMENTS- UPPER LIMB)
- Cardiac (T1-T5)-convey pain fibres (middle & inferior ganglia)
- Vascular to subclavian artery
- Vertebral
Applied Anatomy

• Horners Syndrome
• Raynauds Disease
• Angina Pectoris