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⇒ Course Title: Anatomy

⇒ Discipline : RAU

⇒ Final Term
Course.

⇒

Date: _____

(1)

Q.1 => Write about the Structure of Eye?

=> Ans: Structure of Eye:

Anatomically the Eye can be divided into three parts.

(1) Fibrous layer

(2) Vascular

(3) Inner layer.

These layers have different structures and functions.

=> Fibrous Layer:

It is the outermost layer of the eye.

It consists of Sclera and Cornea.

=> They are continuous with each other. The main function is to provide shape to the eye and support deeper structures.

Sclera & Cornea

It is transparent and positioned centrally in front of the eye.

DARSI NOTES

Date: _____ (2)

Light entering the Eye is reflected by cornea.

Sclera \Rightarrow It comprises the majority of fibrous layer

(Approximately 85%).

\Rightarrow It provide attachment to the extraocular muscle. that are responsible for movement of eye.

\Rightarrow Vascular layer \Rightarrow It lies underneath the fibrous layer.

It consist of following.

(1) Choroid: It is the layer of connective tissues, and blood vessels.

\Rightarrow It provide nourishment to the outer layer of Retina.

(2) Ciliary Body:

\Rightarrow It consist of two parts the ciliary muscles and ciliary process.

DARSI NOTE

Date: _____

(3)

⇒ The ciliary muscles consist of collection of smooth muscles.

⇒ It attached lens and eye by ciliary process.

⇒ **IRIS** ⇒ It is circular structure, with aperture in the centre (the pupils).

⇒ It is situated b/w the lens and cornea.

(3) Inner layer:

⇒ It is formed by Retina.

⇒ It's light detecting components.

⇒ Composed up of two layer.

⇒ Pigmented (Outer) layer:

⇒ It is formed by single layer of cell.

⇒ It is attached to the choroid and supports the choroid in absorbing light.

Date: _____

(4) (4)

→ Neural: Inner layer =

It consist of photoreceptor the light detecting cell of Retina.

non-visual retina

Anteriorly, the pigment layer continue but the neural layer does not,

this part is known as non visual retina.

— This is optic part of retina.

macula

The Centre of Retina is marked by macula.

→ Fovea Centralis =) The macula contain a depression called fovea centralis.

Outer Structure

→ Lens, It is located Anteriorly b/w the vitreous humor and pupil.

→ It shape altered by ciliary body.

DARSI NOTES

Date: _____

(5)

⇒ Anterior and posterior Chamber :

There are two fluid areas in the eye known as anterior and posterior chamber.

⇒ B/w these two both are iris and ciliary process.

⇒ The chamber are filled by aqueous humor.

⇒ Vasculature :

The eye ball receive arterial blood primarily via the ophthalmic artery.

⇒ Foramina present in the base of skull :

→ Foramen cecum

→ Foramen spinosum

→ Cribriform plate

→ Olfactory Nerve (CNI)

→ Optic Canal

→ Optic N (CNII)

→ Foramen lacerum

→ Foramen magnum

Date: _____

(b)

→ Superior orbital fissure

→ Oculomotor n (CNIII)

→ Trochlear n (CNIV)

→ Ophthalmic n (CNV₁)

→ Abducens n (CNVI)

→ Foramen rotundum

→ Maxillary n (CNV₂)

→ Foramen ovale

→ Mandibular n (CNV₃)

→ Internal acoustic meatus

→ Facial n (CNVII)

→ Internal acoustic

→ Vestibulochlear n (CNVIII)

→ Jugular foramen

→ Glossopharyngeal n (CNIX)

→ Vagus n (CNX)

→ Accessory n (CNXI)

→ Hypoglossal Canal

→ Hypoglossal n (CNXII)

DARSI NOTES

Q.2 Names of muscle medial fascia of thigh compartment.

Ans:

~~Ans~~

⇒ Adductor longus muscle:

Origin ⇒ Body of pubis, inferior crest and lateral to pubic symphysis.

⇒ Insertion: middle third of linea aspera of femur (medial lip)

~~Ans~~ Adductor brevis muscle

Origin ⇒ Anterior body of pubis inferior pubic ramus.

~~Inferior ramus of pubis, ischial tuberosity~~
Insertion ⇒ Linea aspera of femur (medial lip)

Posterior surface of shaft of femur.

Date: _____ (8)

(3) Adductor magnus muscle:

Origin => Adductor part, inferior
pubis, ramus, ischial ramus
ischial tuberosity.

Insertion => Adductor part

Gluteal tuberosity, Linea aspera
(medial lip)
medial supra condyle
line ischio condylar part.

Adductor tubercle of femur.

Action

(4) Obturator externus:

Origin => Anterior surface of
obturator foramen, bony
boundaries of obturator
foramen.

Insertion => Trochanteric fossa
of femur.

P.T.O

Date: _____

(9)

S/ Gracilis muscle:

Origin \Rightarrow External point of ischiopubic ramus (on the pubic bone) and extends to the upper middle shaft of tibia.

* \Rightarrow inferior ramus of pubis of ischium.

Insertion \Rightarrow hip adduction, and assist knee flexion.

upper part of shaft of tibia on middle surface.

Q.4 write the structure of skull.

Ans:

The structure of type of fibrous joint that are unique to the skull

\Rightarrow They are immovable and fuse completely around age of 20.

DARSI NOTES

Date: _____

(20)

Coronal Suture:

which fuses the frontal bone with the two parietal bone.

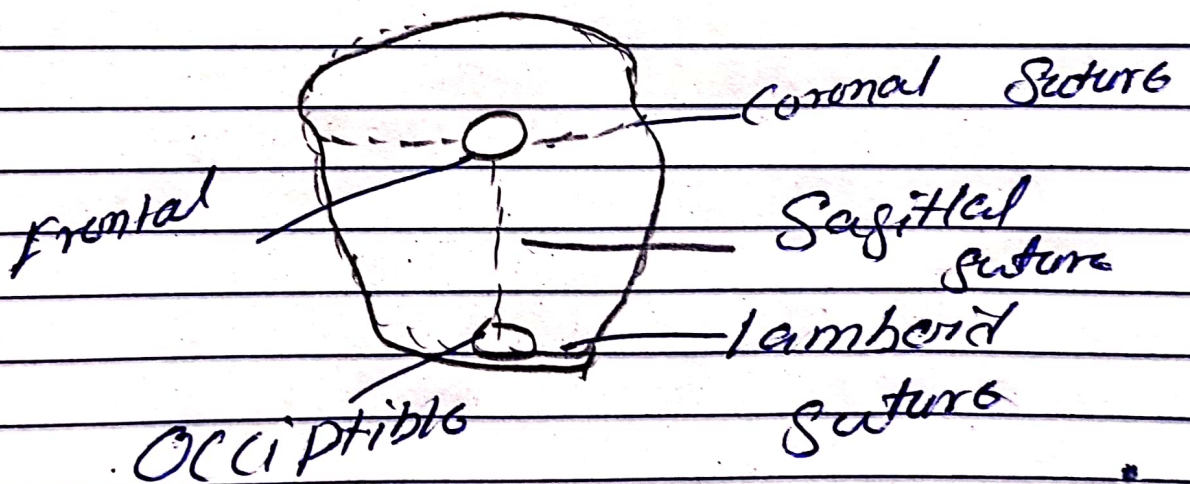
Sagittal Suture:

which fuse both parietal bones to each other.

Lambdoid Suture:

which fuse both occipital bone two parietal bone.

2) The two major fontanelles are frontal located at the junction of coronal and sagittal sutures.



DARSI NOTES

Date: _____

(11)

=> Occipital Bone:

Forms the posterior portion of Cranium and Cranial base.

→ It articulates with temporal bones and parietal bones.

=> It forms posterior Cranial fossa.

=> The part of occipital bone of the foremen magnum called basilar part

=> The Temporal Bone:

Structure: The human

skull is bony structure that forms head in human skeleton.

It consists of three parts
Embryological

origin the neurocranium the sutures and facial skeleton.

=> The neurocranium from protective Cranial Cavity

Date:

(12)

that surrounds houses the brain.
Stem.

Cranial bone: The upper area
of Cranial bone from Calvaria
Skull Cap.

Skull consist of Sinus,
Paranasal Sinuses and
numerous foramina. are lined
respiratory epithelium
nas

⇒ The foramina are opening
in the skull.
→ Largest of these is the
foramen magnum.

⇒ Trigeminal Nerve:

The Trigeminal Nerve is the
fifth Cranial nerve or
Simply (CNV).

This nerve are responsible
for sensation and face
and motor function,

DARSI NOTES

Date: _____

(13)

Such as beating and
chewing. It is most complex
of Cranial Nerve.

Its name tri, or three and
geminus or twin thrice
twinned derives from
the fact that of each two
nerves.

⇒ Schematic illustration of
trigeminal nerve and the
organs (or Sutures) it supplies

inferior view of human brain
nerve labelled.

Branches

⇒ Mandibular Nerve⁰⁰ (U₃)

maxillary U₂

Ⓜ) Ophthalmic Nerve
U₁

P.i.o

Date: _____

(14)

=> (Ophthalmic Nerve V₁)

It is the triminal branch of trigeminal nerve (along with maxillary and mandibular Nerve.)

=> It provide sensory innervation to skin, mucous membrane and sinuses to upper face and Slap.

Function => It supply nerve branches to Cornea, Ciliary body, and Iris. to the lacrimal gland, and Conjunctiva.

• Location => It arising from Trigeminal nerve ganglion and middle Cranial fossa.

(Q) Origin => Anterior aspect of opening to skull
pons
Foremen quadr.

* Superior orbital fissure

Date: _____

(15)

(2) Maxillary Nerve

It is the 2nd Branch of trigeminal nerve.

Which originates embryologically from first pharyngeal arch.

Function \Rightarrow Its function is sensory supply to the mid third of face.

Its anatomical course, sensory and parasympathetic function.

* Teeth to the upper jaw

* mucous membranes of nose.

Origin \Rightarrow Anterior aspect of pons.

Opening to skull

Foramen ovale

~~Foramen ovale.~~

~~Superior optical fissure.~~

P.T.O

Date: _____

(16)

(3) Mandibular Nerve (V₃)

It is the terminal branch of Trigeminal nerve along with the maxillary and ophthalmic nerve.

→ It has sensory role in the head and associated with parasympathetic fibres of other Cranial nerve.

Function-

motor function.
mylohyoid

Tensor Veli palatine
Tensor tympani

Origin ⇒ Anterior aspect of pons

Opening of the Skull
foramen Rotundum

Date: _____

(17)

Q.5 Write a note of Spinal Cord with references, anatomical position?

Ans: The Spinal Cord is long thin, tubular structure.

It is made up of nervous tissues, which extends from medulla oblongata in the brain stem to the lumbar region of vertebral column.

It contains / encloses the Central Canal of Spinal Cord which contains cerebrospinal fluid.

→ The Spinal Cord and brain together make CNS.

It begins in human at occipital bone passing foramen magnum and entering spinal canal, beginning cervical vertebra.

→ It extends down b/w 1st and 2nd lumbar vertebra where it ends.

Date: _____

(18)

→ It's diameter around 4.5cm (1.8in) in men
4.3cm (1.7in) in women

→ It's diameter 13mm (1/2in) in cervical and lumbar region.

→ Anatomical Position:

As a result of termination of spinal cord at L₂, it occupies around 2/3rd of vertebral canal.

→ It forms a structure known as Cauda Equina.

→ There are two points of enlargement.

The cervical enlargement is located proximally, at C₄ - T₄ level.

→ It represents the origin of brachial plexus.

→ B/w T₁ and S₁ lumbar enlargement representing the origin of lumbar sacral plexus.

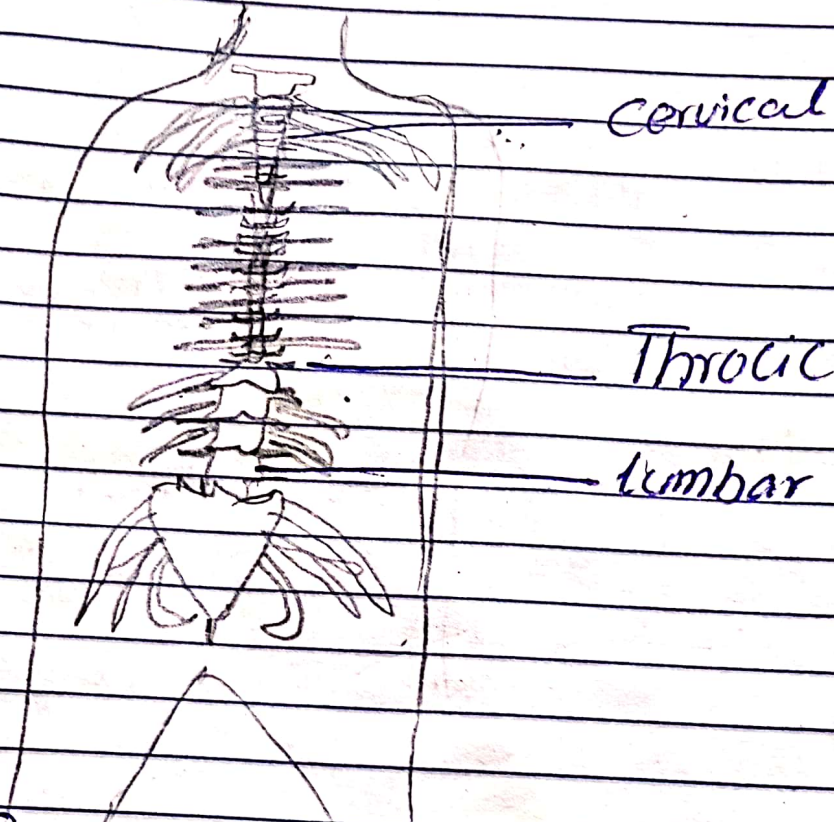
→ Inferior median fissure is deep

3/10/2021 NOTES

Date: _____ (19)

On the posterior aspect there is a slight shallower depression the posterior median sulcus

Structure.



→ The Spinal Cord is main pathway for information connecting the brain and peripheral nervous system.

→ About 45cm (18in) long in men 45 cm in women and shaped cervical and lumbar region.

Date: _____

(20)

→ Spinal meninges:

— The dura mater

→ Pia mater

— They contain Cerebrospinal fluid
cutting support and protect
the Spinal Cord.

→ Analogous with Cranial
meninges.

→ Cerebrospinal fluid

It is clear colorless body
fluid found in Brain and
Spinal Cord.

→ It produced specialised
ependymal cells in choroid
plexus of ventricles of
brain.

(2) References

→ References of Spinal Cord

Kaufman, Bard Spinal Cord

Development and Stem cell.

Retrieved 2 Dec 2018.

DARSI NOTES

Date: _____

(21)

(2) Saladin: Spinal Cord
Development and Stem Cell.
Life map Discovery Compendium

Retrieved 2 Dec 2017.

(3) Spinal Cord Gross Anatomy

Retrieved December 2015.

(2) => Pharynx ☺

The Pharynx (plural) (pharynxes)

is a part of throat behind
the mouth and nasal cavity
and above the esophagus
and larynx.

The tubes going
down stomach and the lungs.

It found vertebrates and invertebrates.
Structure varies across species.

=> In human the digestive
system and conducting zone of
respiratory system!

DARSI NOTES

Date: _____

(22)

→ Enumeration of Pharynx:

Part of : Throat

System ⇒ Respiratory System
Digestive System.

Artery ⇒ : pharyngeal branches
of ascending
pharyngeal artery

Vein ⇒ : pharyngeal vein

Nerve ⇒ pharyngeal plexus
maxillary nerve.

⇒ Constrictor of Pharynx

The Superior pharyngeal Constrictor muscle is one pharyngeal Constrictor muscle.

Its primary action is Constriction with middle pharyngeal Constrictor and inferior pharyngeal

Constrictor muscles to deliver bolus food to esophagus.

Date: (23)

Q.3 ⇒ Injury of external laryngeal Nerve:

⇒ Ans: A Superior laryngeal palsy changes the pitch of the voice and cause inability to make explosive sound.

Due to paralysis of Cricothyroid muscle.

⇒ If no recovery is evident three months after palsy initially presents the damage is most likely to be permanent.

* Injury to the Superior laryngeal nerve occur thyroidectomy.

→ And Anesthesia region above the level of vocal folds.

⇒ Therefore it would only affected the Cricothyroid muscle.

DARSI NOTES

Date: _____

(24)

→ This can distasteful consequences for those who use their voice in their career, for e.g. => Singer, public speaker.

=> Damage to Superior laryngeal nerve leaves the vocal cord abducted and passes on inspiration risks

=> It can be injury surgery the removal of thyroid gland. (thyroidectomy 2/3).

=> The most common anatomical variation external distal portion of external laryngeal nerve inferior constrictor muscle is critical and allows indelible and presenting integrity is most cases.

=> The external branches is susceptible to damage thyroidectomy

Date: _____

(25)

or Cricothyrotomy, as it lies immediately superiorly thyroid artery.

→ The ability to produce pitched sounds is then impaired along with easy voice

fatigability (usually mono-toned voice.)

⇒ Test integrity of facial nerve:

⇒ facial nerve tests:

The facial nerve supply to the motor branches to the muscles of facial expression.

⇒ This nerve is therefore tested by asking the patient to wrinkle up their forehead, close their eyes and keep them closed against resistance.

DARSI NOTES

(26)

Puff out their Cheek and
reveal their teeth.

→ Patient with Addison
disease.

Pituitary insufficiency
or cystic fibrosis

have increased ability to
detect the four

Primary tests.

Taste acuity
returns to normal with
glucocorticoid therapy in

the case of Adrenal
hypo function.

~~2nd~~