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ASSIGNMENT OF GROSS ANATOMY OF HEAD AND NECK

1. Discus the anatomy of the tongue and comment on its applied anatomy
2. Write an essay on the air sinuses

*ANSWER*

1. The tongue is a mobile muscular organ that can assume a variety of shapes

And positions. Its partly oral cavity and partly in the oropharynx

THE PARTS AND SURFACES OF THE TONGUE

* The tongue has the following:

1. THE ROOT: Is the part of the tongue that rest on the floor of the mouth and its usually defined as the posterior third of the tongue
2. THE BODY: It’s the anterior two thirds of the tongue
3. THE APEX: Ites the anterior end of the body , which rest against the incisor teeth
4. THE DORSUM: It’s the psterosuperior surface, which is located partly in the cavity and partly in the oropharynx and its characterized by a V shaped give called the TERMINALSULCUS OR GROOVE[SULCUS TERMINALIS]

MUSCLES OF THE TONGUE

The tongue is essentially a mass of muscles that is mostly covered by mucous membrane and there are extrinsic muscles and intrinsic muscles. The four intrinsic muscles and four extrinsic muscles in each half of the tongue are separated by a median fibrous lingual septum, which merges posteriorly with the lingual aponeurosis

*EXTRINSIC MUSCLES OF THE TONGUE*

These include:

* Genioglossus
* Hyoglossus
* Styloglossus
* Palatoglosus

They oringinate outside the tongue and attach to it and they mainly ove the tongue but they can alter its shape as well

INTRISIC MUSCLE OF THE TONGUE

These include :

* Suoerior longitudinal muscle
* Inferior longitudinal muscle
* Transverse muscle
* Vertical muscle

VASCULATURE OF THE TONGUE

Arterial supply

* The arteries of the tongue are derived from lingual artery, which arise from the externalcarotid artery. On e tering the tongue, the lingual artery passes deep to the hyoglossus muscle and give rise to the:

The dorsal lingual arteries supply the posterior part {root}

The deep lingual arteries supply the arterior part.

* The deep lingual arteries communicate which each other near the apex of the tongue
* The dorsal lingual arteries are prevented from communicating by the lingual septum

Venous drainage

* The veins of the tongue are the dorsal lingual veins, which accompany the lingual artery
* The deep lingual veins, which begin at th apex of the tongue, run posteriorly beside the lingual frenulum to join the sublingual vein
* The sublingual veins in elderly people are often varicose ( enlarged and tortuous)
* All these linguak veins terminate, directly or indirectly, in the IJV

INNERVATIONS OF THE TONGUE

MOTOR INNERVATION

* All muscles of the tongue, except the palatoglossus(actually a palatine muscle supplied by the vagus nerve(X) of the pharyngeal plexus), receive motor innervations from the hypolglossal nerve(CNXII)

SENSORY INNERVATION

* *The anterior two thirds of the tongue are supplied by:*  
  > The lingual nerve(CNV2) for general sensation

The chorda tympani, a branch of the facialnerve (CNVII) transferring nerve fibers to the lingual nerve for taste

* *The posterior third of the tongue and the vallate papillae are supplied by:*  
  the lingual bransh of the glossopharynggeal nerve (CN IX) for both general sensation and taste

Anither contribution is made by the internal laryngeal branch of the vagus (CN X) for general sensation and taste

CLINICAL ANATOMY OF THE TONGUE

*Lingual Carcinoma*

A lingual carcinoma in the posterior part of the tongue metastasizes to the superior deep cervical lymph nodes on both sides , whereas a tumor in the anterior part usually does not metastasizes to the inferior deep cervical lymph nodes until late in the diseases.Because these nodes are closely related to the IJV, measasizes from the tongue may be widely distributed thtough the submetal and submandibular regions and along the IJV’S in the neck.

*Frenectomy*

An overly large lingual frenulum(tongue-tie/ankyloglossa) interferes with tongue movements and may affect speech

In unusual cases, a frenectomy(cutting the frenulum) in infants may be necessary to free the tongue for normak movements and speech

THE LYMPHATIC DRAINAGE

* Lymph from the tongue takes four routes

-Lymph from the posterior third drains into the superior deep cervical lymph nodes

-Lymph from the medial part of the anterior two thirds drains directly to the inferior deep cervical lymph nodes

- from the lateral parts of the anterior two thirds drains to the submandibukar lymph nodes

-The apex and frenulum drain to the submental lymph nodes

-The posterior third and the medial part of the anterior two thirds drain bilaterally

NOTE: There are four basic taste sensation: sweet, salty, sour and bitter

* **SWEETNESS** is detected at the apex
* **SALTINESS** at the anterolateral margins
* **SOURNESS** at the posterolateral margins
* **BITTERNESS** at the posterior part of the tongue.

1. The air sinuses is also called THE PARANASAL SINUSES

The paranasal sinuses are air-filled extensions of the respiratory part of the nasal cavity there are four paired sinuses, named according to the bone in which they are located: maxillary, frronta, sphenoid and ethmoid.

The function of the sinuses is not clear. It is thought that they may contribute to the humidifying of the inspired air. They also reduce the weight of the skull. Sinuses are formed in childhood by the nasal cavity eroding into surrounding bone. As they are outgrowths of the nasal cavity , they all drain back into it – openings to the paranasal sinuses are found on the roof and lateral walls of the nasal cavity. The inner surface is lined by a respiratory mucosa.

**FRONTAL SINUSES:** These are the most **superior** in location, found under the forehead. The frontal sinuses are variable in size, but always triangular-shaped. They drain into the nasal cavity via the **frontonasal duct**, which opens out at the hiatus semilunaris on the lateral wall.

**SPHENOID SINUSES:** The sphenoid sinuses also lie relatively superiorly, at the level of the spheno-ethmooidal recess. They are found more **posteriorly**, and are related superiorly and laterally to the **cranial cavity**. The sphenoid sinuses drain out onto the roof of the nasal cavity. The relationships off the sinus are of clinical importance – the **pituitary gland** can be surgically accessed via passing through the nasal roof, into the sphenoid sinus and through the sphenoid bone

**ETHMOIDAL SINUSES:** There are three ethmoidal sinuses: anterior,middle and posterior. They empty into the nasal cavity at different places:

* Anterior – Hiatus semilunaris
* Middle – Ethmoid bulla
* Posterior – Superior meatus

**MAXILLARY SINUSES:** The largest of the sinuses. Its located laterally and slightly **inferiorly** to the nasal cavity at **the hiatus semilunaris,** underneath the **frontal sinus** opening. This is a potential pathway for spread of infection-fluid draining from the frontal sinus can enter the maxillary sinus

CLINICAL RELEVANCE

* **SINUSITIS** – As the paranasal sinuses are continous with the nasal cavity, an upper respiratory tract **infection** can **spread** to the sinuses. Infection on the sinuses causes inflammation (particularly pain and swelling) of the mucosa, and is known as sinusitis. If more than one sinus affected, it is called **pansinusitis**.

The **maxillary nerve** supplies both the maxillary sinus and maxillary teeth, and so inflammation of that sinus can present with **toothache**