



شبكة المعلومات الجامعية

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التوثيق الإلكتروني والميكروفيلم



شبكة المعلومات الجامعية

# جامعة عين شمس

التوثيق الالكتروني والميكرو فيلم



نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها  
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بالرسالة صفحات

لم ترد بالأصل

Bl. 19e

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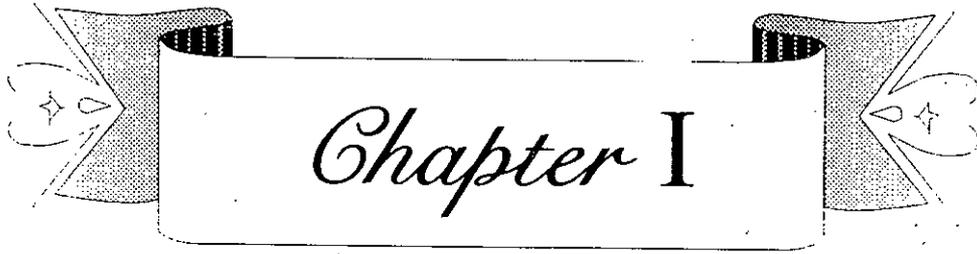
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*Chapter I*



**INTRODUCTION**



## ANATOMY OF THE PALATE

The normal palate consists of two parts :

1) A static part :

( bony shelf ) forming the anterior two - thirds and termed the hard palate .

2) A dynamic part :

forming the posterior one - third with a fibro-muscular basis termed the soft palate ( **Trier , 1986** ) .

### The Hard palate:

The hard palate consists of the premaxilla , the maxilla and the palatine bone . A midline foramen , the incisive foramen immediately behind the incisor teeth is the point of division between the primary and the secondary palate.

The main portion of the hard palate is constituted by the palatal process of the maxilla ; posteriorly the hard palate is completed by the horizontal plate of the palatine bone . The greater palatine foramen lies posteriorly on the medial aspect of the alveolar process between the palatine bone and maxilla ; the lesser palatine foramina perforate the palatine bone proper ( **Marquis, 1964**).

Three partitions meet the superior surface of the palate : vis , the septum in the midline, and the medial walls of the maxillary sinuses laterally ( **Mc Minn et al., 1981**).

The mucous membrane of the anterior hard palate is strongly adherent to the periosteum and can be separated only with difficulty. The two adherent layers form the mucoperiosteum, which may be readily elevated from the bone. The periosteum is attached to the bone by means of multiple fibrous tissue pegs , Sharpey's fibers. In the posterior portion of the periosteum are separated by mucous glands and there is a paucity of Sharpey's fibers( **Marquis , 1964**).

#### Blood Supply :

The blood supply of the hard palate is provided by the greater palatine artery which arises from the 3rd part of maxillary artery, it emerges from the greater palatine foramen and passes around the palate to enter the incisive foramen and passes up to the nose , veins accompany the artery back to the pterygoid plexus , other veins pass back to the supra-tonsillar region joining the pharyngeal plexus , lymphatic return is along side these later veins to the retropharyngeal and deep cervical lymph nodes (**Last , 1984**).

### Nerve Supply :

The nerve supply is by the anterior ( greater ) palatine nerve ( a branch of the maxillary nerve via the pterygo - palatine ganglion ) as far forward as the incisive foramen , the anterior part of the palate , behind the incisor teeth ( area of the premaxilla ) is supplied by the two sphenopalatine nerves from the same source ( **Sicher and Du Brul, 1975**).

### The Soft Palate :

The soft palate is a fibromuscular structure continuously modified in shape and position by the palatal musculature and contains a relatively large number of mucous and serous glands on its oral aspect.

The soft palate is covered on its oral aspect with stratified squamous epithelium which is continuous over the posterior border of the soft palate with the nasal surface. Stratified squamous epithelium is present on the nasal surface of the soft palate in the region where it is in contact with the posterior pharyngeal wall. The anterior portion of the nasal surface is covered by a ciliated columnar epithelium with many goblet cells. The oral epithelium contains only a few taste buds.( **Marquis, 1964**).

The anterior part of the soft palate has an aponeurotic framework formed by the tendon of the tensor veli palatini muscles (fig.1.) and attached to the posterior of the bony palate, the posterior part is muscular, the anterior part remains horizontal in position, while the more freely movable posterior part, when at rest is curved downwards ( **Last, 1984**).

#### Blood Supply:

The blood supply of the soft palate is furnished by the lesser palatine branches of the internal maxillary artery and by the ascending palatine branch of the external maxillary artery, together with palatine branches of the ascending pharyngeal artery. Venous drainage occurs laterally through the wall of the pharynx into the pharyngeal plexus and to the pterygoid plexus. Lymphatic drainage is into the retropharyngeal and anterior superior deep cervical lymph nodes ( **Marquis, 1964**).

#### Nerve Supply:-

The soft palate receives its nerve supply from the maxillary division of the trigeminal nerve, reinforced laterally on the oral surface by glosso-pharyngeal nerve branches from the lateral wall of the pharynx. The maxillary nerve fibers come by way of the

lesser palatine nerves through the sphenopalatine ganglion. Taste fibers pass via the greater superficial petrosal nerve to the nerves intermedius ( Marquis , 1964).

### Muscles of the Velopharynx:

The muscles of the velopharynx are the levator veli palatini , tensor veli palatini , palatoglossus , musculus uvulae , the superior constrictor muscle and the palato-pharyngeus muscle.

#### 1-Levator Veli Palatini:

Arise from the quadrate area at the apex of the petrous bone anterior (fig.2.) to the carotid foramen and from the medial part of the tubal cartilage .The two muscles in passing down to the palate are directed forwards and medially, together forming a V-shaped sling.

Their contraction pulls the palate upwards and backwards, also the nasopharynx is shut off from the oropharynx by the action of the levators.

The soft palate comes into contact with the posterior wall of the pharynx at "Passavant's ridge" on a level with the anterior arch of the atlas vertebra.

Again , contraction of this muscle opens the cartilagenous tube and equalizes air pressure between the middle ear and the nose. ( Last , 1984).

#### Nerve Supply:

By the way of the pharyngeal plexus from the pharyngeal branch of the vagus , the fibres having come from the accessory nerve.

#### 2- Tensor Veli Palatini:

This muscle arises from the scaphoid fossa at the base of the pterygoid process, plus the greater wing of the sphenoid bone and the anterior-lateral wall of the Eustachian tube (fig.3.) , the muscle converges towards the base of the hamulus where it becomes a flat tendon that bends at right angle around the hamulus (fig.4.) and so gets inside the pharynx. The tendon now broadens out into a wide triangular aponeurosis.

The anterior border of this triangular aponeurosis is attached to the crest of the palatine bone, the medial border blends with that of the opposite side.