**Lec. 12 ,13 Oral physiology Dr.Muna**

**Physiology of the pharynx and velopharyngeal competence:**

**Pharynx:**

Is median longitudinal muscular tube extending from the base of skull to the sixth cervical vertebra that consists of three parts:

1. **a. Nasopharynx:**

Is the upper part lies posterior to the nasal cavity.

1. **b. Oropharynx:**

Is a middle part lies posterior to the oral cavity.

1. **c. Laryngopharynx:**

Is a lower part lies posterior to the larynx.



The muscles of the Pharynx:

The muscular coat which consists of the following muscles:

A. Outer Circular Layer consist of 3 muscles:

1-Superior constrictor.

2- Middle constrictor.

3-Inferior constrictor.

B. Inner Longitudinal Layer consist of 3 muscles:

1 -Stylopharyngeus.

2- Salpingopharyngeus.

3-Palatopharyngeus.



**-The opening of the Pharynx:**

It has the following opening:

1. a. Posterior nasal opening.
2. b. Posterior oral opening.
3. c. Laryngeal opening.
4. d. The velopharyngeal opening:

is temporary opening which is formed during the function separated between the nasopharynx and oropharynx during the function only.

During the function there are only 2-3 opening will be in function.



**The functions of the pharynx:**

The pharynx has a role in respiration, swallowing and speech.

**- During the respiration**: the **laryngeal opening** and **velopharyngeal opening** and **posterior nasal opening** are open that will act as a passage of air between the lungs and the nose.

**- During the swallowing and drinking:** the **velopharyngeal opening** will close. The larynx that moves up and help of posterior 1/3 of the tongue to move upwards and epiglottis will move posteriorly downward to close the **laryngeal opening** completely during the swallowing so the food and water will go directly from the posterior part of oral cavity to the esophagus.

**The velopharyngeal opening** will close by lateral pharyngeal wall move medially by the action of the superior pharyngeal constrictor muscle, and movement of the soft palate by levator veli palatine muscle, palatopharyngeal muscle.

During the function the soft palate and pharynx will be activated depend on the degree of the function.

**-During the speech:** the soft palate will move upward and backward the posterior pharyngeal wall move anteriorly and the lateral pharyngeal wall move medially this create velopharyngeal closure that leads the air will move from the lung to the oral cavity this will create intraoral pressure and the speech will be developed by horizontal movement of tongue, and attachment of palate, and velopharyngeal area closure. In case of blowing there is also velopharyngeal closure higher than that of speech.

In case of gagging the degree of the velopharyngeal closure higher than that of speech and blowing. Therefore, the selling between the soft palate and pharynx during the function is variable.

- **The problems of the velopharyngeal incompetence:**

When the patients have cleft palate, soft palate paralysis, short congenital soft palate deep posterior pharyngeal wall, acquired defects or any disease will lead to opening between the oral cavity and nasal cavity lead to the following problems:

1. No intra oral pressure.

2. ENT problems (infection).

3. Difficulty in breathing.

4. Feeding problems.

5. Speech problems.