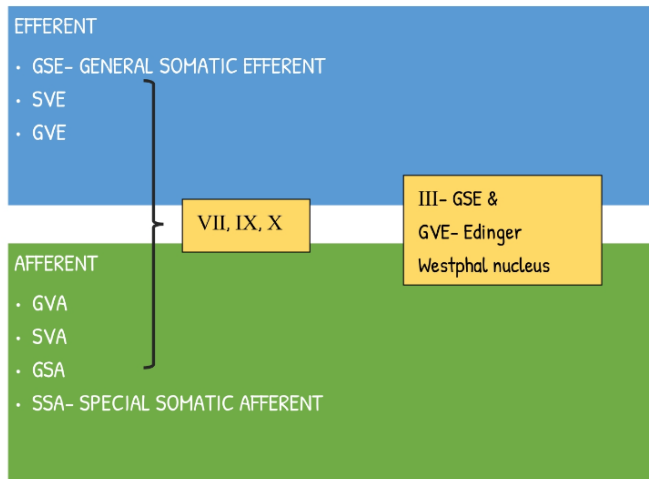


Head, Neck and Face

HEAD, NECK, AND FACE

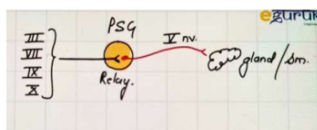


Parasympathetic cranial nerves - III, VII, IX, X

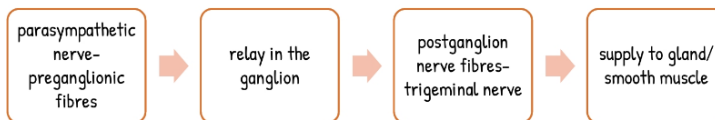
PARASYMPATHETIC GANGLION

06:35

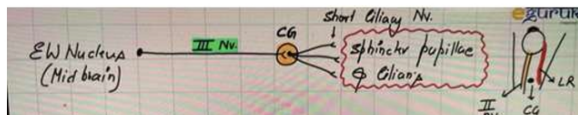
1. Ciliary ganglion
2. Pterygopalatine ganglion
3. Otic ganglion
4. Submandibular ganglion



PSG- parasympathetic ganglion
Sm- smooth muscle



Ciliary Ganglion



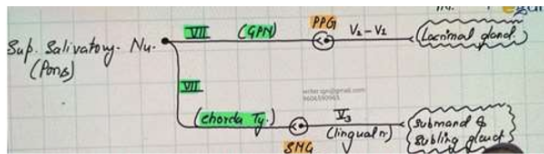
Head, Neck & Face
Topic Notes: 16

- EW - Evinger Westphal
- CG - Ciliary Ganglion
- NV - Nerve
- LR - Lateral rectus

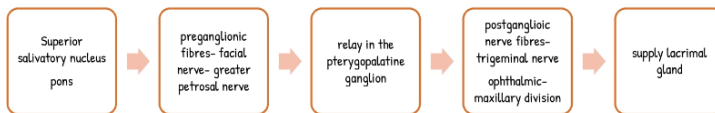
Ciliary ganglion is present between optic nerve (medial aspect) and lateral rectus muscle (lateral aspect)



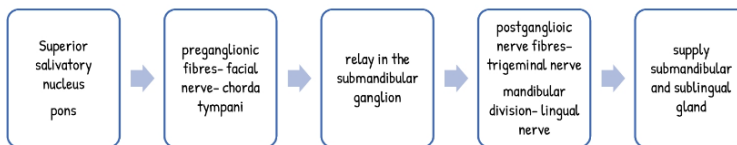
Pterygopalatine Ganglion



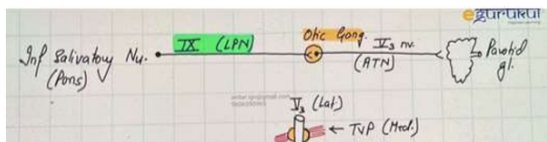
- GPN - Greater petrosal nerve
- PPG - Pterygopalatine ganglion
- SMG - Submandibular ganglion



Submandibular Ganglion



Otic Ganglion



Head, Neck & Face
Topic Notes: 16

Otic ganglion is present between mandibular division (lateral aspect) and tensor veli palatini muscle (medial aspect)

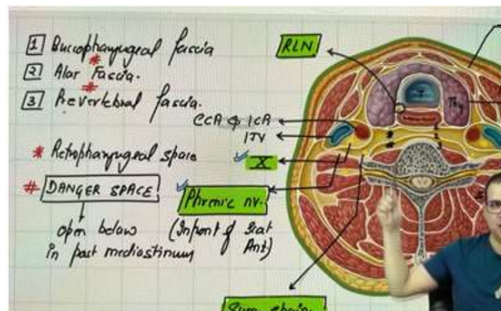
LPN - Lesser petrosal nerve

ATN - Auriculotemporal nerve

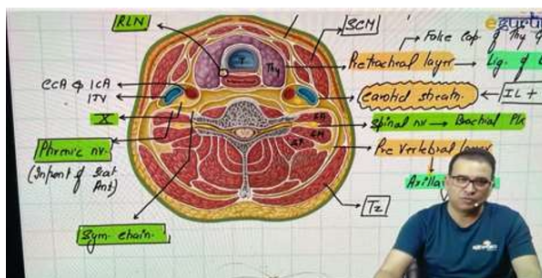


TRANSVERSE SECTION OF NECK

21:00



Investing layer of deep cervical fascia



- RLN - Recurrent Laryngeal Nerve
- CCA - Common Carotid Artery
- ICA - Internal Carotid Artery
- IJV - Internal Jugular Vein
- Nv - Nerve
- Sym. Chain - Sympathetic Chain
- SCM - Sternocleidomastoid Muscle
- Tz - Trapezius

Head, Neck & Face

Topic Notes: 16

SA - Scalenus Anterior

SM - Scalenus Medius

SP - Scalenus Posterior

- Pretracheal Layer :
 - False capsule of thyroid.
 - It also forms the ligament of Berry that suspends the thyroid gland and moves during deglutition. It attaches the thyroid gland to the cricoid cartilage
- Prevertebral Layer :
 - Covers all the vertebral muscles
 - Also forms the axillary sheath
- The carotid sheath is contributed by all the three layers the investing layer pretracheal layer and the prevertebral layer
- Contents of the carotid sheath
 - Common carotid artery
 - Internal carotid artery
 - Internal jugular vein
 - Vagus nerve
- The nerves emerging between the muscles scalenus anterior and scalenus medius are the spinal nerves that form the brachial plexus
- The nerve present in front of scalenus anterior muscle and behind the prevertebral fascia is the phrenic nerve
- The sympathetic chain is present in front of the prevertebral fascia and behind the carotid sheath
- The nerve present in the trachea esophageal groove between the trachea and the esophagus is the recurrent laryngeal nerve

Fascia

- Buccopharyngeal fascia covers the pharyngeal wall and the buccinator muscle
- Alar fascia-cannot be seen in a radiograph
- Prevertebral fascia
- Between Buccopharyngeal fascia and alar fascia is retro pharyngeal space
- Between alar fascia and prevertebral fascia is the danger space
 - Called so because it opens below in the posterior mediastinum
 - And so, the infection can be passed down and cause compression of the structures causing dysphagia

Head, Neck & Face
Topic Notes: 16

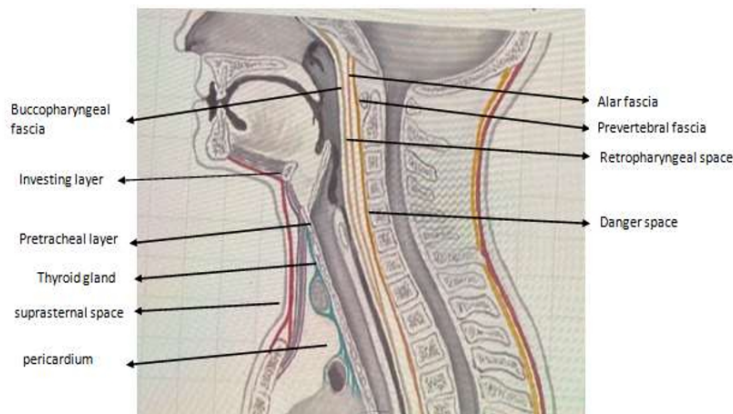
LONGITUDINAL SECTION OF NECK

35:45

INVESTING LAYER - RULE OF 2

41:45

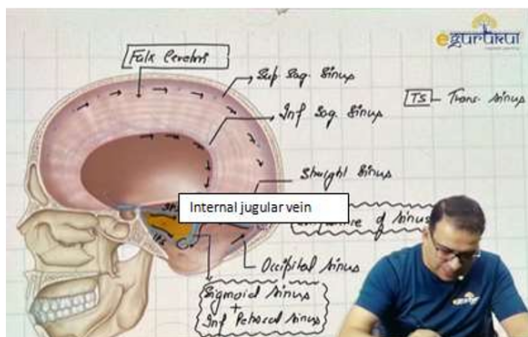
2 muscles	Sternocleidomastoid, Trapezius
2 glands	Parotid and submandibular
2 spaces	Suprasternal, supra clavicular
2 ligaments	Stylomandibular, sphenomandibular
2 pulleys	Digastric, omohyoid



DURAL FOLDS

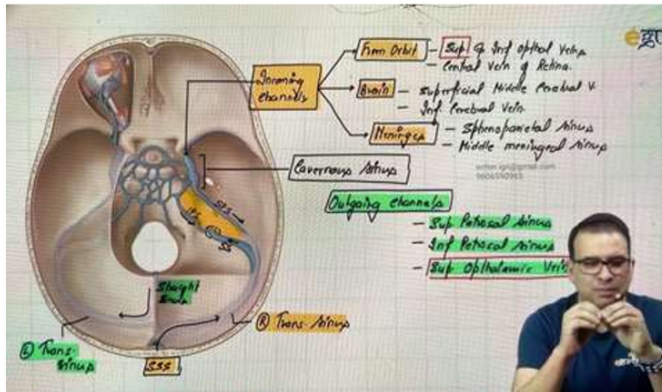
42:55

- 1) Falx cerebri - Falx means sickle shaped
- 2) Falx cerebelli
- 3) Tentorium cerebelli
- 4) Diaphragma sellae



TRANSVERSE SECTION OF THE SKULL

50:50



- SPS - Superior Petrosal Sinus
- IPS - Inferior Petrosal Sinus
- SSS - Superior Sagittal Sinus

Cavernous sinus

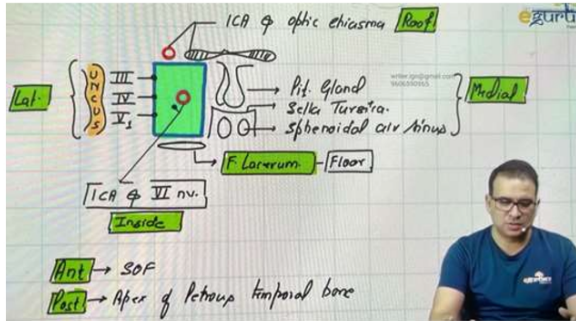
- Incoming channels
 - From orbit
 - Superior and inferior ophthalmic veins
 - Central vein of retina
 - From brain
 - Superficial middle cerebral veins
 - Inferior cerebral vein
 - From meninges
 - Sphenoparietal sinus
 - Middle meningeal sinus
- Outgoing channels
 - Superior petrosal sinus
 - Inferior petrosal sinus
 - Superior ophthalmic veins

Head, Neck & Face

Topic Notes: 16

RELATIONSHIP OF CAVERNOUS SINUS

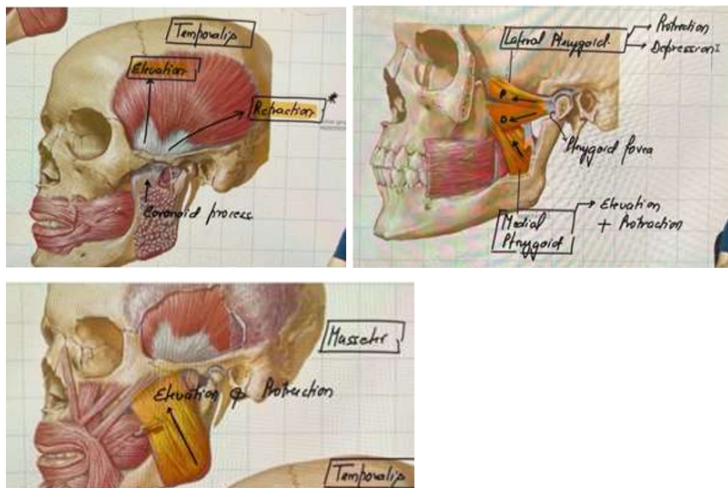
59:00



- Lat - Lateral
- ICA - Internal carotid artery
- Pit. Gland - Pituitary gland
- F. lacerum - Foramen lacerum
- Ant - Anterior
- Post - Posterior
- SOF - Superior orbital fissure

MUSCLES OF MASTICATION

01:07:10



← Head, Neck & Face

Topic Notes: 16

Muscle	Origin	Insertion	Innervation	Function
Masseter	Zygomatic arch and maxillary process of the zygomatic bone	Lateral surface of ramus of mandible	Masseteric nerve from the anterior trunk of the mandibular nerve (V3)	Elevation of mandible
Temporalis	Bone of temporal fossa and temporal fascia	Coronoid process of mandible and anterior margin of ramus of mandible almost to last molar tooth	Deep temporal nerves from the anterior trunk of the mandibular nerve (V3)	Elevation and retraction of the mandible
Medial pterygoid	Deep head – medial surface of lateral plate of pterygoid process and pyramidal process of palatine bone; superficial head – tuberosity of the maxilla and pyramidal process of palatine bone	Medial surface of mandible near angle	Nerve to medial pterygoid from the mandibular nerve (V3)	Elevation and side-to-side movements of the mandible
Lateral pterygoid	Upper head – roof of infratemporal fossa; lower head – lateral surface of lateral plate of the pterygoid process	Capsule to temporomandibular joint in the region of attachment to the articular disc and to the pterygoid fovea on the neck of the mandible	Nerve to lateral pterygoid directly from the anterior trunk of the mandibular nerve (V3) or from the buccal branch	Protrusion and side-to-side movements of the mandible

- Medial pterygoid is the only muscle of mastication that is supplied by the trunk of the mandibular nerve
- Remaining muscles are supplied by the anterior division of the mandibular nerve

MUSCLES OF PHARYNX

01:18:07

Pharyngeal wall

Longitudinal muscles - Inside

- Stylopharyngeus - Any muscle supplied by glossopharyngeal nerve - From styloid process
- Palatopharyngeus supplied by vago accessory complex - Origin from palate
- Salpingopharyngeus supplied by vago accessory complex - Origin Eustachian tube

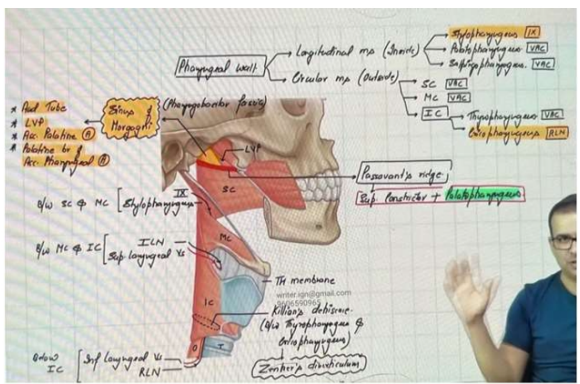
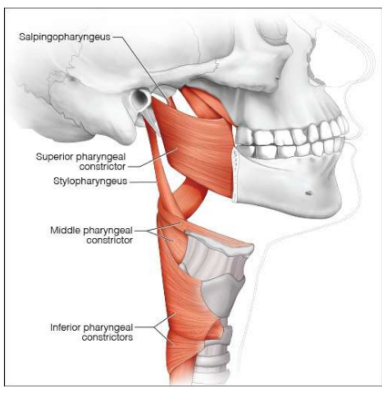
Circular muscle - Outside

- Superior constrictor - Vago accessory complex
- Middle constrictor - Vago accessory complex
- inferior constrictor
 - Thyropharyngeus - Vago accessory complex
 - Cricopharyngeus - Recurrent laryngeal nerve

Head, Neck & Face

Topic Notes: 16

MUSCLES OF PHARYNX				
NAME	ORIGIN	INSERTION	ACTION	NERVE
Superior constrictor	Medial pterygoid plate, pterygoid hamulus, pterygoamandibular raphe, mylohyoid line	Pharyngeal tubercle, pharyngeal raphe	Constricts the pharynx	Vagus nerve through the pharyngeal plexus
Middle constrictor	Greater & lesser horns of hyoid bone & Stylohyoid ligament	pharyngeal raphe	Constricts the pharynx	Vagus nerve through the pharyngeal plexus
Inferior constrictor	Arch of cricoid cartilage & oblique line of thyroid cartilage	pharyngeal raphe	Constricts the pharynx	Vagus nerve through the pharyngeal plexus
Longitudinal				
Salpingopharyngeus	Cartilage of auditory tube	Lateral wall of pharynx	Elevate the pharynx in swallowing	Vagus nerve through the pharyngeal plexus
Palatopharyngeus	Posterior border of the hard palate & palatine aponeurosis	Thyroid cartilage, lateral wall of pharynx	Elevate the pharynx in swallowing	Vagus nerve through the pharyngeal plexus
Stylopharyngeus	Styloid process	Thyroid cartilage	Elevate the pharynx in swallowing	Glossopharyngeal nerve



Head, Neck & Face

Topic Notes: 16

B/W - Between

SC - Superior Constrictor

MC - Middle Constrictor

IC - Inferior Constrictor

ILN - Internal Laryngeal Nerve

RLN - Recurrent Laryngeal Nerve

Sup. Laryngeal vs - Superior Laryngeal Vessels

Sinus of Morgagni

Structures passing through this sinus are :

1. Cartilaginous part of auditory tube (Aud. Tube)
2. Levator veli palatini muscle (LVP)
3. Ascending palatine artery (Asc. Palatine (A))
4. Palatine branch of ascending pharyngeal artery (Palatine br of Asc. Pharyngeal A)
5. Tensor veli palatini muscle

Killian's dehiscence

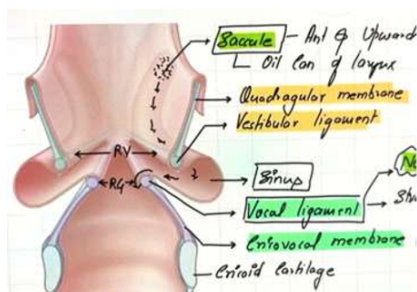
- The dehiscence area of muscular weakness is a triangular region formed between the two pharyngeal and esophageal muscles, the inferior pharyngeal constrictor and the cricopharyngeus.
- Zenker's diverticulum (posterior hypopharyngeal diverticulum) is an acquired mucosal herniation through an area of anatomic weakness - Killian's dehiscence

Passavant's ridge

- Mucosal Ridge raised by the fibres of palatopharyngeus.
- It encircles posterior and lateral walls of nasopharyngeal isthmus
- It opposes soft palate during the act of swallowing

LARYNX

01:34:35



Head, Neck & Face

Topic Notes: 16

- Two ligaments of the larynx
 - Lower thickening of the quadrangular membrane- vestibular ligament- False vocal cord
 - Upper thickening of the crico vocal membrane (conus elasticus) - Vocal ligament
- Sinus of the larynx
 - The mucous membrane which is lining the larynx from inside forms a small diverticulum on the outer aspect
 - This pouch or diverticulum is called as the sinus of the larynx
- Saccule of the larynx
 - Sinus of larynx extends upwards to form the saccule
 - Saccule is an anterior and upward extension of sinus which is having loads of mucus gland.
 - The mucus which is secreted here will run downward into the sinus and then on the vocal cord
 - Because there are no mucus glands present on the vocal cords, it depends on the saccule of the larynx.
 - It is actually called as the oil can of larynx because it is loaded with mucous glands
- The space between the false vocal cords is called as the rima vestibuli (RV)
- The space between the true vocal cords is called as rima glottidis (RG)

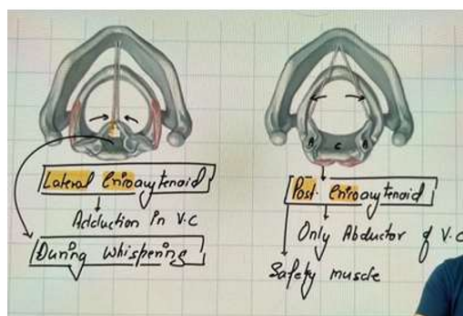
MUSCLES OF THE LARYNX

1. Posterior cricoarytenoid
 - a. Muscle which is attached to the arytenoid cartilage and the posterior surface of cricoid cartilage is called as posterior cricoarytenoid
 - b. When this muscle contracts vocal processes will move away from each other pulling the vocal cords also away from each other. This causes the abduction in the vocal cord.
 - c. This muscle is the only abductor of the vocal cord. Therefore, it is also called as the safety muscle of larynx because this is the only muscle which keeps the airway patent
2. Lateral cricoarytenoid
 - a. Muscle which is attached to the arytenoid cartilage and the lateral surface of cricoid cartilage is called as lateral cricoarytenoid

Head, Neck & Face

Topic Notes: 16

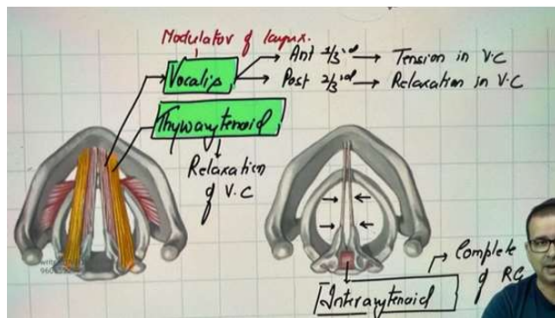
- b. When this muscle contracts vocal processes move towards each other thereby closing the vocal cords. This causes the adduction in the vocal cord.
- c. Even after the vocal cords close, there is space between the arytenoid cartilages. The air can come out from this space between the two cartilages. This is used in whispering



3. Interarytenoid
 - a. The muscle between the arytenoid cartilages is called interarytenoid muscle
 - b. When this muscle contracts, it closes the vocal cord and also pulls the arytenoid cartilages towards each other horizontally
 - c. So, there is adduction of vocal cord and also complete closure of rima glottidis
4. Thyroarytenoid
 - a. This muscle is originating from the inner surface of thyroid cartilage and attaches to the lateral surface of arytenoid cartilage. This is called as thyroarytenoid
 - b. When this muscle contracts, the arytenoid cartilage and thyroid cartilage come close to each other
 - c. So, the vocal cord will be relaxed. Therefore, thyroarytenoid muscle is responsible for relaxation of vocal cords
5. Vocalis
 - a. Modification of thyroarytenoid muscle is vocalis muscle
 - b. It has a dual function
 - c. It runs with the vocal cord in the anterior 1/3rd and is attached to the vocal cords and causes tension in vocal cord
 - d. But in posterior 2/3rd, it runs parallel to vocal cord and not attached to vocal cord so causes relaxation of vocal cord
 - e. Therefore, called as modulator of larynx

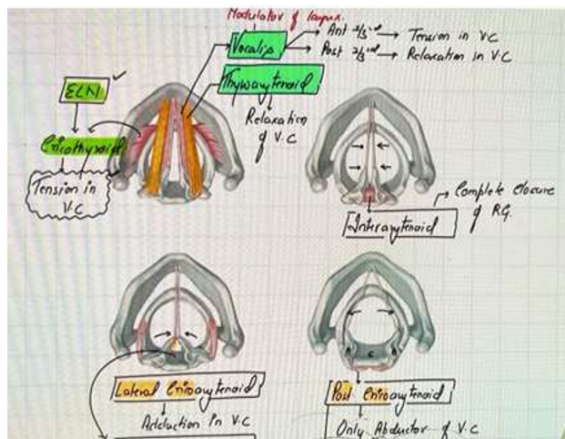
Head, Neck & Face

Topic Notes: 16



6. Cricothyroid muscle

- a. When this muscle contracts, it bends the thyroid cartilage forwards the distance between the thyroid and arytenoid increases and vocal cord is stretched
- b. Causes tension in vocal cord. Hence called tuning fork of larynx
- c. This is the only muscle of larynx supplied by the external laryngeal nerve
- d. All the other muscles are supplied by recurrent laryngeal nerve



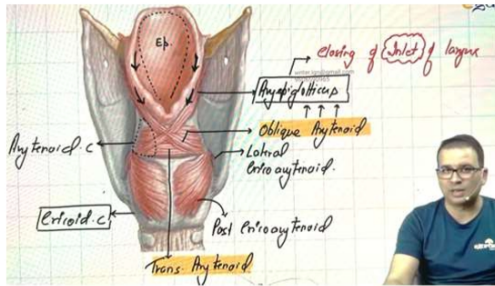
POSTERIOR VIEW OF LARYNX

01:51:35

- The interarytenoid muscles have transverse and oblique fibres
- Aryepiglotticus is an extension of oblique arytenoids
- It is responsible for closing of inlet of larynx

Head, Neck & Face

Topic Notes: 16



C - Cartilage

Ep - Epiglottis

MIDDLE CRANIAL FOSSA

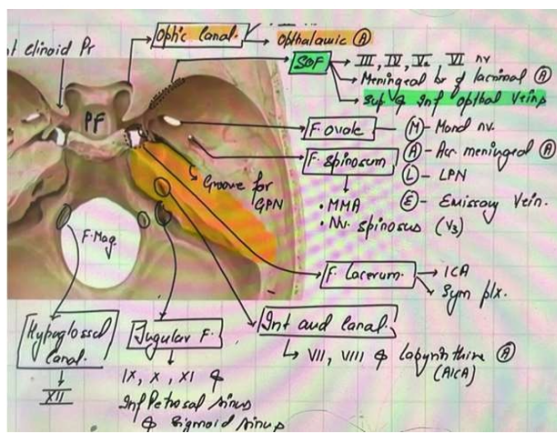
01:56:48

1. Anterior clinoid process- from lesser wing of sphenoid
2. Medial and inferior to anterior clinoid process is optic canal- optic nerve and ophthalmic artery
3. Inferior and lateral to optic canal is superior orbital fissure -
 - a. The superior orbital fissure opens anteriorly into the orbit. It transmits the oculomotor nerve (CN III), trochlear nerve (CN IV), ophthalmic branch of the trigeminal nerve (CN V1), abducens nerve (CN VI),
 - b. Superior and inferior ophthalmic veins and sympathetic fibres.
 - c. Meningeal branch of lacrimal artery
4. The foramen ovale opens into the infratemporal fossa, transmitting
 - a. M - Mandibular branch of the trigeminal nerve (CN V3)
 - b. A - Accessory meningeal artery.
 - c. L - Lesser petrosal nerve
 - d. E - Emissary vein
5. The foramen spinosum also opens into the infratemporal fossa. It transmits the middle meningeal artery, middle meningeal vein, and a meningeal branch of CN V3 - nervus spinosus
6. Foramen lacerum transmits internal carotid artery and accompanying sympathetic venous plexus
7. Groove for greater petrosal nerve
8. Petrous part of temporal bone- foramen on the medial side- internal auditory canal- facial nerve, vestibulocochlear nerve, labyrinthine vessels

Head, Neck & Face

Topic Notes: 16

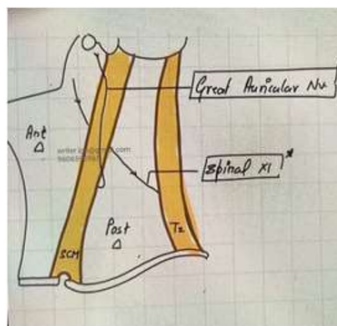
- 9. Jugular foramen transmits glossopharyngeal nerve, vagus nerve, accessory nerve and inferior petrosal sinus, sigmoid sinus
- 10. Foramen magnum
- 11. Hypoglossal canal - Seen in the anterolateral part of Foramen magnum - Transmits hypoglossal nerve



MIDDLE CRANIAL FOSSA

TRIANGLES OF THE NECK

02:08:00



- Spinal accessory nerve-supplies sternocleidomastoid muscle and trapezius
- Present in the roof of posterior triangle-great auricular nerve (c2-c3)
 - Passes superiorly over sternocleidomastoid muscle
 - Runs with external jugular vein
 - Supplies lobule of the ear
 - Supplies skin over the angle of the mandible and lower part of parotid

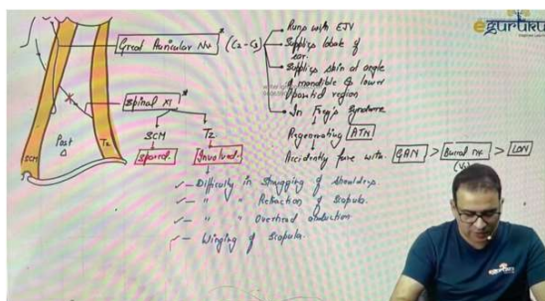
Head, Neck & Face

Topic Notes: 16

- During parotidectomy the auriculotemporal nerve is damaged and during regeneration the nerve fibers fuse accidentally with other nerves especially greater auricular nerve
- Less frequently buccal nerve and lesser occipital nerve depending on the nerve involved the area of sweating changes in Frey's syndrome

MCQs:

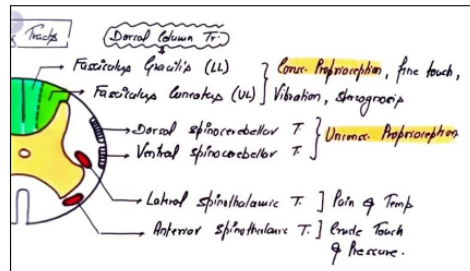
1. After parotidectomy the patient noticed there is sensory loss on his face while shaving, the nerve involved is
 - Ans : Great auricular nerve
2. The most common nerve to be injured during parotidectomy
 - Ans : Auriculotemporal nerve
3. Which muscle is spared when the spinal accessory nerve is injured in the posterior triangle
 - Ans : Sternocleidomastoid
4. Which muscle is involved when the spinal accessory nerve is injured in the posterior triangle?
 - Ans: Trapezius
5. Injury to spinal accessory nerve causes
 - Difficulty in shrugging of the shoulders,
 - Difficulty in retraction of scapula,
 - Difficulty in overhead abduction
 - Mild winging of scapula
6. Tumor in the Meckel's cave involves the trigeminal ganglion and hence the trigeminal nerve is also involved that leads to sensory loss of the face except the angle of the mandible and lower parotid region because it is supplied by
 - Ans : Great auricular nerve



Neuroanatomy

ASCENDING TRACTS

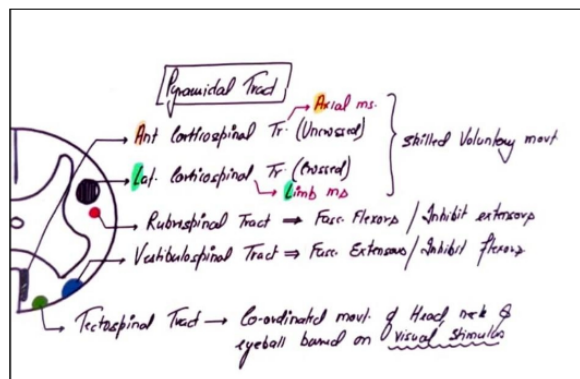
01:24



- Dorsal column tract:
 - Fasciculus Gracilis (LL) } Conscious proprioception, fine touch, vibration and stereognosis
 - Fasciculus Cuneatus (UL) }
- Dorsal spinocerebellar tract } Unconscious proprioception
- Ventral spinocerebellar tract }
- Lateral spinothalamic tract: Pain and temperature
- Anterior spinothalamic tract: Crude touch and pressure

DESCENDING TRACTS

06:42



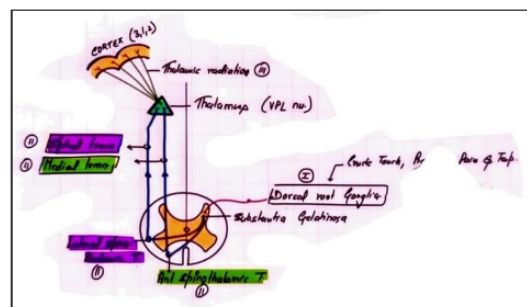
- Pyramidal tract:
 - Anterior corticospinal tract (uncrossed) → Axial muscles } Skilled voluntary movement
 - Lateral corticospinal tract (crossed) → Limb muscles }

- Rubrospinal tract: Facilitating flexors and inhibits extensors
- Vestibulospinal tract: Facilitate extensors and inhibits flexors → Maintains posture
- Tectospinal tract: Coordinated movement of head, neck and eyeball based on visual stimulus.

SPINOTHALAMIC TRACT

15:05

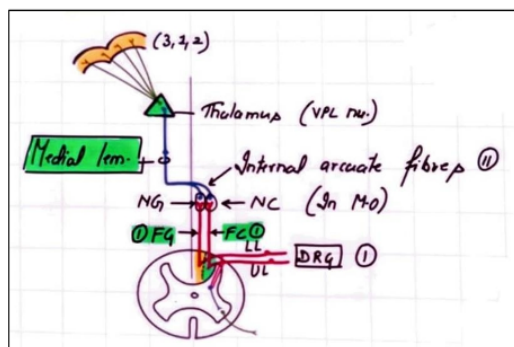
- 1st order neuron: Dorsal Root Ganglion (DRG)
- Crude touch, pressure, pain and temperature → DRG
- Lateral and anterior spinothalamic tract: 2nd order neurons cross to contralateral side
- Lateral spinothalamic tract ascends up as the Spinal lemniscus. (Any lemniscus is contralateral)
- Anterior spinothalamic tract ascends up as the Medial lemniscus.
- 3rd order neuron: Thalamic radiation (Part of corona radiata)



DORSAL COLUMN TRACT

22:15

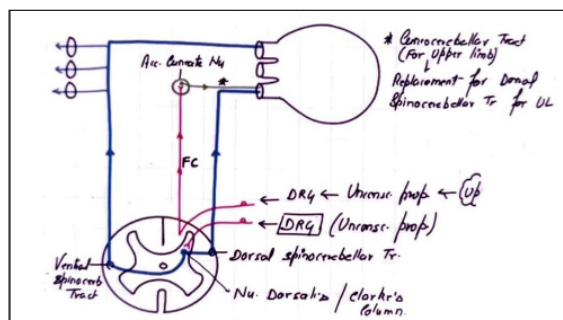
- DRG (1st order neuron) brings the information directly into white matter of spinal cord.
- Lower limb → Fasciculus gracilis
- Upper limb → Fasciculus cuneatus
- Nucleus gracilis and nucleus cuneatus are present in medulla oblongata.
- 2nd order neurons: Internal arcuate fibres → crosses to contralateral side and forms Medial Lemniscus. Anterior spinothalamic tract also forms medial lemniscus which also carries touch and pressure sensations.



SPINOCEREBELLAR TRACT

29:50

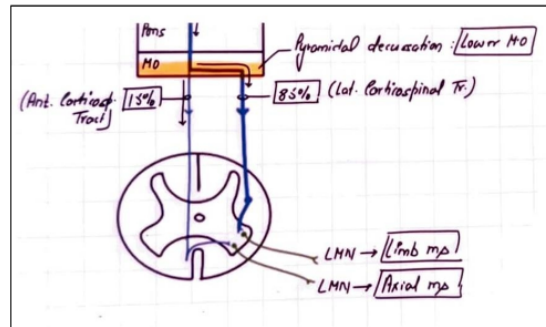
- Dorsal spinocerebellar tract does not carry unconscious proprioception from upper limb. DRG directly enters the white matter and joins fasciculus cuneatus to carry unconscious proprioception information from upper limb. → Accessory Nucleus Cuneatus. → Cuneocerebellar tract (only for upper limb) - Replacement for dorsal spinocerebellar tract.
- Injury to fasciculus gracilis: loss of conscious proprioception from lower limb
- Injury to fasciculus cuneatus: loss of conscious and unconscious proprioception from upper limb



PYRAMIDAL TRACT

40:44

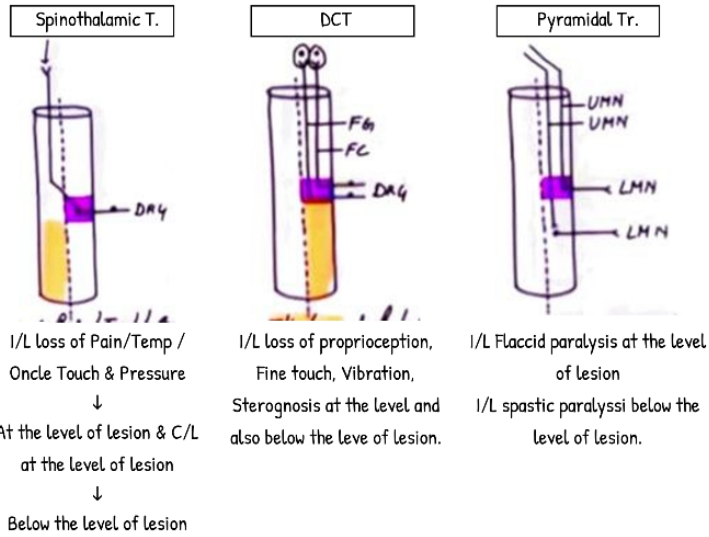
- Pyramidal decussation is present in lower part of Medulla Oblongata. It forms Lateral corticospinal tract (85%) → Limb muscles
- Uncross fibres form the anterior corticospinal tract (15%). These fibres also decussate at the level of spinal cord. → Axial muscles



BROWN SEQUARD SYNDROME

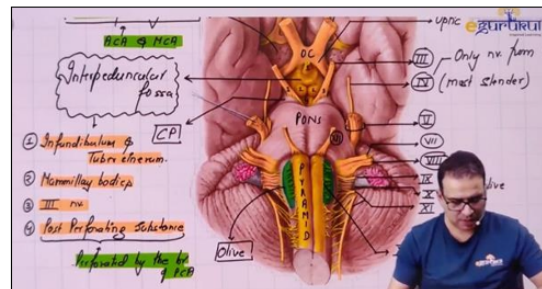
45:59

1. Spinothalamic tract:
 - Decussates at 2-3 levels above entry level
 - Ipsilateral loss of pain/temperature/crude touch and pressure at the level of lesion
 - Contralateral loss of pain/temperature/crude touch below the level of lesion
2. Dorsal Column tract:
 - Ipsilateral loss of proprioception, fine touch, vibration and stereognosis at the level and also below the level of lesion.
3. Spinocerebellar tract:
 - Ipsilateral loss of unconscious proprioception at the level and below the level of lesion.
4. Pyramidal tract:
 - At level of lesion: LMN lesion
 - Below the level of lesion: UMN lesion
 - Ipsilateral flaccid paralysis at the level of lesion and ipsilateral spastic paralysis below the level of lesion.



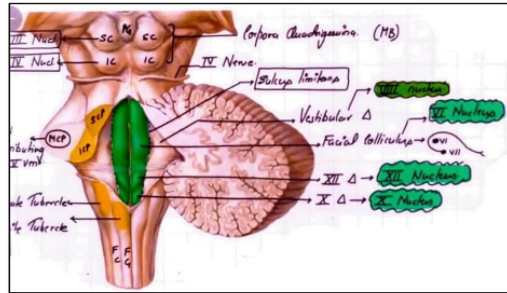
BRAINSTEM

59:24

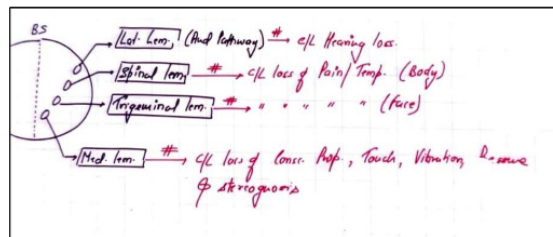


Ventral part of Brainstem

- Contents of interpeduncular fossa:
 1. Infundibulum and Tuber cinerum
 2. Mamillary bodies
 3. Oculomotor nerve
 4. Post perforating substance: perforated by branches of posterior cerebellar artery
- Anterior perforating substance is perforated by ACA & MCA.

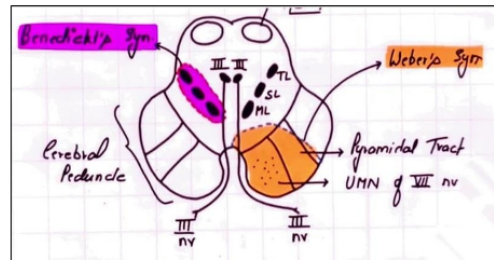


- Middle cerebellar peduncle does not contribute to IV ventricle boundary.
- Injury to facial colliculus → LMNL of VII nerve



MIDBRAIN SYNDROMES

01:28:58

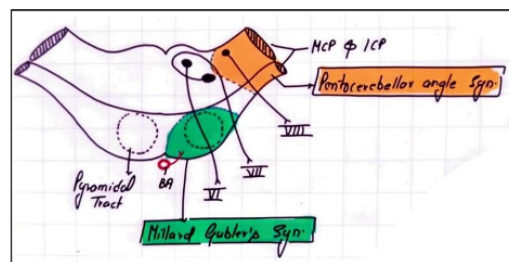


- Benedek's syndrome:
 - ML → Contralateral loss of conscious proprioception, touch, vibration, pressure and stereognosis
 - SL → Contralateral loss of pain and temperature from body
 - TL → Contralateral loss of pain and temperature from face
 - III nerve → Ipsilateral Ptosis, Ipsilateral divergent squint, loss of Light and accommodation reflex

- Weber's syndrome:
 - III nerve → Ipsilateral Ptosis, Ipsilateral divergent squint, loss of light and accommodation reflex
 - UMN lesion facial nerve → Contralateral paralysis of lower face
 - Pyramidal tract → Contralateral hemiplegia

PONTINE SYNDROME

01:39:11



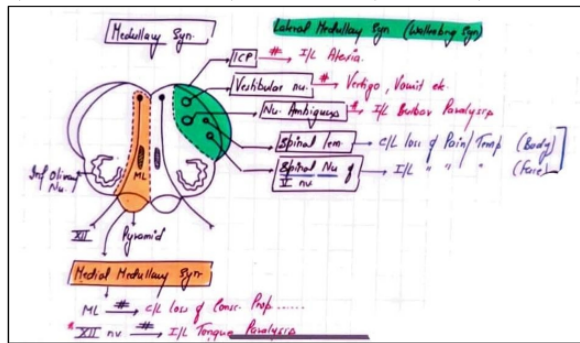
- Millard Gubler's syndrome aka Abducent Alternating Hemiplegia:
 - VI nerve: Ipsilateral medial squint
 - VII nerve: Ipsilateral facial paralysis
 - Pyramidal tract: Contralateral hemiplegia
- Pontocerebellar angle syndrome:
 - VII nerve: Ipsilateral facial
 - VIII nerve: Ipsilateral progressive deafness
 - MCP/ICP: Ipsilateral ataxia

MEDULLARY SYNDROMES

01:49:30

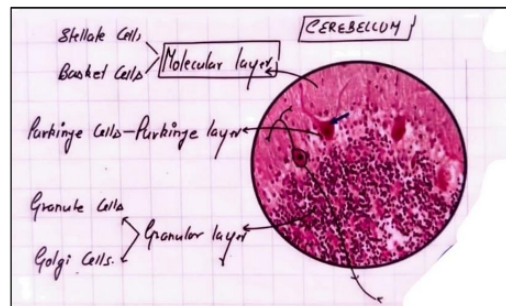
- Medial Medullary Syndromes:
 - ML → Contralateral loss of conscious proprioception
 - XII nerve → Ipsilateral tongue paralysis
 - Pyramid → Contralateral hemiplegia
- Lateral Medullary Syndromes:
 - ICP → Ipsilateral alexia
 - Vestibular nuclei → Vertigo, vomiting
 - Nucleus ambiguus → Ipsilateral bulbar paralysis
 - Spinal lemniscus: Contralateral loss of pain and temperature from body

- Spinal nucleus of V nerve: Ipsilateral loss of pain and temperature from face

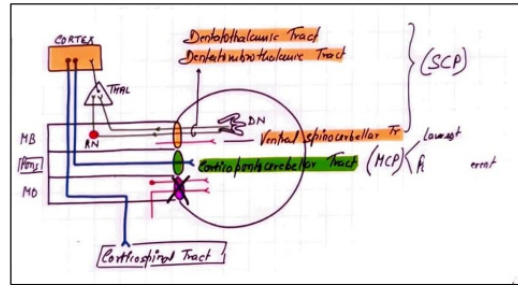


CEREBELLUM

01:58:35



- Only granule cells are excitatory in nature, rest all are inhibitory.
- Purkinje cells are the only cells which form efferent from cortex.
- Purkinje cells project into deep cerebellar nuclei:
 - Dentate nucleus: Largest nucleus → Nucleus of neocerebellum
 - Emboliform nucleus
 - Fastigial nucleus
 - Globose nucleus
- Deep cerebellar nuclei → Efferent out of cerebellum



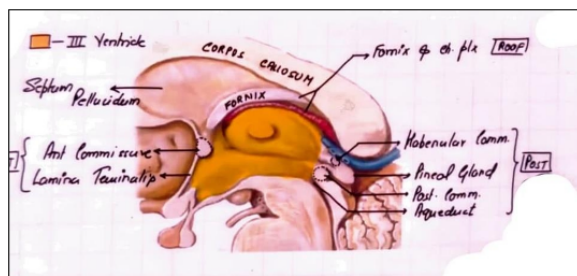
- Corticopontocerebellar tract (MCP):
 - Largest peduncle
 - Purely afferent

- 2 main feedback tracts:
 1. Dentatothalamic tract
 2. Dentatorubrothalamic tract

SECTIONS

02:14:15

- Sagittal Section:
 - Third ventricle:
 - Roof: Fornix and choroid plexus
 - Anterior wall: Anterior commissure and Lamina terminalis
 - Posterior wall: Pineal gland, Habenular commissure, Posterior commissure and aqueduct of Sylvius



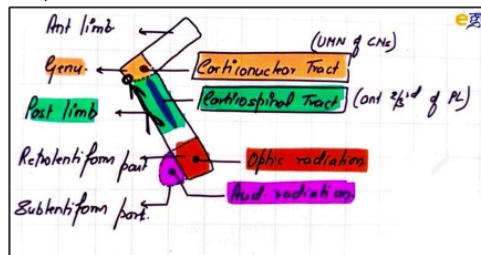
- Floor: Optic chiasma, Infundibulum, Mammillary body, posterior perforating substance, Tegmentum

○ Lateral wall: Thalamus and Hypothalamus

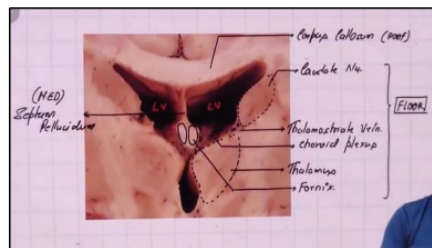
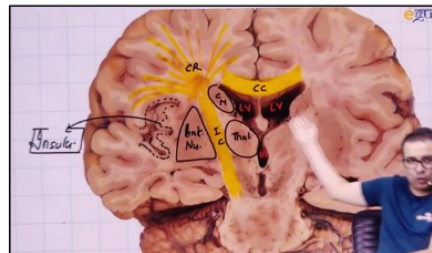
• Transverse Section:



▪ Internal capsule:



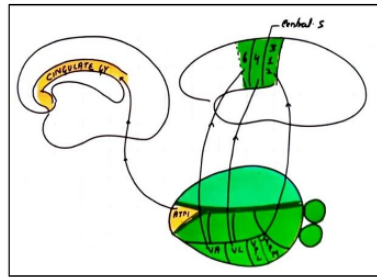
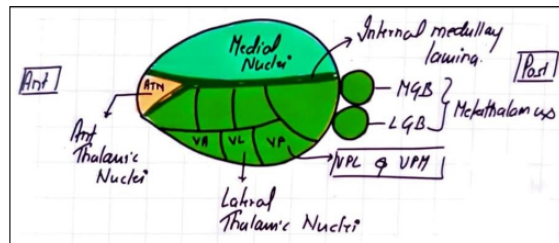
• Coronal Section:



- Fornix originates in hippocampus and terminates in mammillary body.

THALAMUS

02:43:02



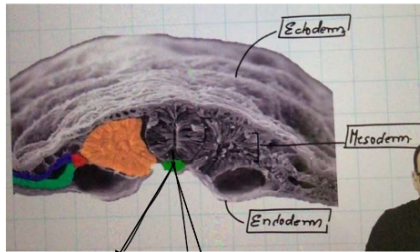
- VPM - Mouth/Face - Trigeminal Lemniscus
- VPL - Lower body - Medial Lemniscus and Spinal Lemniscus
- VL - Dentatothalamic and Dentatorubrothalamic tract
- VA - Pallidothalamic tract
- ATN - Mammillothalamic tract (Part of Papez Circuit) (Mamillary body)

Embryology

Topic Notes: 5

Embryology

Embryology



Notochord Neural tube

- Mesoderm is divided into 3 parts → Paraxial mesoderm
 - Intermediate mesoderm
 - Intraembryonic coelom
 - Somatopleuric lateral plate mesoderm
 - Splauchopleuric lateral plate mesoderm
- Intermediate mesoderm will give rise to urogenital system
- Paraxial mesoderm : gives rise to somites (D20-D30)
 - ↓
 - This is called somite period
- Primitive somites are usually 42-44 pairs
 - ↓
 - Definitive somites - 36-38 pairs

SOMITES

07:42

- Somite is divided into 3 parts
 - ↓
 - Dermatome → Gives rise to dermis of back
 - Sclerotome → Gives rise to axial skeleton
 - Myotome(skeletal muscle)
- Epiauxial myotome (epimere)

↓

Gives rise to erector spinae

Hypoaxial myotome (Hypomere)

↓

Rest all

↓

Limb muscles

Intercostal muscles

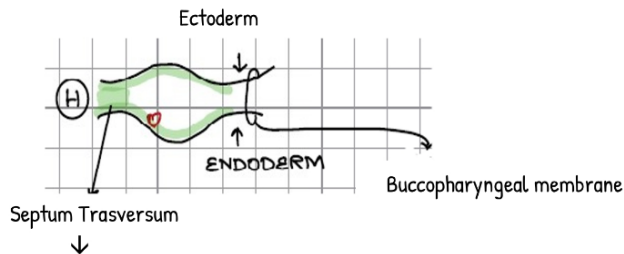
Abdominal muscles

LATERAL PLATE MESODERM

12:57

- | | |
|--|--|
| Somatopleuric | Splanchnic |
| ↓ | ↓ |
| <ol style="list-style-type: none"> 1. Gives rise to all parietal layers 2. Dermis of front and limbs 3. Appendicular skeleton | <ol style="list-style-type: none"> 1. All visceral layers 2. Smooth muscles 3. Cardiac muscles (at the cranial end) |

- Smooth muscles - Exceptions →
 - 1) Pupillary muscles
 - ↓
 - Derived from neuroectoderm
 - 2) Ciliaris from neural crest cells
 - 3) Smooth muscles of ascending aorta, PT and coronary artery → Derived from neural crest cells
 - 4) Smooth, mammary gland and myoepithelial cells (surface ectoderm)



↓
Undifferentiated lateral plate mesoderm at the cranial end of embryo

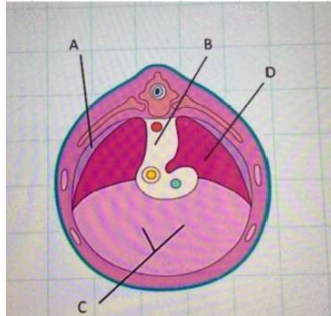
- Most cranial structure in the embryonic plate before folding

Septum transversum derivatives

1. Central tendon
2. Fibrous pericardium
3. Liver stroma (including kupffer cells)
4. Ventral mesogastrium

DEVELOPMENT OF DIAPHRAGM

26:40



- Diaphragm is developed from C) Septum transversum
↓
Gives rise to central tendon of diaphragm
- A) Cervical myotome → Muscular part of diaphragm
- B) Dorsal mesentery of oesophagus → Gives rise to crus of diaphragm
- C) Pleuoperitoneal membrane → Failure of formatin
↓
CDH

PHARYNGEAL ARCHES

30:43



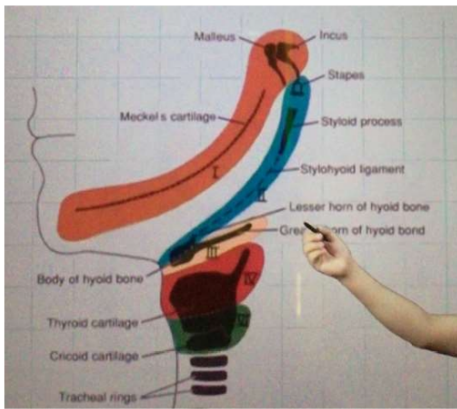
- Pharyngeal arches are covered by ectoderm outside and endoderm inside
- In the oropharyngeal arch, we have mesoderm
- Cervical sinus is usually obliterated
↓
If persists → Can give risk to branchial cyst

- I Cleft → Only cleft present
Gives rise to External auditory canal
Outer layer of tympanic membrane

Embryology

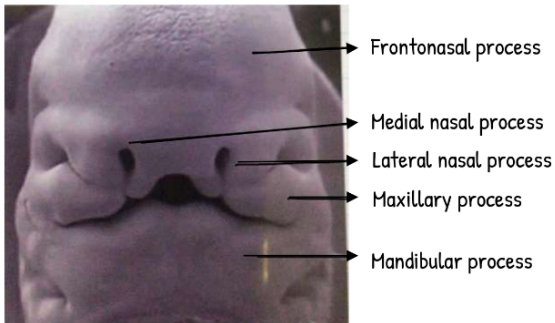
Topic Notes: 5

- I Pouch : Inner layer of TM + Middle ear cavity + Auditory tube + Mastoid antrum
- II Pouch : Gives rise to palatine tonsil
- III Pouch : Thymus + Inferior parathyroid gland
- IV Pouch : Superior parathyroid gland
- Remnant of V Pouch - Ultimobranchial body
 - Invaded by neural crest cells
 - Gives rise to parafollicular C cells



Meckel's Cartilage : Gives rise to malleus and incus anterior part of mandible

- Stapes except foot plate - Derived from second pharyngeal arch
- II arch } Gives rise to laryngeal cartilages
- VI arch }

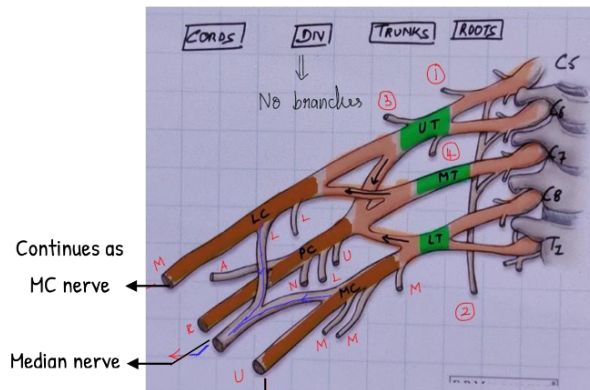


← **Embryology**
Topic Notes: 5

- Lower lip → Derived from mandible process
- Upper lip → Derived from maxillary process + Medial nasal process
- Ala → Lateral nasal process
 1. Non fusion of both medial nasal process
 - Midline cleft UL
 2. Non fusion of medial nasal process with maxillary process
 - Unilateral cleft UL
 3. Maxillary process fails to fuse with lateral nasal process
 - Oblique facial cleft (No nasolacrimal duct)

Limbs

Upper Limbs Brachial Plexus



Cons named based on relation to axillary artery

- Past to artery = Posterior cord
- Lateral to artery = Lateral cord
- Medial to artery = Medial cord

Branches

Roots

- Dorsal scapular nerve
 - Levator scapulae
 - Rhomboid major
 - Rhomboid minor

- Long thoracic nerve - Serratus Anterior

Injury
↓
"Winging of Scapula"

Trunk

- Suprascapular nerve
 - Suprascapular → Rotator cuff muscles
 - Infraspinatus → for 0-15° of abduction of shoulder

4. Nerve to subclavius → Subclavius muscle
 ↓
 Gives branch called accessory phrenic nerve
 ↓
 Joins the phrenic nerve

Lateral cord

- L = Lateral root of median nerve
 - M = Musculocutaneous nerve
 - L = Lateral pectoral nerve
-
- ```

 graph LR
 A[Lateral root of median nerve] --> B[Biceps]
 C[Musculocutaneous nerve] --> D[Brachialis]
 E[Lateral pectoral nerve] --> F[Coracobrachialis]

```

Musculocutaneous nerve → Continues as lateral cutaneous nerve of forearm

Lateral pectoral nerve → Pierces pectoral fascia  
 ↓  
 Supplies pectoralis major

**Posterior Cord**

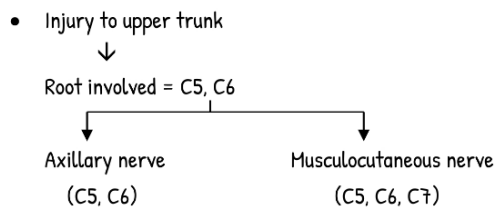
- U = Upper subscapular nerve → Subscapularis
- L = Lower subscapular nerve → Subscapularis + Teres major
- N = Nerve to Latissimus dorsi
- A = Axillary nerve → Deltoid, Teres minor
- R = Radial nerve

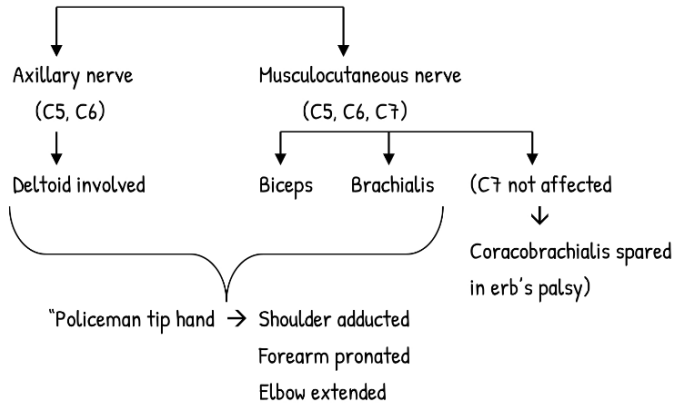
**Medial Cord**

- M = Medial root of median nerve
- M = Medial pectoral nerve → Pectoralis minor + Pectoralis major
- M = Medial cutaneous nerve of arm
- M = Medial cutaneous nerve of forearm
- U = Ulnar nerve

**ERB'S PALSY**

21:29





**KLUMPKE'S PALSY**

26:43

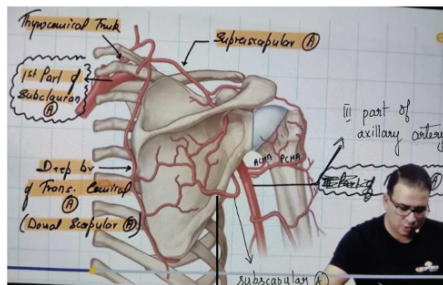
- Injury to lower trunk
  - ↓
  - Root involved = C8, T1
  - ↓
  - Median ulnar nerve
  - ↓
  - Supply intrinsic muscles of hand
  - ↓
  - Hyperextension at metacarpal joint and flexion at interphalangeal joint
  - ↓
  - "Claw hand"
- T1 → Injured → Horner's Syndrome

**SCAPULAR ANASTOMOSIS**

32:26

- Between 1<sup>st</sup> part of subclavian artery and 3<sup>rd</sup> part of axillary artery

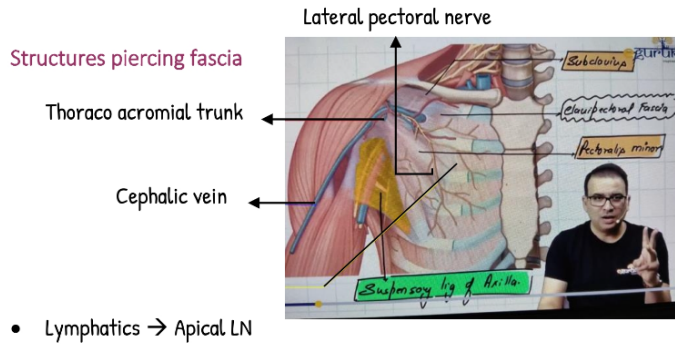
Arteries forming anastomosis



Circumflex scapular artery

**CLAVIPECTORAL FASCIA**

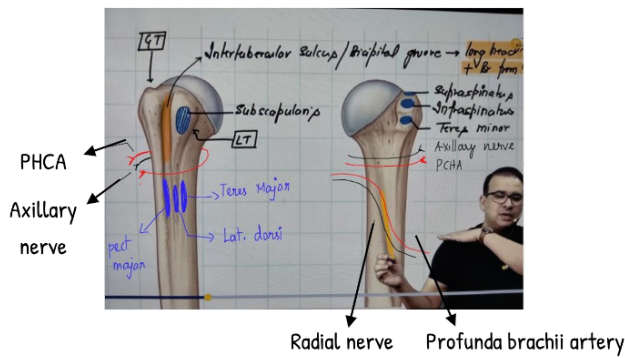
37:12



- Lymphatics → Apical LN

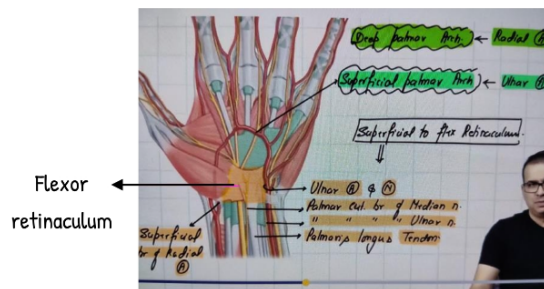
**OSTEOLOGY OF UPPER LIMB**

46:32



- GT = Greater tubercle
  - LT = Lesser tubercle
  - Radial nerve
  - PFA
  - PCHA = Posterior circumflex humeral artery
- } Runs in spiral (radial groove)

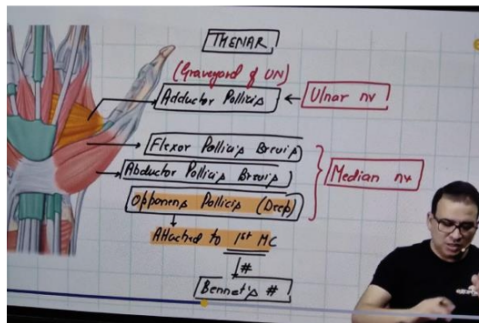
**Flexor retinaculum**



**MUSCLES OF HAND**

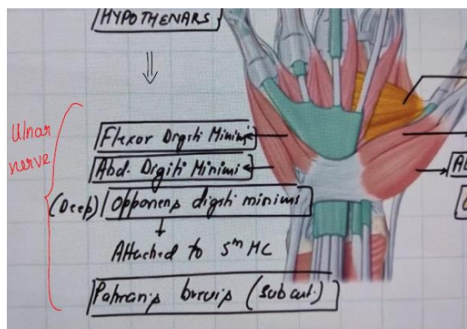
58:22

**Thenar muscles**

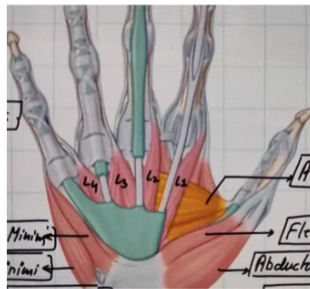


- Opponens pollicis only muscle attached to Metacarpal  
↓  
1<sup>st</sup> metacarpal fracture  
↓  
Bennet's fracture  
↓  
Opposition of thumb affected
- Ulnar nerve ends by supplying adductor pollicis  
↓  
Hence known as graveyard of UN

**Hypothenar muscles**



- More deep is opponens digiti minimi
- More superficial is Palmaris brevis  
↓  
Subcutaneous muscle



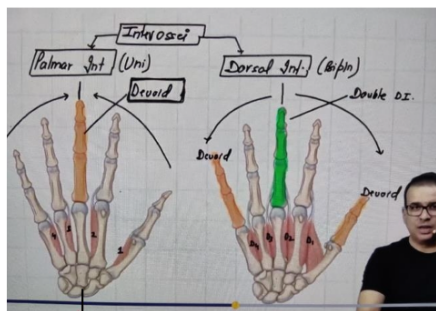
**LUMBRICALS**

01:06:52

- Origin from flexor digitorum profundus tendon
- L1 } Unipinnate = By median nerve
- L2 }
- L3 } Bipinnate = By ulnar nerve
- L4 }
- Function
  - Flexion at metacarpal joint
  - Extension at interphalangeal joint

**INTEROSSEI**

01:09:40



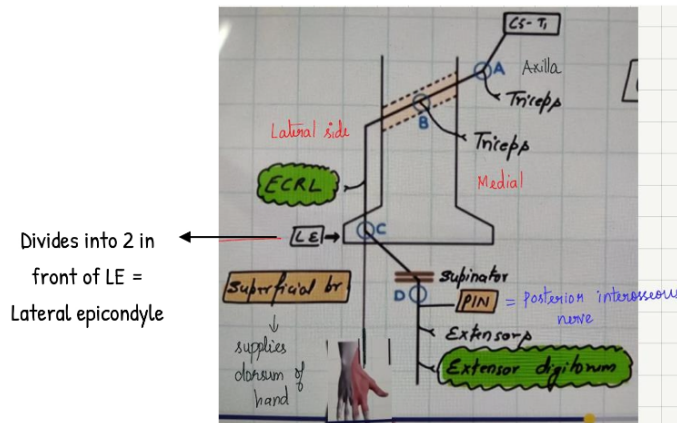
Check by "Card test"

- Palmar interossei = Unipinnate = Adduction
- Dorsal interossei = Bipinnate = Abduction
- Middle finger = Has double dorsal interossei  
= Devoid of palmar interossei
- All supplied by ulnar nv.

# Limbs

Topic Notes: 13

## Radial Nerve



ECRL = Extensor carpi radialis longus

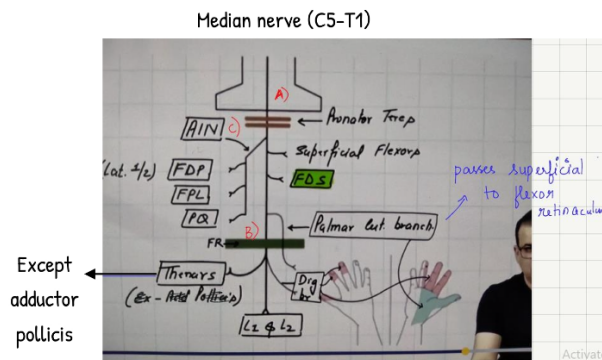
- Supplies 2/3<sup>rd</sup> of dorsum of hand = Except nail bed
  - ↓
  - Supplied by median nerve
- A) Nerve compressed in point (A) (in Dia)
  - "Crutch Palsy"
  - Extended elbow
  - Wrist drop (WD)
  - Finger drop (FD)
  - Sensory loss
- B) Nerve compressed in spiral groove
  - "Saturday night palsy"
  - Weakness in elbow extension
  - Wrist drop
  - Finger drop
  - Sensory loss
- C) Nerve injured at LE (Lateral epicondylar fracture)
  - Finger drop
  - Sensory loss
  - ECRL spared = No wrist drop



- D) PIN injury = Radial head fracture
  - o No WD
  - o FD
  - o Superficial branch spared = No sensory loss

**MEDIAN NERVE**

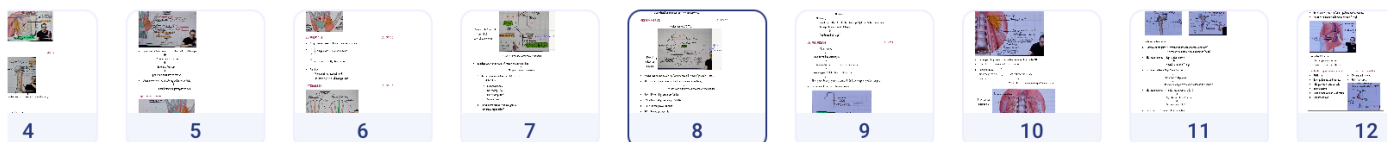
01:30:20



- Median nerve leaves cubital fossa between 2 heads of pronator teres
- Then gives a branch = Anterior interosseous nerve (AIN)
  - ↓
  - Passes deep but ant to interosseous membrane
- FDP = Flexor digitorum profundus
- FDS = Flexor digitorum superficialis
- FPL = Flexor pollicis longus
- PQ = Pronator quadratus

- A) Higher injury
  - o Ape thumb deformity
  - o FDS and lat 1/2 of FDP involved
    - ↓
    - "Pointing index finger"
    - (While making fist)
- B) Carpal tunnel syndrome
  - o Ape thumb deformity
  - o No pointing index finger

Pinch to zoom



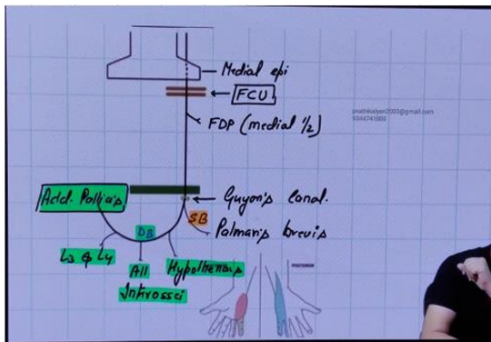
- Sensory loss seen only on finger and not on palms
  - ↓
  - As palmar cutaneous branch passes superficial
  - ↓
  - It is spared
- C) AIN injury
  - Inability to flex distal interphalangeal joint of index finger and interphalangeal joint of thumb
    - ↓
    - "Collapsed OK sign"

**ULNAR NERVE**

01:47:34

- Ulnar nerve
  - ↓
  - Deep to medial epicondyle
  - ↓
  - Goes between FCU = Flexor carpi ulnaris
  - ↓
  - Passes superficial to flexor retinaculum
  - ↓
  - Then goes through Guyon's canal → Ends by supplying adductor pollicis

- Superficial branch = Palmaris brevis



**ULNAR PARADOX**

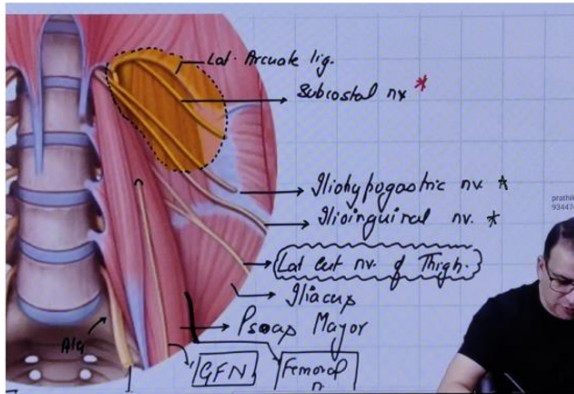
01:53:39

- ↓
- In higher injury, there will be less prominent claw hand as FDP is also involved
- ↓
- Distal IP joints cannot flex

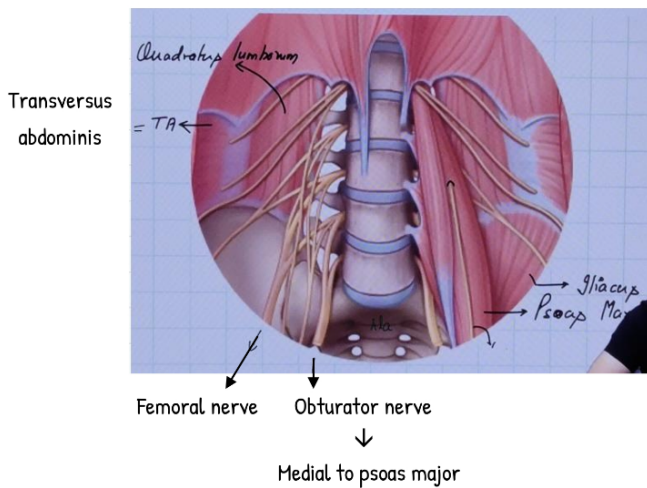
**LOWER LIMB**

01:55:07

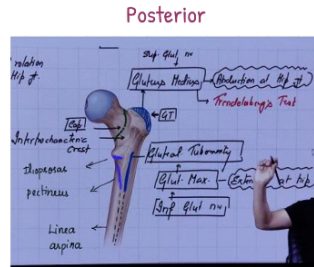
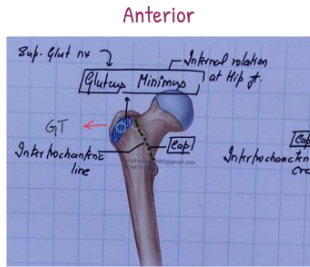
Post abdominal wall and structures



- Nerve piercing psoas major = Genitofemoral nerve (GFN)
- Lateral to psoas major = Femoral nerve
- Ilioinguinal nv. }  
Ilio hypogastric nv. } Post. relation to kidney  
Subcostal nv. } ↓  
Vulnerable to damage during kidney surgery



**Osteology**

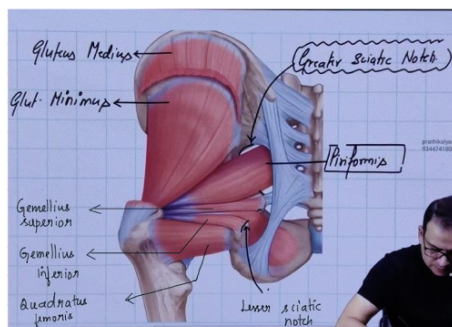


GT = Greater trochanter

- Capsule of hip joint = Attached to intertrochantric line (ant)  
= Attached to base of neck of femur (post)
- Gluteus minimus = Sup. Gluteal nerve  
↓  
Medial rotation of thigh
- Gluteus medius = Sup. Gluteal nerve  
↓  
Abduction of Hip joint  
↓  
Trendelenburg's test done to assess this muscle
- Gluteus maximus = To Gluteal Tuberosity (GT)  
↓  
By inferior gluteal nerve  
↓  
For extension of hip
- Pectineus = Attached at petinate line

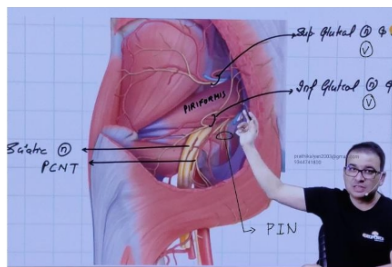
**GLUTEAL REGION**

02:14:13



← **Limbs**  
Topic Notes: 13

- Piriformis = Comes out of greater sciatic notch
- Obturator internus = Comes out of lesser sciatic notch
- Above piriformis = Superior gluteal nerves, vessels
- Below piriformis = Inferior gluteal nerves, vessels
- PCNT = Posterior cutaneous nerve of thigh

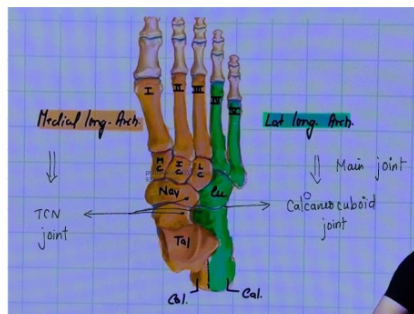


P = Pudendal nerve  
I = Internal pudendal vessel  
N = Nerve to obturator internus

| Contents of greater sciatic notch                                                                                                                                                                                                        | Lesser sciatic notch                                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Piriformis</li> <li>• Sup. gluteal nv and vessels</li> <li>• Inf. gluteal nv and vessels</li> <li>• Sciatic nerve</li> <li>• Post cutaneous nerve of thigh</li> <li>• PIN structures</li> </ul> | <ul style="list-style-type: none"> <li>• Obturator internus</li> <li>• PIN structures</li> </ul> |

**FOOT**

02:26:44



## ← Limbs

Topic Notes: 13

Cal = Calcaneum

Tal = Talus

Nav = Navicular

MC = Medial cuneiform = Longest

IC = Intermediate cuneiform

LC = Lateral cuneiform = Shortest

II metatarsal = Longest = March fracture

TCN joint = Talocalcaneonavicular joint



Ball and socket joint

Calcaneocuboid joint = Saddle joint

Talus = Summit for medial arch

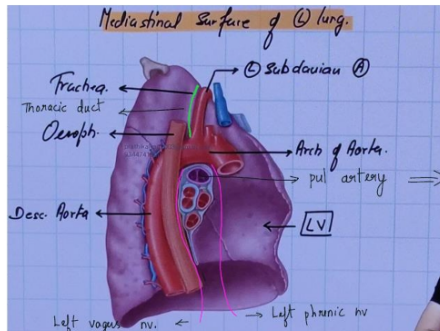
Calcaneum = Summit for lateral arch

| Slings for Medial arch<br>Invertors                                                                                                    | Slings of Lateral arch<br>Everters                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Tibialis anterior</li> <li>• Tibialis posterior</li> <li>• Flexor digitorum longus</li> </ul> | <ul style="list-style-type: none"> <li>• Peroneus longus</li> <li>• Peroneous brevis</li> </ul> |

# Viscera

## Lung

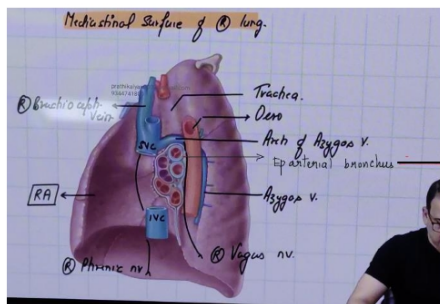
### Mediastinal surface of left lung



Highest structure in root of left lung

### MEDIASTINAL SURFACE OF RIGHT LUNG

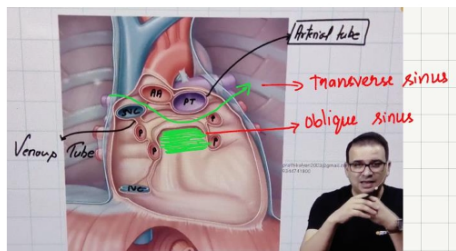
07:30



Highest structure in root of right lung

### PERICARDIAL SINUSES

10:34



### Transverse sinus



Between arterial and venous



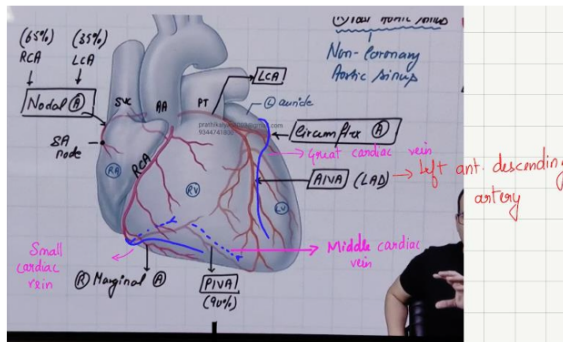
Can be used to ligate great vessels (AA and PT) in cardiac surgery

AA = Ascending aorta  
PT = Pulmonary trunk

**Oblique sinus**  
↓  
Blind space behind atrium (Left)  
↓  
To provide expansion for atrium without compressing oesophagus

**CORONARY ARTERY**

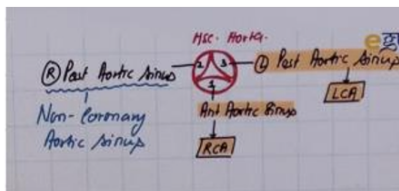
16:40



Posterior inter ventricular artery

(90%) Given by RCA = Right coronary dominant  
Given by LCA = Left coronary dominant

- Ant aortic sinus = Gives origin to right coronary artery
- Left post aortic sinus = Gives rise to left coronary artery
- Right post aortic sinus = Non - coronary sinus

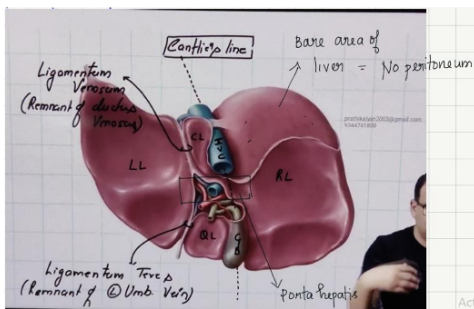


- Great cardiac vein = Runs with LAD, Circumflex artery
- Small cardiac vein = Runs with marginal artery  
↓  
Also with RCA for some distance

- Middle cardiac vein = With PIVA

**INFERIOR SURFACE OF LIVER**

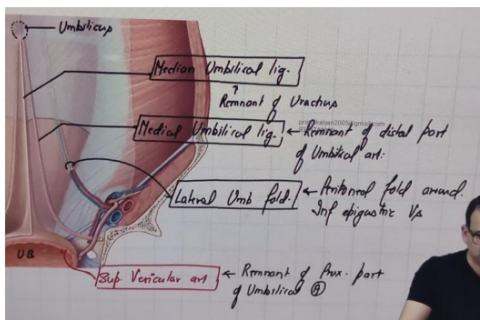
29:27



- RL = Right lobe
- LL = Left lobe
- QL = Quadrato lobe
- CL = Caudate lobe

**ANTERIOR ABDOMINAL WALL**

36:03



Median umbilical ligament = Remnant of urachus  
 ↓  
 If space not obliterates  
 ↓  
 Urine can go through it and dribble through umbilicus

**TRANSVERSE SECTION OF ABDOMEN**

42:13

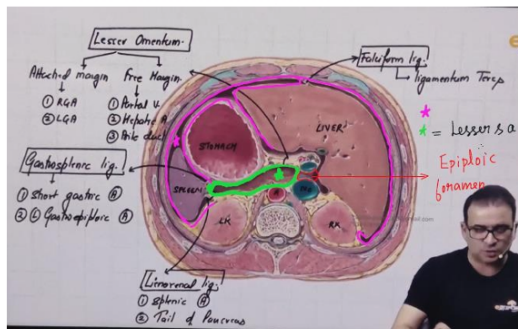
Lienorenal Ligament = Connects spleen and kidney  
 ↓  
 Content = Splenic artery  
 Tail of pancreas

Gastro - Splenic Ligament = Connects spleen to stomach



Content = Short gastric artery

Left gastroepiploic artery



Epiploic foramen (Foramen of Winslow)

- Connects lesser sac and greater sac
- Behind free margin of lesser omentum

Ant relations

- Portal vein
  - Hepatic artery
  - Bile duct
- } Portal triad

Post relation

- IVC
- Right supra renal gland
- Body of 12<sup>th</sup> thoracic vertebrae

Roof

- Caudate lobe

Floor

- 1<sup>st</sup> part of duodenum

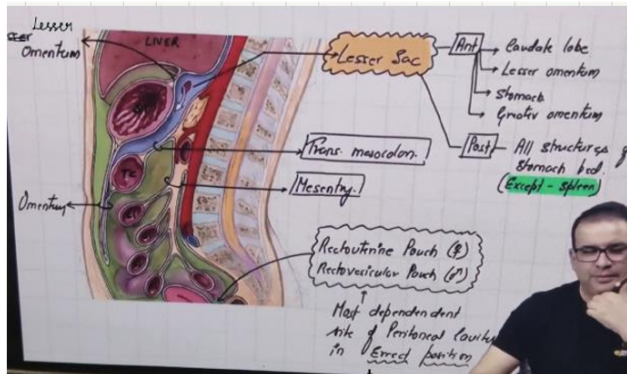
**SAGITTAL SECTION**

55:35

TC = Transverse Colon

SI = Small Intestine

4 layered greater omentum = Lower border is free



In supine position, most dependent part is Hepatorenal pouch of Morrison

**LESSER SAC (OMENTAL BURSA)** 01:00:39

Ant = Liver (caudate lobe)    Post = Stomach bed structures except spleen  
 Greater omentum  
 Stomach  
 Lesser omentum

Way of reaching lesser sac = Ant abdomen  
 ↓  
 Left greater omentum  
 ↓  
 Go through it  
 ↓  
 Reach Lesser Sac ← Cut transverse mesocolon

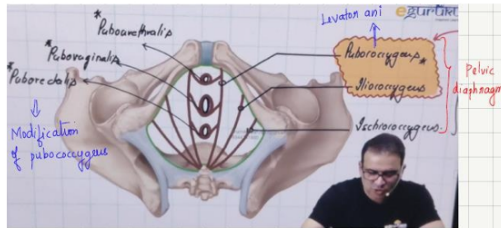
**PERINEUM** 01:06:22

**Boundaries of Perineum**

- Pubis
- Ischiopubic ramus
- Sacrotuberous ligament

**Pelvic Diaphragm**

- Separate pelvic and perineum

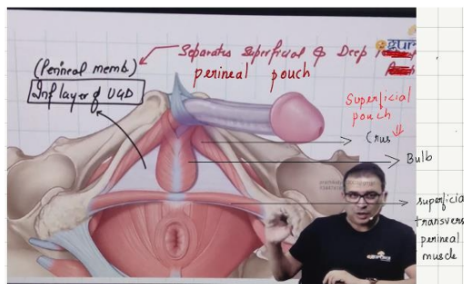


- More superficial to it = Urogenital diaphragm (from lithotomy position)

**UROGENITAL DIAPHRAGM (UGD)**

01:14:32

- 2 layers → Inf layer = Perineal memb

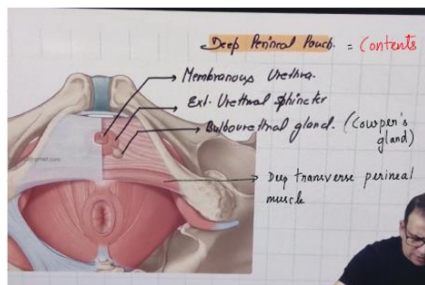


Below perineal memb = Superficial perineal pouch  
Above perineal memb = Deep perineal pouch

**Contents of superficial pouch**

- Crus (or) Ischiocavernosus
- Bulb (or) Bulbospongiosus
- Superficial transverse perineal muscle
- In female = Bartholin's gland

**Contents of deep pouch**

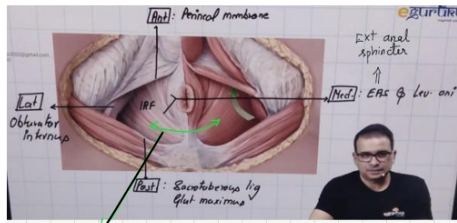


**ANAL TRIANGLE**

01:23:54

- Has ischiorectal fossa (IRF)

**Boundary of IRF**

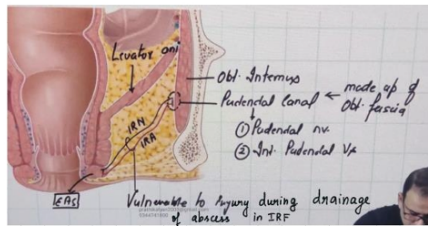


Horse shoe shaped recess = Both fossa communicate through this

**CORONAL SECTION**

01:28:16

- Pudendal canal = Pudendal nerve  
Internal pudendal vessels



IRN = Inf rectal nerve  
IRA = Inf rectal artery

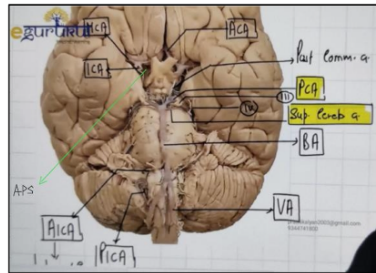
**OSTEOLOGY**

01:33:25

|                    | Cervical                      | Thoracic                    | Lumbar               |
|--------------------|-------------------------------|-----------------------------|----------------------|
|                    |                               |                             |                      |
| Body               | Quadrangular shaped           | Heart shaped                | Kidney shaped        |
| Vertebral foramen  | Large and Triangular          | Small and circular          | Large and Triangular |
| Transverse process | (+) of foramen transversarium | (+) of costal fasetes       | Rudimentary          |
| Spinous process    | Short and bifid               | Long and pointing downwards | Quadrangular shaped  |

## Neuroanatomy Cadaveric Images Discussion

Ventral aspect of brain stem:



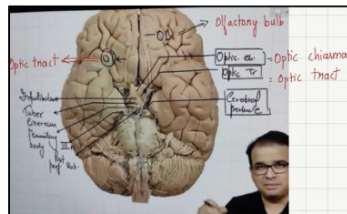
- AICA = Anterior Inferior Cerebral Artery / Labrynthine artery
- PICA = Posterior Inferior Cerebral Artery
- VA = Vertebral Artery
- BA = Basilar Artery
- ACA = Anterior Cerebral Artery
- MCA = Middle Cerebral Artery
- PCA = Posterior Cerebral Artery
- ICA = Internal carotid artery
- Post communicating artery connects ICA and PCA

- APS = Anterior perforating substance
  - ↓
  - Medially has optic chiasma
  - Laterally has beginning of lateral sulcus = Limen Insulae
  - Posteriorly has optic tract
  - ↓
  - Perforated by branches of ACA, MCA

### INTERPEDUNCULAR FOSSA

10:54

- Btw 2 cerebral peduncles



# Neuroanatomy-Cadaveric Images Discussion

Topic Notes: 6

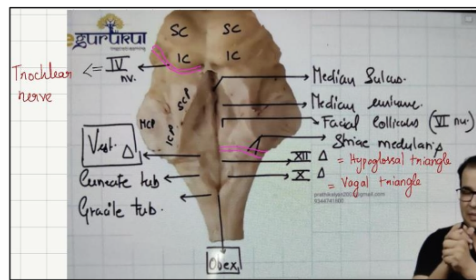
- Interpeduncular fossa → Anteriorly = Optic chiasma  
 → Anterio - laterally = Optic tract  
 → Posterio - laterally = Cerebral peduncle

Contents:

- Infundibulum
- Elevations are the tuber cinerium
- Ball like structures = Mamillary bodies = Comp. of limbic system
- Posterior perforating substance = Perforated by branches of post cerebral artery
- III cranial nerve

## FLOOR OF 4<sup>TH</sup> VENTRICLE

15:48



SC - Superior colliculus

IC = Inferior colliculus

SCP = Superior cerebellar peduncle

ICP = Inferior cerebellar peduncle

MCP = Middle cerebellar peduncle

- Superiorly 4<sup>th</sup> ventricle bounded by SCP, ICP
- 2 tubercle present
  - ↓ Cuneate tubercle } Dorsal column relay in nucleus gracilis, nucleus cuneatus and forms this
  - ↓ Gracile tubercle }
- Also forms boundary of 4<sup>th</sup> ventricle

• Below IC, trochlear nerves comes out

• Lat to Median sulcus, Elevation called Median eminence



On this another elevation = facial colliculus

# Neuroanatomy-Cadaveric Images Discussion

Topic Notes: 6



Due to winding of facial nerve around abducens nucleus (VI nucleus)

Represents ← internal genu of facial nerve.

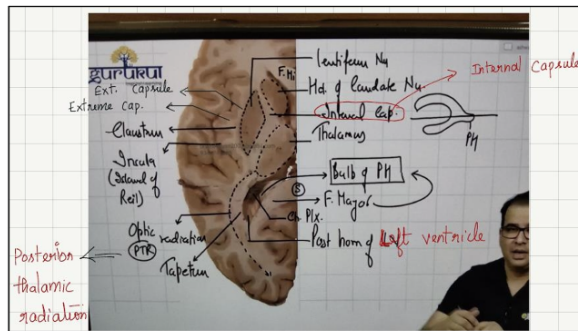
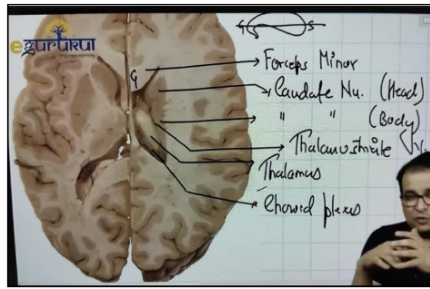
- Lateral to sulcus limitans = Vestibular triangle
- Midline point b/w gracile tubercle = obex

## SECTIONS

27:17

Transverse section:

- Forceps minor = fibres from genu of corpus callosum and goes to frontal lobe

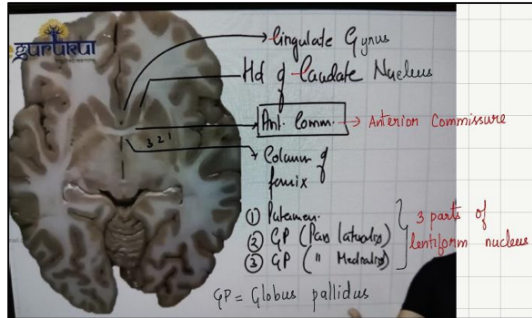


# Neuroanatomy-Cadaveric Images Discussion

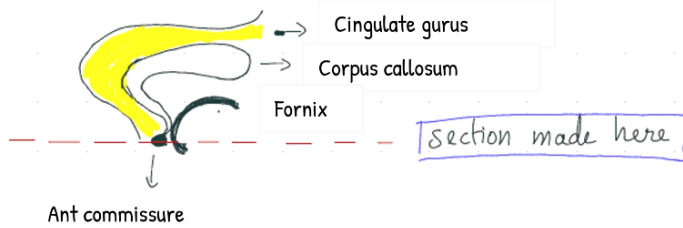
Topic Notes: 6

## TRANSVERSE SECTION AT LOWER LEVEL

40:48



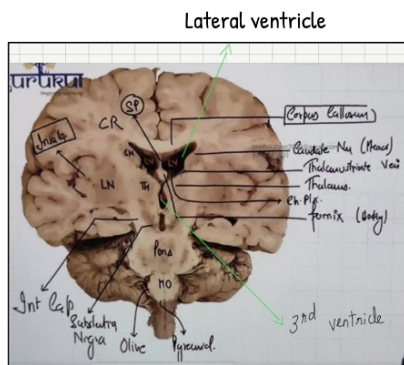
The above section is at the level of



## CORONAL SECTIONS

46:49

- 2 elevations of Medulla oblongata
  - ← Olive
  - ← Pyramid



# ← Neuroanatomy-Cadaveric Images Discussion

Topic Notes: 6

## Lateral ventricle

- Roof = Corpus Callosum
- Medial wall = Septum pellucidum
- Floor of ventricle = Caudate Nucleus, choroid plexus

Thalamostriate vein

Thalamus

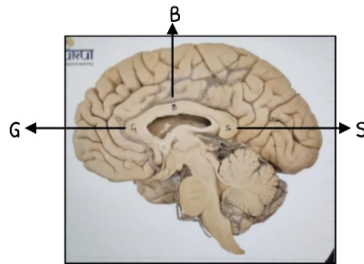
Fornix (Body)



Originates from hippocampus and ends at mammillary body

## SAGITTAL SECTION

54:38



S = Splenium

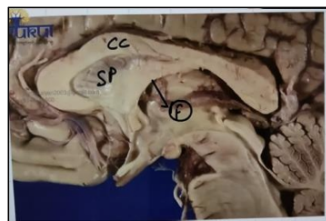
B = Body

G = Genu



Parts of corpus callosum

F = Fornix



SP = Septum pellucidum



Medial wall of Lateral ventricle

← **Neuroanatomy-Cadaveric Images Discussion**

Topic Notes: 6

Ant wall of 3<sup>rd</sup> ventricle

- Column of fornix
- Ant. Commissure
- Lamina terminalis

Roof of 3<sup>rd</sup> ventricle

- Body of fornix
- Choroid plexus

Post wall of 3<sup>rd</sup> ventricle

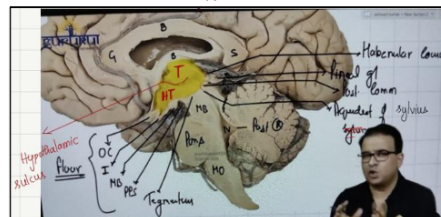
- Habenular commissure
- Pineal gland
- Post. Commissure
- Aqueduct of sylvius

Floor of 3<sup>rd</sup> ventricle

- Optic chiasma
- Infundibulum
- Mammillary body
- Post. Perforating substance
- Tegmentum of mid brain

T = Thalamus

HT = Hypothalamus

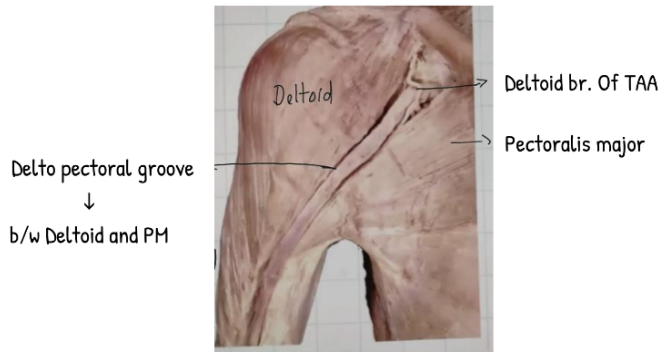


3<sup>rd</sup> ventricle

Upper Limb-Cadaveric Images Discussion

Topic Notes: 6

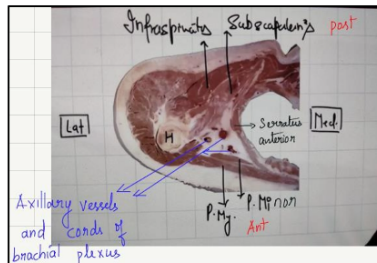
## Upper Limb - Cadaveric Image Discussion



Content of deltopectoral groove

- Cephalic vein
- Deltoid branch of thoraco - acromial artery (TAA)

Transverse section of axilla

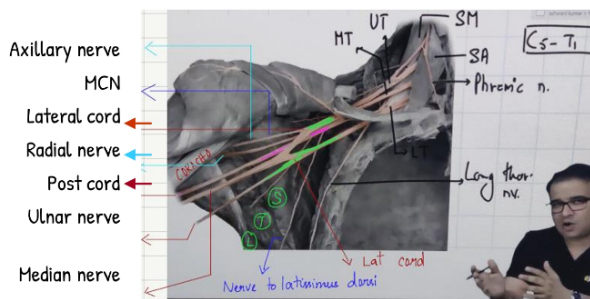


### BRACHIAL PLEXUS

09:01

SM = Scalenus Medius

SA = Scalenus Anterior



# Upper Limb-Cadaveric Images Discussion

Topic Notes: 6

MCN = musculo - cutaneous nerve



Pierces coracobrachialis

Cubital fossa

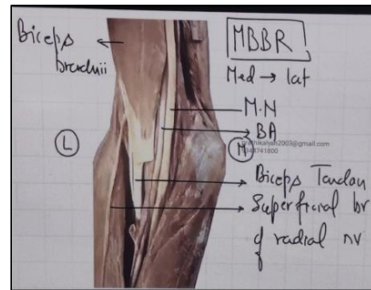
Contents

M = Median nerve

B = Brachial artery

B = Biceps tendon

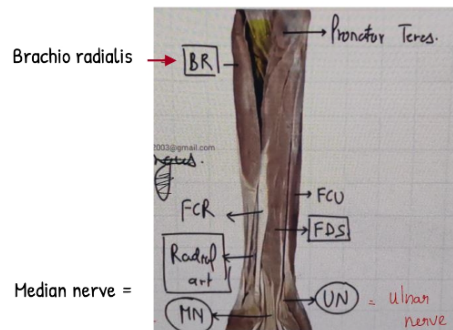
B = Sup. Branch of radial nerve



## ANT COMPARTMENT OF FOREARM

22:20

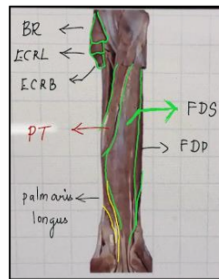
- Sup group = Pronator teres (PT)
- Flexor carpi radialis (FCR)
- Palmaris longus
- Flexor carpi ulnaris (FCU)



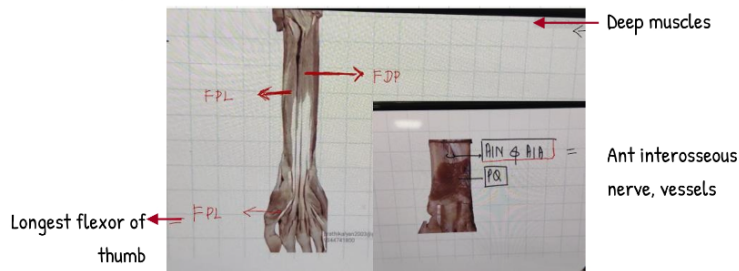
# Upper Limb-Cadaveric Images Discussion

Topic Notes: 6

FCR removed,  
 ECRL = Extensor carpi radialis longus } on lateral side  
 ECRB = Extensor carpi radialis brevis }



FDS removed,

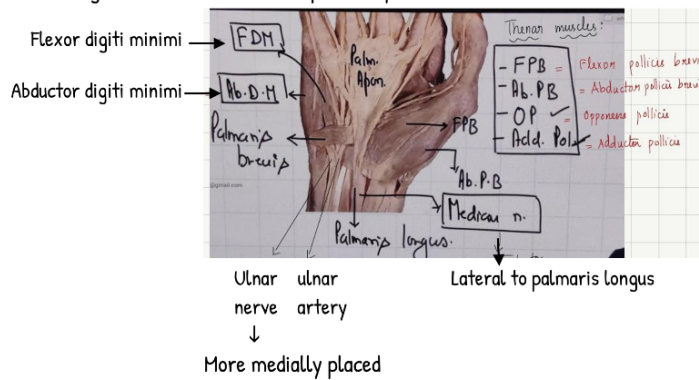


FDP = Flexor digitorum profundus  
 FPL = Flexor pollicis longus  
 PQ = Pronator quadratus [Deepest]

## HAND

36:23

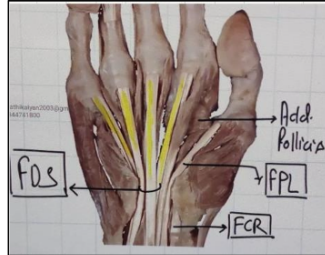
Palmaris longus tendon → fans out as palmar aponeurosis



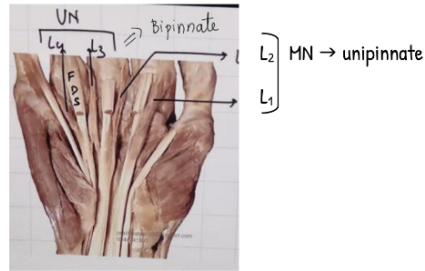
# Upper Limb-Cadaveric Images Discussion

Topic Notes: 6

Flexor retinaculum removed,



FDS tendon removed,



All these tendons removed,

Palmar interossei:



Palmar Interossei (3-4) - (Unipinnate)



For adduction of fingers



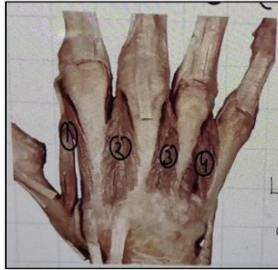
Middle finger has no palmar interossei

# Upper Limb-Cadaveric Images Discussion

Topic Notes: 6

Dorsal interossei

Dorsal int. - (4) (Bipinnate)



↓  
Abduction of fingers

↓  
Little finger has no dorsal interossei

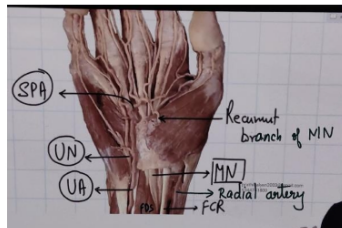
Nerves, Vessels

Superficially → Deep branch of ulnar nerve cannot be seen

↓

So, it is ulnar artery

Superficial palmar arch =

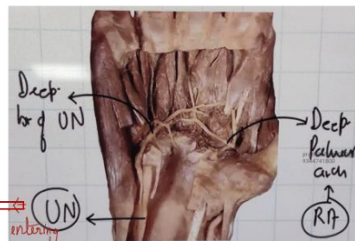


All thenar muscles removed

FDS, FDP, SPA all removed

↓

Deeper section



Structure which is entering from medial side and forming an arch = ulnar nerve

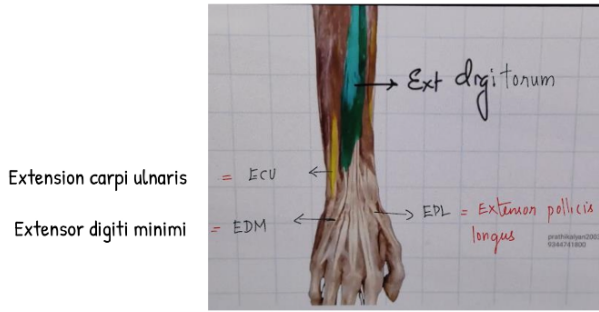
→ Structure which enters through 1<sup>st</sup> web space = Deep palmar arch from radial artery

# Upper Limb-Cadaveric Images Discussion

Topic Notes: 6

## POSTERIOR COMPARTMENT OF FOREARM

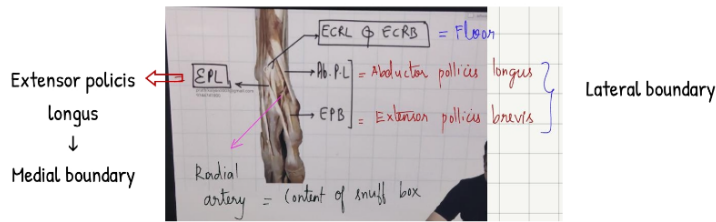
01:00:20



Ext digitorum removed,



Anatomical snuff box

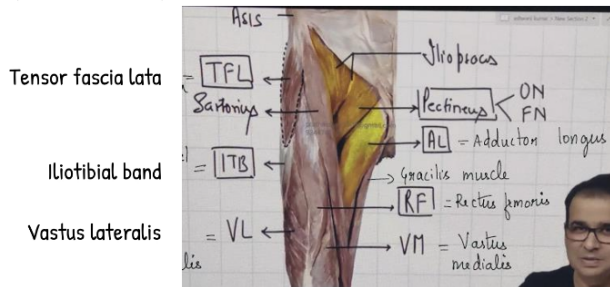


# Lower Limb-Cadaveric Images Discussion

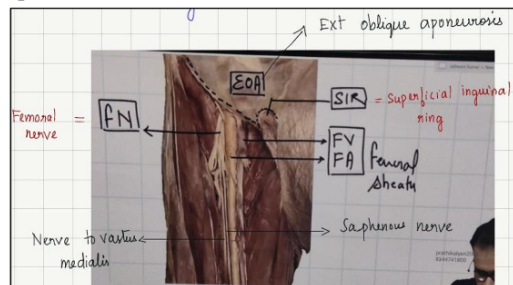
Topic Notes: 9

## Lower Limb Cadaveric Image Discussion

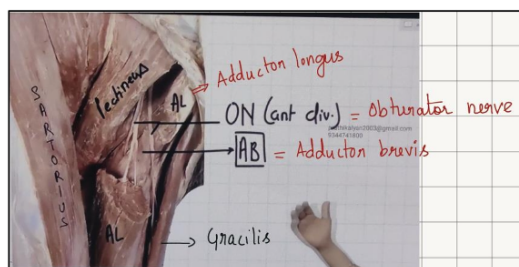
Ant compartment of thigh



Femoral triangle



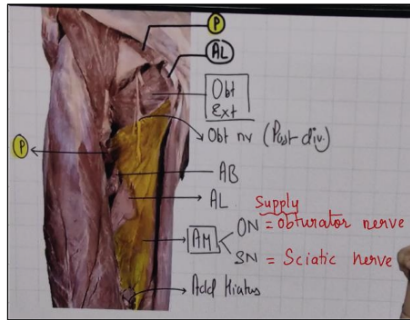
- Saphenous nerve = Longest cutaneous nerve of thigh



- Obturator nerve [Ant division] = goes below AL, but in front of AB
- AL, pectineus cut, AB removed

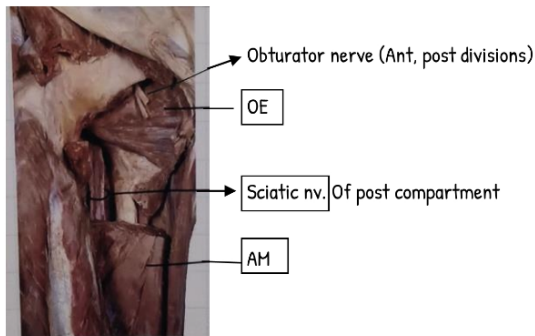
# Lower Limb-Cadaveric Images Discussion

Topic Notes: 9



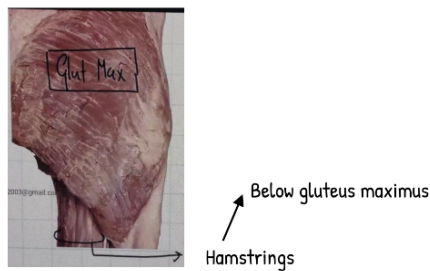
AM = Adductor magnus

- Obturator nerve (Post. Division) = in front of AM and obturator externus  
(or)  
Deep to AB



## GLUTEAL REGION

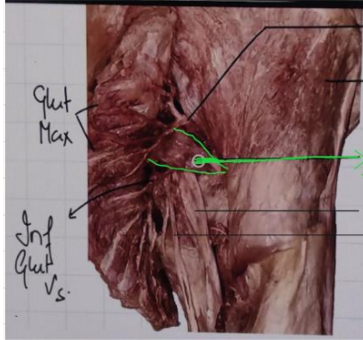
18:25



# Lower Limb-Cadaveric Images Discussion

Topic Notes: 9

Gluteus maximus retracted



- Sup. Glut Vp
- Glut Med.
- Pirifauip = Comes out of greater notch
- Sciatic nerve
- Post cutaneous nerve of thigh (PCNT)

- PCNT comes together with sciatic nerve

### Contents of greater sciatic notch

- Sup. Gluteal nerve, vessels
- Inf. Gluteal nerve, vessels
- Piriformis
- Sciatic nerve
- PCNT

Gluteus medius removed,



- Glut. Minimus
- SGA
- SGN
- Piriformis
- Sciatic nerve
- PCNT

SGA = Superior gluteal artery

SGN = Superior gluteal nerve

↓

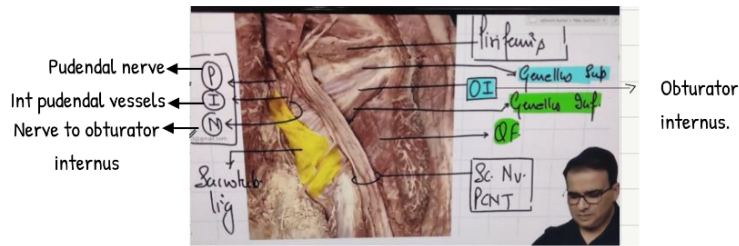
Supplies

- Gluteus Minimus

# Lower Limb-Cadaveric Images Discussion

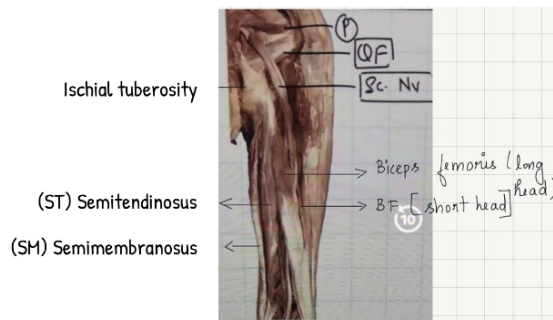
Topic Notes: 9

- Gluteus medius
- TFL



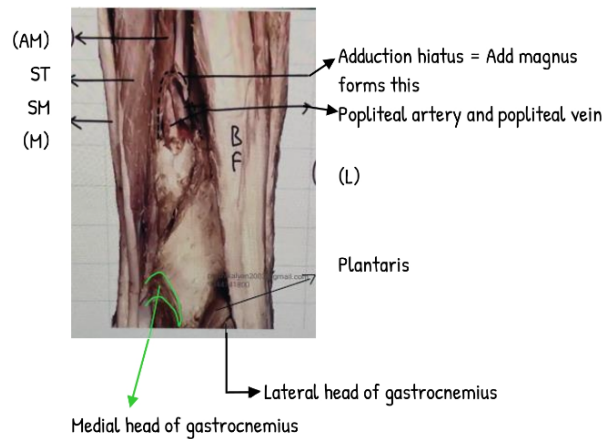
## POST COMPARTMENT OF THIGH

32:00



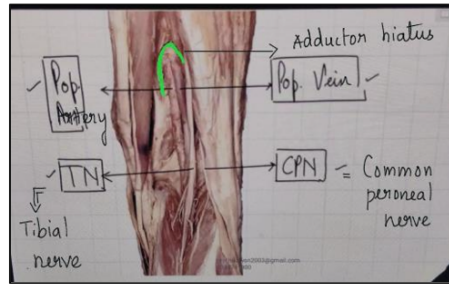
## BOUNDARIES OF POPLITEAL FOSSA

35:24



# Lower Limb-Cadaveric Images Discussion

Topic Notes: 9



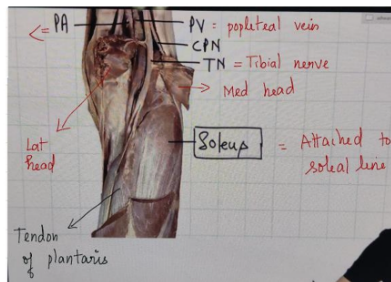
Posterior compartment of leg



Calcaneal tendon

Gastrocnemius cut,

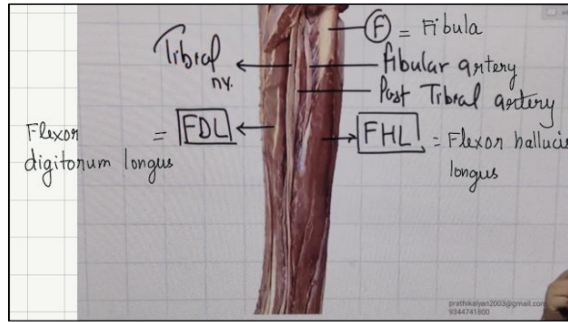
Popliteal artery



Soleus  
 Lateral head of gastrocnemius } Triceps surae muscles  
 Medial head of gastrocnemius }

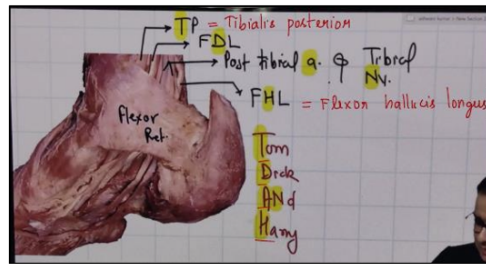
# Lower Limb-Cadaveric Images Discussion

Topic Notes: 9



## FLEXOR RETINACULUM

48:26



## PLANTAR APONEUROSIS

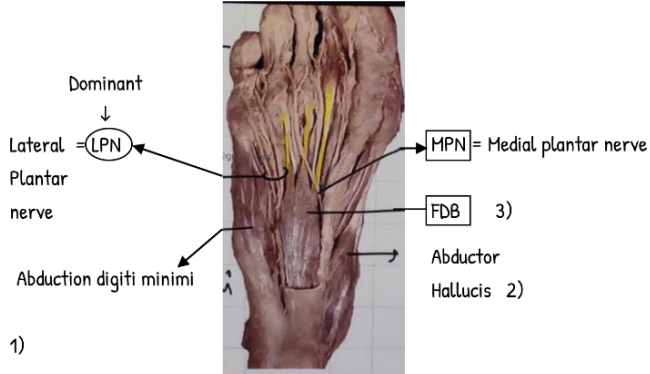
51:19



# Lower Limb-Cadaveric Images Discussion

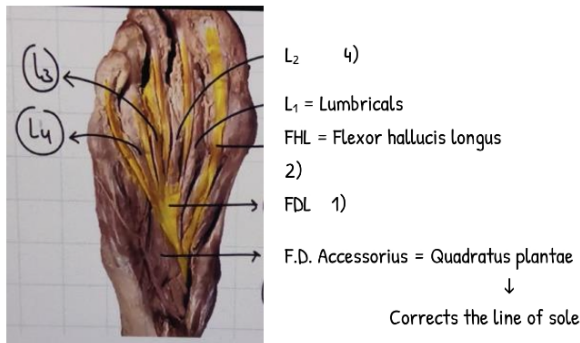
Topic Notes: 9

Plantar aponeurosis removed,  
First layer of sole,



## SECOND LAYER OF SOLE

55:00



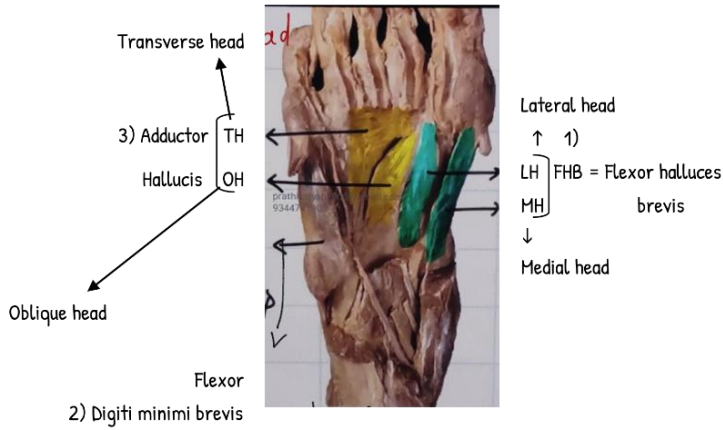
L<sub>1</sub> = Unipinnate  
 L<sub>2</sub> }  
 L<sub>3</sub> } = Bipinnate  
 L<sub>4</sub> }

# Lower Limb-Cadaveric Images Discussion

Topic Notes: 9

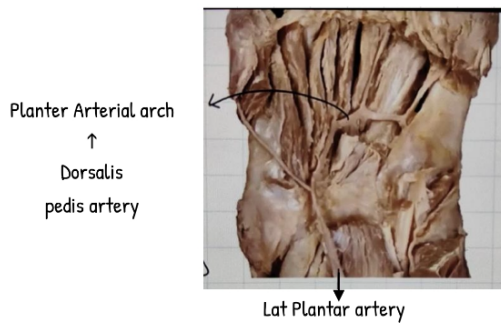
## THIRD LAYER OF SOLE

58:12



## FOURTH LAYER OF SOLE

01:01:21



## DORSUM OF FOOT

01:03:58



# Lower Limb-Cadaveric Images Discussion

Topic Notes: 9

Dorsal int (4)



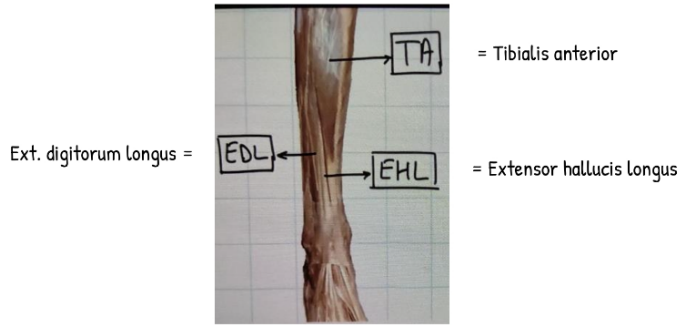
Bipinnate

Dorsal interossei → 2<sup>nd</sup> finger has 2 interossei



First and last finger has no interossei

Medial and lateral side of leg:



- Muscle for big finger comes from lateral side
- Other muscles come from medial side

