

Anatomy and physiology of mouth and pharynx:-

The mouth:-

Extends from the lips to the anterior pillar of the fauces.

it consists from two parts-:

1- the vestibule: between the lips and cheek on one side and the teeth and alveoli on the other side.

2-the mouth proper:-the space enclosed by the teeth and alveoli , it communicates posteriorly with the oropharynx through the oropharyngeal isthmus.

The floor is formed by the anterior 2/3 of the tongue.

The roof is formed by the hard palate.

The sublingual and the submandibular salivary glands open under the tongue in the floor of the mouth while the duct of the parotid gland opens in to the vestibule against the second upper molar tooth.

The gum : consist of dense fibrous tissue covered by mucus membrane.

The teeth: two types:

- \) deciduous : appear between 6-24 months, 20 in number.

2-perminant: appear between 6-25 years , 32 in number.

Muscles of mastication:

supplied by mandibular branch of the trigeminal 5th cranial nerve, they include:

1. depressors : mylohyoid and anterior belly of digastric.
2. elevators : temporalis , masseter and medial pterigoid.
3. protractors : lateral and medial pterigoids and masseter.
4. retractors : temporalis and masseter.

5-side to side movement : by muscles of the other side.

The tongue :-

a mass of muscles covered by mucus membrane, it consists of:

extrinsic muscles: genioglossus , hyoglossus, styloglossus , and palatoglossus.

Intrinsic muscles: all supplied by hypoglossal 12th cranial nerve, include:

a- superior and inferior longitudinal.

b-vertical.

c-transverse.

The pharynx:-

It is the upper part of the respiratory and the digestive tracts , about 10 cm in length in adult.

extends from base of the skull to the sixth cervical vertebra at lower border of the cricoid cartilage .

The pharyngeal cavity opens in front into the nose , mouth, and larynx, so it is divided in to three parts:-

1-the nasopharynx:-

open anteriorly into the nasal cavity, bounded superiorly by base of the skull and inferiorly by the soft palate

and oropharynx , posteriorly is the 1st cervical vertebra(atlas.(

On each lateral wall open the Eustachian tubes.

The pharyngeal recess or fossa of Rosenmüller lie on posterior superior surface on both sides.

Nasopharyngeal tonsils (adenoid) is located at the junction of the superior and posterior surface.

Nasopharyngeal isthmus leads from the nasopharynx to the oropharynx.

2-the oropharynx:-

opens anteriorly into the oral cavity.

It is bounded above by the soft palate and nasopharynx while inferiorly by the upper border of the epiglottis and

posterior 1/3 of the tongue containing the lingual tonsils.

Posteriorly lie the 2nd(axis) and 3d cervical vertebrae.

Palatine tonsils lie laterally between anterior and posterior faucial pillar .

3-the laryngopharynx (hypopharynx):-

opens anteriorly in to the laryngeal inlet , it is bounded superiorly by the upper border of the epiglottis and inferiorly by the lower border of the cricoid cartilage at the cricopharyngeal sphincter (upper esophageal sphincter) which is the narrowest part of the GIT.

4th ,5th ,and 6th cervical vertebrae lie posteriorly.

It consist of three parts:

1-posterior pharyngeal wall

2-Post cricoid area.

3-Pyriform fossa.

The valeculae are paired shallow recesses lying between the base of the tongue anteriorly and anterior surface of the epiglottis posteriorly , they are separated by the median glosso-epiglottic fold and are bounded laterally by the pharyngo-epiglottic folds.

Structure of the pharynx:

it has four layers:

1-mucus membrane : of three types : ciliated columnar epithelium , stratified squamus epithelium , and transitional epithelium.

It contains sub-epithelial lymphoid tissues called Waldeyer's ring which has efferent but no afferent lymphatic vessels .

waldeyer's ring:-

a-palatine tonsils.

b-nasopharyngeal tonsils(adenoid.)

c-lingual tonsils.

d-tubal tonsils.

e- lateral pharyngeal bands.

f-discrete nodules at the posterior pharyngeal wall.

2-pharyngeal apponurosis: form an incomplete connective tissue coat , it involve the pharyngeal basilar fascia.

3- muscular coat : of two layers:

a-internal :stylopharyngeous , salpingopharyngeous, and palatopharyngeous.

b-external :superior , middle and inferior constructor muscles.

4-buccopharyngeal fascia.

Blood supply of the pharynx:-

Arterial supply:

- 1- ascending pharyngeal artery.
- 2- facial artery.
- 3- lingual artery.

4-internal maxillary artery.

Venus drainage:

1-common facial vein.

2-internal jugular vein.

Nerve supply of the pharynx:

Sensory: mainly by 9th and 10th cranial nerves.

Motor: all muscles supplied by the pharyngeal plexus mostly by cranial part by the 11th cranial nerve which pass through the vagus nerve except :

- 1- tensor villi palatini : supplied by mandibular branch of the trigeminal cranial nerve.

2-stylopharyngeous : supplied by glossopharyngeal cranial nerve.

Lymphatic drainage:-

All pass to the deep cervical lymph nodes either directly or indirectly.

Functions of the mouth and pharynx:-

- 1- deglutition.
- 2- immunological function by sub-epithelial lymphatic tissues.
- 3- Respiration
- 4- speech.
- 5-taste.