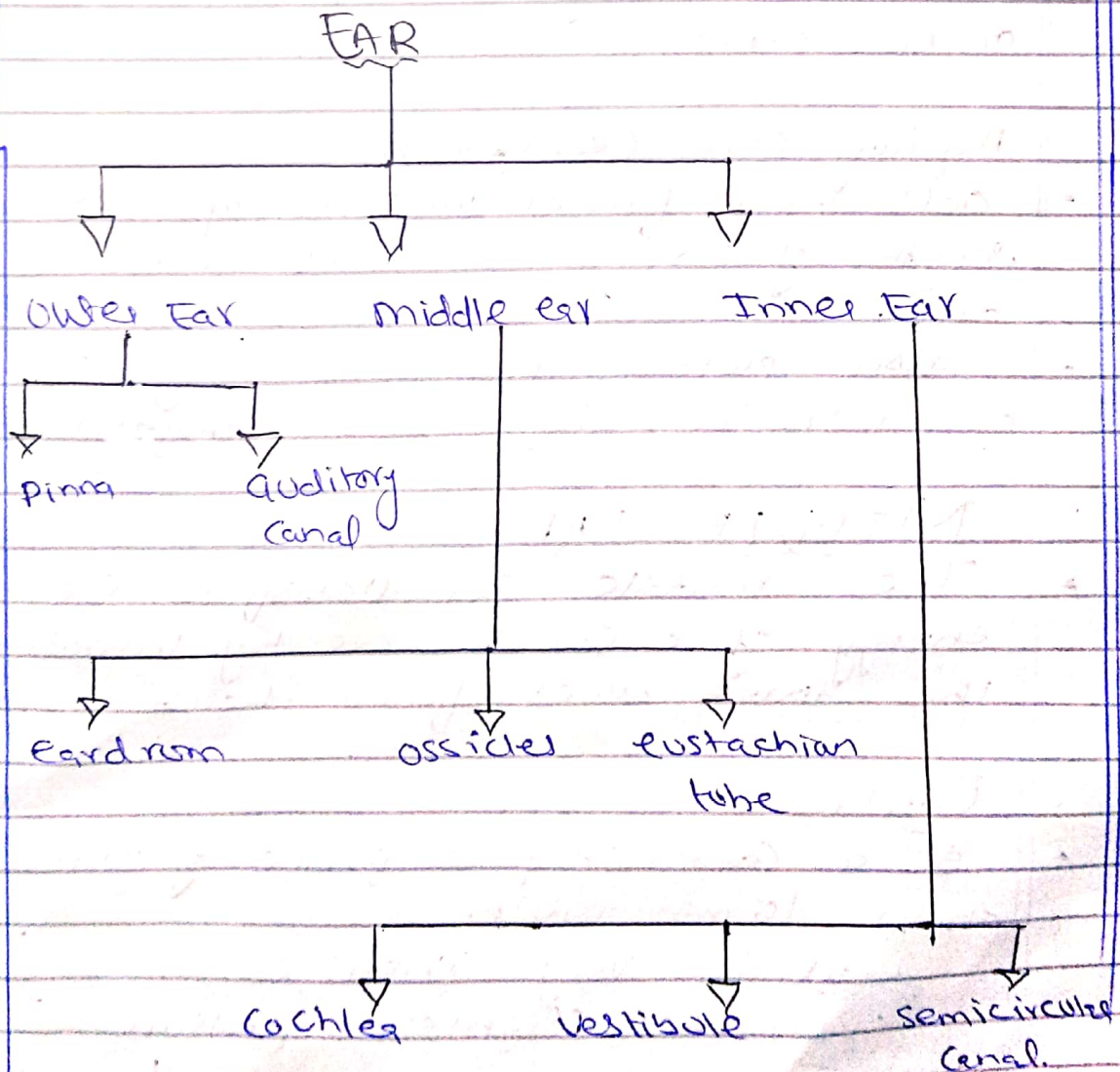


(1)

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ASSIGNMENT = ANATOMY
DATE = 10/7/2020

Q1 Write a note on the structure of Human Ear?

HUMAN EAR ANATOMY



(2)

OUTER EAR:0

- picture a satellite dish that collects radio waves.
- The outer ear is similar
- the curved formation on the outside helps funnel sound down the ear canal to the eardrum.

Pinna (auricle):0 receives sound waves that travel through the auditory canal or ear canal.

Auditory Canal (ear canal):0

- acts as a funnel with an approximate length of 2.5cm and leads to the eardrum.
- also protects the eardrum from shock and intrusion by external objects.

MIDDLE EAR:0

- * The middle ear transfers the energy of a sound wave by vibrating the three bones found there.

→ Eardrum:0

- As a cone-shaped piece of skin about 10mm wide.
 - It is very sensitive.
 - even the slightest pressure vibrations will cause it to vibrate

(3)

- Separates the outer ear from the middle ear.

• Ossicles :
o

smallest bones in the body eardrum

* malleus (hammer) :
o

long handle attached to the - a tiny bone that passes vibrations from the eardrum to the anvil.

* incus (anvil) :
o

A tiny bone that passes vibrations from the hammer to the stirrup.

* Stapes (stirrups) :
o

A tiny, U-shaped bone that passes vibrations from the stirrup to the cochlea.

- This is the smallest bone in the human body (It is 0.25 to 0.33 cm long).

• Eustachian tube :
o

A tube that connects the middle ear to the back of the nose; it equalizes the pressure between the middle ear and the air outside.

• INNER EAR :
o

• Cochlea :
o

This is a spiral tube that is covered in a stiff membrane.

(4)

- Contains thousands of hair cells attached to the end of the organ of the auditory nerve called organ of Corti.

- Cochlear Hair Cells are tiny hairs bend because of the vibrations caused by the sound waves.

AUDITORY NERVE

- The tiny hair cells of the cochlea are set in motion by vibrations.
- The vibrations stimulate tiny nerve cells.
- The nerve cells then send signals along the auditory nerve to the brain.
- These nerves receive the electrical impulses generated by the ear and pass this information up to the brain so it can be interpreted.

- Semicircular Canals: Three loops of fluid filled tubes that are attached to the cochlea in the inner ear. They help us maintain our sense of balance.

- The working of human ear is in such a way that sound waves travel from the outer ear to the middle ear, which are then transmitted to the inner ear in the form of compressed waves.
- In the inner ear, the compressed waves are converted into electric impulses that are perceived by the brain.

(5)

Q 12 What do you know about sub mandibular and sub lingual glands?

Submandibular Salivary Glands:

- Irregular in shape.
- Large superficial and small deeper part continuous with each other around the post. border of mylohyoid.
- Superficial part:
 - Situated in the digastric triangle.
 - Wedged b/w body of mandible and mylohyoid.
 - 3 surfaces:
 - Inferior, medial, lateral.
- Capsule:
 - Derived from deep cervical fascia.
 - Superficial layer is attached to base of mandible.
 - Deep layer attached to mylohyoid line of mandible.
- Relations:
 - Inferior - covered by.
 - Skin
 - superficial fascia containing platysma and cervical branches of facial N.
 - Deep fascia.
 - Facial vein
 - submandibular nodes.

(6)

• Lateral Surface:

- Related to submandibular fossa on the mandible.
- Mandibular attachment of medial pterygoid
- Facial Artery.

• Medial Surface:

- Anterior part is related to mylohyoid muscle, nerve & vessels.

• Middle part:

Hyoglossus, Lingual nerve, hypoglossal nerve.

• Posterior part - ~~is~~

Styloglossus, Stylohyoid ligament, 9th nerve and wall of pharynx.

• Deep part:

- small in size

- Lies deep to mylohyoid and superficial to hyoglossus and styloglossus.

- Posteriorly continuous with superficial part around the posterior border of mylohyoid.

• ~~is~~ Blood supply:

Arteries → Branches of facial & lingual arteries.

- veins → Drain to the corresponding veins.

Lymphatics → Deep Cervical Nodes via submandibular nodes.

- Nerve supply:
 - Para sympathetic fibers from Chorda tympani.
 - Sympathetic fibers from plexus on facial A.

* Sublingual Salivary Glands:

- Smallest of the three glands.
- Weight nearly 3-4 gm.
- Lies beneath the oral mucosa in contact with the sublingual fossa on lingual aspect of mandible.

• Relations:

- Above:
 - mucosa of oral floor, raised as sublingual fold.

• Below:

- mylohyoid in front
- Anterior end of its fellow.

• Behind:

- Deep part of submandibular gland.

(8)

• Lateral:

- mandible above the anterior part of mylohyoid line.

• Medial:

- Genioglossus and separated from it by lingual nerve and submandibular duct.

• Duct:

- Ducts of Rivinus.

- 8-20 ducts.

- most of them open directly into the floor of mouth.

- Few of them join the submandibular duct.

• Blood supply:

- Arterial from sublingual and submental arteries.

- venous drainage corresponds to the arteries.

• Nerve supply:

- Similar to that of submandibular glands.

Q3 Why stone formation is more common in the submandibular gland than other salivary glands?

(9)

Q3 Why stone formation is more common in the submandibular gland than other salivary glands?

Stone formation occurs most commonly in the submandibular gland for several reasons.

3 following reasons are discuss below

1 The concentration of calcium in saliva produced by the submandibular gland is twice that of the saliva produced by the parotid gland.

2 The submandibular gland saliva is also relatively alkaline and mucous so that's why stone formation is more common in submandibular gland than other salivary glands.

Q4 What do you know about the vertebra of the human skeleton. Explain?

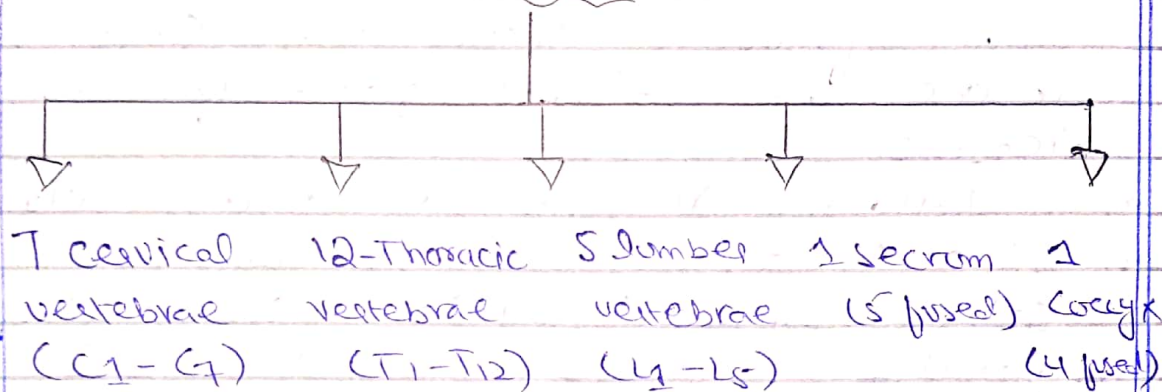
Vertebra:

Total number of vertebrae during early development is 33.

- As a child grows, several vertebrae in the sacral and coccygeal regions fuse.
- Adults have 26 vertebrae. Sacrum and coccyx bones become fused.

- Adults have 26 vertebrae.

REGIONS OF VERTEBRAL COLUMN



- The Cervical, thoracic and lumbar vertebrae → movable.
- Sacrum and Coccyx → immovable.

4. Structure of vertebrae:

1 Cervical vertebrae (C1-C7).

- Formed vertebrae (C1-C7).
- Support skull.
- Small in size.
- presence foramen in each transverse process.

2 Thoracic vertebrae (T1-T12):

- Formed posterior part of the thoracic cage.
- Articulates with associated ribs.

3 Lumbar vertebrae (L1-L5):

- Formed skeletal support for posterior abdominal wall.

- Characterized by large in size.

4 Sacrum vertebrae :-

- Fusion of 5 sacral bones.
- Immovable.
- Articulates with L5 at lumbosacral joint.
- Articulates laterally with pelvic bone at sacroiliac joint.
- Formed posterior wall of lower abdominal and pelvic cavity.

Coccyx :-

- Fusion of 4 coccyx bones.
- Immovable.
- Formed part of pelvic cavity.

4 PARTS OF A TYPICAL VERTEBRAE :-

Typical vertebrae consists of.

- A body.
- A vertebral arch.
- Seven processes.

Body of VERTEBRAE :-

- Largest part of vertebra, thick.
- Disc-shaped anterior portion.
- weight bearing portion. Size increases inferiorly.
- Its inferior and superior surfaces are roughened and give attachment the intervertebral disc.
- Anterior and lateral surfaces contain nutrient foramina - pathway for blood vessels.

VERTEBRAL ARCH:

- Extend backwards from the body of the vertebra.
- consists of a pair of pedicles and a pair of laminae.
- The pedicle project backward from the body to unite with the laminae.

PROCESSES OF THE VERTEBRAE:

7 process arise from the vertebral arch.

- Two Transverse process.
- One spinous process.
- Four ARTICULAR.

TRANSVERSE PROCESS:

- Extends posterolaterally for the junction between pedicle and laminae on each side.

ONE SPINOUS PROCESS:

- A single spinous process projects posteriorly from the junction of the laminae.
- These 3 processes serve as points of attachment for muscles.

ARTICULAR PROCESS (Zygapophyses):

- At the junction between pedicles and laminae meet, also projecting superior and inferior articular process.
- At the end of these processes - concave surface
- IAP of vertebrae above articulates with SAP of vertebrae below - zygapophysial joint.

Q5 write about the importance of Radiology in medical field?

Today, radiology is a key diagnostic tool for several diseases, helps with monitoring treatment and can even help with predicting specific outcomes. With several imaging modalities, the field has become crucial to medical care.

Central to Disease Management:

- With so many horrific diseases plaguing the world, it's important to have a good disease management plan. Radiology plays a huge role in disease management by giving physicians more options, tools, and techniques for detection and treatment.
- Diagnostic imaging allows for detailed information about structural or disease related changes.
- With the ability to diagnose during the early stages, patients may be saved. Without radiology, this may not be possible.
- When it all comes down to it, radiology saves lives.
- It's vital to medical care because it's one of the most powerful diagnostic and treatment tools available.

Without radiology, many would die sooner due to disease and it would be much harder to even fix something as simple as a broken bone.

- Diagnostic imaging allows for better treatment and a better look at what's really going on within the body.
- Radiology is not only vital to medical care, but it's also one of the fastest growing careers.
- With more and more physicians relying on radiology, it's expected that this field will grow by 21% from 2012 to 2022.

Due to all above reasons that's why radiology is more important in medical field.
