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PAPER HISTOLOGY

Q1# DISTINGUISH THE FIBROUS CAPSULE AND ARTICULAR DISC?

ANS: Fibrous capsule and articular disc is a part of TMJ.

These are mobile joint formed between head of mandible and articular fossa of temporal bone.

Articulation between mandible and temporal bone.

FIBROUS CAPSULE

* Above to the interior edge of the preglenoid plane.
* Posteriorly to the squamo tympanic fissure , between these to edges of the articular fossa.
* Below to the periphery of the neck of mandible.

ARTICULAR DISC

* Fibro cartilaginous disc dividing joint cavity upper and lower component.
* Shape oval
* Its make articular surface

FUNCTION OF ARTICULAR DISC

* Stabilize the TMJ
* Make articular surface
* Reduce wear pf TMJ
* Lubrication

**Q2# WRITE A SHORT NOTE ON THE CLINICAL CONSIDERATION OF SALIVARY GLANDS?**

**ANS Clinical consideration of salivary glands:**

**Careful examination of a patient’s medical history and profile can lend clues to dysfunction of the salivary glands because they are often associated with**

**other systemic disorders such as hormonal imbalances, diabetes mellitus, arteriosclerosis, and neurological disorders.**

**For example:**

**Xerostomia (dry mouth), Sialorrhea (increase salivary flow), both could result from dysfunction of the madullary salivary center, autonomic innervations**

**to the glands, damage to the gland itself, or imbalances in fluid and electrolyteClinical consideration:**

**Radiation caries:**

**Radiation caries is a rampant form of dental decay that may occur in individuals who receive a course of radiotherapy that include exposure of salivary**

**glands.**

**Etiology (causes):**

**Carious lesions are produced due to the exposure of salivary glands and reduced flow of saliva, decreased pH, decreased buffering capacity, and increased**

**viscosity.**

**Signs:**

**Superficial lesions (abnormal change in structure) attack the buccal, occlusal, incisal, and lingual surfaces. It includes cementum and dentin in cervical**

**lesions. Lesions progress around the teeth circumferentially and resulting in loss of the crown.• Sjogren’s syndrome:**

**• It consists of keratoconjunctivitis (inflammation of cornea and conjunctiva), xerostomia (dry mouth), and rheumatoid arthritis (inflammation of joint).**

**The cause of the disease can be genetic, autoimmunological, etc.**

**• Features include dry mouth and dry eyes due to hypofunction of lacrimal and salivary glands. Most patients are treated symptomatically; ocular lubricants**

**and salivary substitutes are given.**

**• Xerostomia (dry mouth): It is defined as a subjective complaint of dry mouth that may result from a decrease in the production of saliva. It is not a**

**disease but a symptom caused by many factors.** **Etiology (causes):**

**• Sjogren’s syndrome (immune system disorder)**

**• Therapeutic radiation of head and neck**

**• Surgical removal of salivary glands**

**• Diabetes mellitus**

**• Acute viral infections involving salivary glands result in temporary xerostomia**

**• Anxiety, mental stress, and depression may temporarily decrease salivary flow**

**• Symptoms:**

**• Oral dryness (most common)**

**• Halitosis (un-attractive odor/smell from mouth)**

**• Burning sensation (pain type)**

**• Loss of sense of taste or bizarre taste• Difficulty in swallowing**

**• Tongue tends to stick to the palate**

**• Decreased retention of denture**

**Signs:**

**• Saliva pool disappears**

**• Mucosa becomes dry**

**• Tongue shows glossitis (inflammation of tongue) and fissured with papilla atrophy**

**• Angular cheilitis (red, swollen patches in the corners of mouth)**

**• Rampant caries at the cervical or cusp tip**

**• Periodontitis\* Candidiasis (fungal infection)**

**Q3# DESCRIBE THE FACTORS THAT PLAY A ROLE IN SHADING ?**

**ANS: FACTORS THAT PLAY ROLE IN SHEDDING**

**There are two process which play important role in shedding the one is odontoclast and the other is pressure.**

**1) ODONTOCLAST**

**2) PRESSURE**

**A) ODONTOCLAST**

**\* when root resorption is almost complete , these odontoclast degenerate and mononuclear cells emerge from pulpal vessels and migrate to the predentin surface.**

**\* less is known about the resorption of soft tissue as it sheds.**

**\* just before exfoliation, resorption ceases as the odontoclasts migrate away from the dentin surface.**

**\* the tooth sheds with some pulpal tissue intact.  
B) PRESSURE**

**\* the pressure exerted by the erupting permanent teeth seem to play in important role in resorption of deciduous teeth**

**\* the local pressure is responsible for initiation of resorption**

**\* in addition to this local pressure heavy masticatory and muscular forces play a role in resorption .**

**MECHANISM OF RESORPTION AND SHEDDING**

* **The mechanism involved in bringing about tooth resorption and exfoliation are not yet fully proven , however it is a clear that the odontoclast attaches to the hard tissue surface peripherally ,there by creating a sealed space lined by the ruffled border.**

Q4# EXPLAIN THE CALSSIFICATION OF TOOTH MOVEMENT ?

ANS PHYSIOLOGY

* The term physiological tooth movement of primarily refers to the slight tipping of the tooth in its socket and secondarily to the changes in tooth position that occur during and after tooth equption.

CLASSIFICATION OF TOOTH MOVEMENT

* Physiologic tooth movement

1 ) ERUPTION

2 ) Drifting

* Pathologic tooth movement

1 ) periodontal pathology

2 ) oral pathologies (cysts , tumors etc )

* Orthodontic tooth movement

1. ) tooth movement under external clinical forces .

1 ) PHYSIOLOGIC TOOTH MOVEMENT

* Naturally occurring tooth movements that take place during and after tooth eruption .
* This include:

A ) tooth eruption .

B ) migration or drift of teeth.

C ) changes in tooth position during mastication.

2) ORTHODONTIC TOOTH MOVEMENT

\* it is a pathological process from which the tissue recovers .

HISTOLOGY OF TOOTH MOVEMENT

Orthodontic movement bring about areas of pressure and tension around the tooth.The histologic changes seen during tooth movement vary according to the amount and duration of force applied.

FORCES PLUS PRESSURE DIRECTLY TO MOVEMENT

CHANGES ON TENSION SIDE

* PDL stretched
* Distance between alveolar process and tooth is widened.
* Increase vascularity
* Mobilization of fibroblast and osteoclasts.
* Osteoid is laid down by osteoblast in PDL immediately adjacent to lamina dura .
* Lightly calcified bone mature to form woven bone.

ON THE TENSION SIDE

* Over stretched PDL
* Tearing of blood vessels and ischemia
* Extreme forces applied net increase in osteoclastic activity and tooth loosened in socket.

PHASES OF TOOTH MOVEMENT

Burstone categorized the stages as:

* INITIAL PHASE
* LAG PHASE
* POST LAG PHASE

INITIAL PHASE

Rapid tooth movement is observed over a short distance which then stops.

Represents displacement of tooth in PDL membrane space and probably bending of alveolar bone.

Both light and heavy forces displace the tooth to same extent.

Between 0.4 to 0.9mm usally occurs in a weeks time.

Both light and heavy forces displace the tooth to the same extent during this phase.

LAG PHASE

Little or no tooth movement occurs.

Formation of hyalinized tissue.

Extent upto 2-3 weeks.

POST LAG PHASE

Tooth movement progresses rapidly as the hyalinized zone is removed and bone undergoes resorption.

Osteoclasts are found over a larger surface area.

**Q5# ENLIST THE FUNCTION AND COMPONENT OF TMJ ?**

**ANS Introduction**

**• Important function of TMJ are mastication and speech and great interest to dentist orthodontists and radiologist**

**• TMJ is a ginglymoarthrodial joint a term that is derived from ginglymus, means a hinge joint which allow motion backward and forward .**

**Temporomandibular joint:**

**• These are mobile joint formed b/w head of mandible and articular fossa of temporal bone**

**• The TMJ is the joint of jaw frequently refer to as TMJ**

**• Articulation between mandible and temporal bone.**

**Function of TMJ**

**• Speech and mastication**

**• Ligaments;**

**• The main components of the TMJ are as follow.**

**Cont. . .**

**• Ligaments**

**• Fibrous capsule**

**• Articular disc**

**• Lateral ligament of jaw**

**• Sphenomandibular ligament**

**• Stylomandibular ligament**

**Fibrous capsule**

**• Above to the interior edge of the preglenoid plane**

**• Posteriorly to the squamo tympanic fissure, between these to edges of the articular fossa.**

**• Below to the periphery of the neck of mandible.**

**Articular disc**

**• Fibro cartilaginous disc dividing joint cavity upper and lower component.**

**• Shape :oval**

**• Its make articular surface**

**Function of articular disc**

**• Stabilize the tmj**

**• Make articular surface**

**• Reduce wear of tmj**

**• Lubrication**

**Lateral ligament of jaw**

**• Attached above the articular tubercle on the root of zygomatic process of temporal bone**

**• Extend down word nd up word angle of 45degre to horizontal attached to lateral surface.**

**• Function: prevent posterior displacement of the resting condyle.**

**SPHENOMANDIBULAR LIGAMENT**

* **It is accessory ligament which lies on deep plane away from fibrous capsule.**
* **It is attached superiorly to spine of sphenoid and inferiorly to the lingual of mandibular foramen.**
* **The fibres are directed downward and outward.**

**STYLOMANDIBULAR LIGAMENT**

* **It represents a thickened part of deep cervical fascia which separate the parotid and submand . salivary glands.**
* **It is attach to lateral surface of styloid process above and below to the angle and post border of ramus of mandibular**

**SYNOVIAL FLUID**

* **Synovial fluid serves 2 purpase**
* **Medium for providing metabolic requirement to nonvascular articular surface of joint.**
* **Lubricant b\w articular surface during function.**
* **The two mechanism by which synovial fluid lubricates are**

1. **BOUNDARY LUBRICATION;**

**Occure when joint is moved and synovial fluid is forced from one area of cavity of into another.**

1. **WEEPING LUBRICATION**

**Refers to the ability of articular surface to absorb a small amount of synovial fluid.**

**Age changes of the TMJ**

**• Candyle**

**• Become more flattend**

**• Fibrous capsule become thickr**

**• Osteoprosess underlying bone**  **• Blood supply and innervation**

**• Atrial supply: superficial temporal artery laterally and maxillary artery medially.**

**• Nerve supply: massetric and auriculotemporal nerves.**

**DISK**

**• Become thinner**

**• SYNOVIAL FOLD**

**• Become fibrotic with thick basement membrane**

THE END