

Retest

Dayananda Sagar College of Dental Sciences & Hospital

Kumaraswamy Layout, BENGALURU - 560 078.

5074

FIRST / SECOND / THIRD INTERNAL ASSESSMENT EXAMINATION

Name : V. Reddi Harshini Reg. No. 56

Class : 1st BDS Subject : DADH UNIT TEST-2 Date : 21/08/24

SECTION

LONG ESSAY :-

1. Classify oral mucosa membrane. Describe the structure of oral mucosa membrane.
2. Difference b/w the deciduous teeth and Permanent teeth.

SHORT ESSAY

3. Salivary acini
4. Bell stage of tooth development.
5. Functions of PDL
6. Histology of TMJ
7. Functions of saliva
8. Difference b/w permanent maxillary and
9. DEJ (Dentino gingival junction). mandibular canine
10. Development of mandible

SHORT ANSWERS

11. Sharpey's Fibers
12. Odontoclast
13. Mamelons
14. Stern's son duct
15. Cementicles.

1. Sharpey's Fibers

- Sharpey's fibers are which inserted into the cementum to alveolar Bone. of the PDL.
- Sharpey's fibers are thin structures on the cementum.
- They are 6-7 mm in diameters.
- They are more visible on the acellular cementum.

(2)

2. Odontoclast

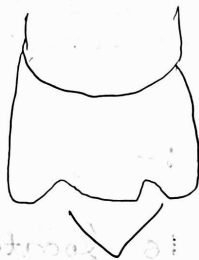
- odontoclast are multinucleated cells which resembles the osteoclasts.
- odontoclast are visible during shedding of the teeth.

(2)

3. Mamelons:-

- mamelons are structure ~~of~~ that seen in the incisal edge on the newly erupted incisors.

(2)



mamelons

4. Stensen's duct :-
- Stensen's duct are produced from the parotid duct that help in the salivary.
 - They are 4-5 cm in length and 5mm in diameter.
 - ~~Stensen's~~ duct that are secreted from the parotid gland.

(2)

5. Cementicles :-
- Cementicles which are located on the cementum
 - cementicles are the longest cells.

(42)

Long essay:

1. oral mucosa :-

- oral mucosa is located on the oral of the mouth.
- oral mucosa are produced by connective tissue of lamina propria.

→ Masticatory mucosa :- (25%)

- gingiva & hard palate.

→ Lining of Reflecting mucosa :- (60%)

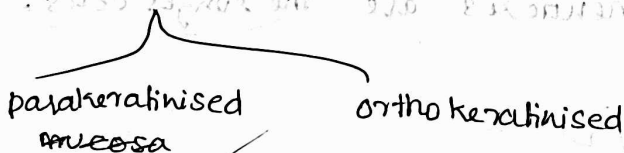
- lip, cheek, soft palate, mouth etc.,

→ Specialized mucosa :-

- fungiform, filiform, circumvalate.

Based on the epithelium,

- keratinised epithelium



- non-keratinised epithelium.

Based on the location :-

Buccal mucosa

labial mucosa

lingual mucosa

Based on the structure :-

→ cytokeratins :- These which produced by the cytokinin and keratin on the oral mucosa.

Keratinised epithelium :-

- Keratinised epithelium is formed by the four layer on the mucosa, which are :-

1. Stratum Basalar

2. Stratum Spinosum

3. Stratum granulosa

4. Stratum corneum

1. Stratum Basalar

- This is the deepest layer on the oral mucosa epithelium.

- They replenish themselves to form the upper cells. (to locate the cells).

- They are are cuboidal cells on the Base epithelium.

Stratum Basalar.



2. Stratum spinosum

- The cells are round shaped, long cells.
- These cells are located between the stratum Basalar and stratum granulosa.

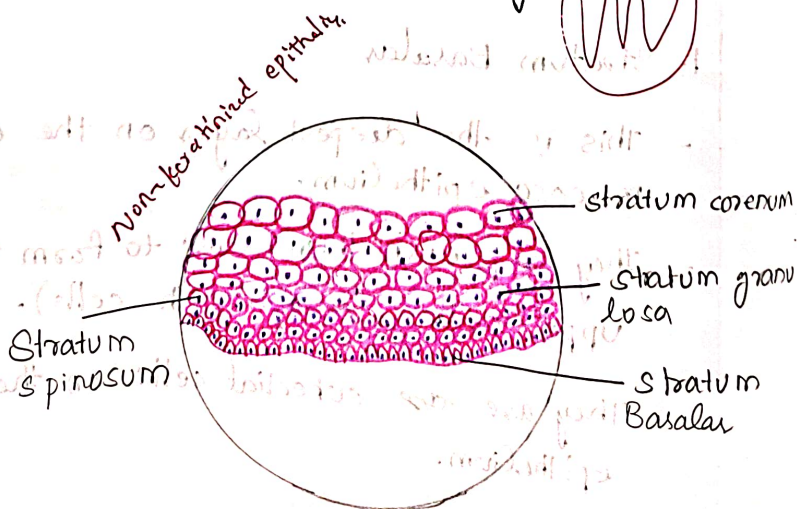


3. Stratum granulosa

- They are oval shaped cells.
- They are located below the stratum corneum.

4. Stratum corneum

- These are largest cells which is situated on the ^(top) of the epithelium
- These help in the attaching.



Non-keratinised epithelium

These are formed by the three layers of the cells.

1. Basal layer
2. Stratum inter-medium
3. Stratum spinosum.

1. Base layer:-

- These is the Base layer on the epithelium.

2. Stratum inter-medium.

- These located on the b/w the Base and Stratum spinosum epithelium.

3. Stratum spinosum

- These cells are round shaped.

Stratum corneum and stratum granulosa is not located on the non-keratinised epithelium.

Lamina propria:-

- Lamina propria helps in the various functions in the oral mucosa
- It helps in the supporting reflex
- Maintains the structure on oral mucosa membrane.
- Lamina propria are produced by connective tissue.

Functions :-

- Supporting
- Nutrition supply
- Attaching.

Submucosa:-

- connective tissue that consists of the various fibrous & density

clinical aspects:-

- periodontitis

- gingivitis

7/2

Deciduous teeth

- They are 20 in number.
- These are smallest tooth.
- They ~~as~~ will erupt at certain age.
- The dimensions of deciduous tooth are small on the lingual side / Buccal side.
- The lingual cusps are not fully developed.
- The teeth are located tooth-to-tooth relation.
- They are white in colour.
- They form at the age 4-6 years.
- The ~~tooth~~ are less mineralized.

permanent teeth

- They are 32 in number.
- These are largest tooth which are permanent.
- They do not erupt until when there is a cavity on the tooth.
- The dimensions are the largest on Buccal side / lingual side.
- The lingual cusps are fully developed.
- The teeth are not located tooth-to-tooth relation.
- The tooth turns yellowish to grayish in colour.
- They are form at the 6-11 years.
- The tooth are fully mineralized.

CROWN:-

- The crown shape are small on all sides.

- The labial sides are have smaller dimensions.

- Mamelons are absent on the deciduous tooth



no mamelons

- The crown are located cervically on the plane.

- These are less mineralized.

- The crown are big and developed fully.

- The labial sides dimensions are larger.

- mamelons are present when they erupted newly.



mamelons are present

- The crown are not located cervically on the plane.

- They are fully mineralized and developed

ROOT:-

- The root is conical shape and round and long.

- They are conical and long.

- The roots are small
- The roots are the bifurcation on the plane.

- The roots are long

- The enamel and dentine are hard structures on the deciduous teeth.

- The enamel and dentine is hard structure.

- They are ~~white~~ due to the less mineralized enamel.

- The incisors are are form at the age of 6-7 months.

- The incisors are erupt at the age of 4-5 years.

Dent'n
pull

7 1/2th

8

Short essay:-

3 Salivary acini:-

- salivary gland which helps us to digest the food by digestive enzyme.

- salivary gland are glandular cells.

- salivary gland are divided into three

types of cells that are :- serous acinar cells, myoepithelial cells,

→ Salivary gland $\xrightarrow[\text{enzyme}]{\text{digestive}}$ α -Amylase

→ Salivary acini:-

- salivary acini are glandular cells.

- These are produced by the salivary gland

- Acinar cells are helps us to digest the food

- (These are)

- salivary acini is of two types:-

1. Serous acini

2. Mucous acini

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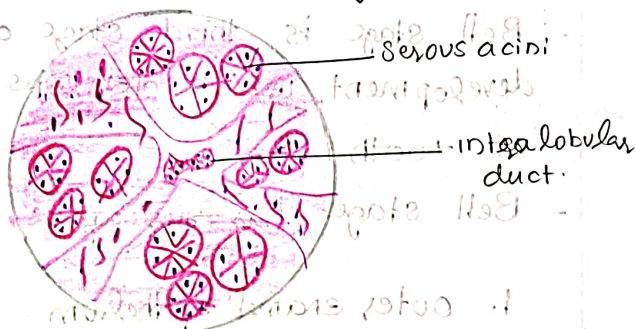
Name : U. R. Adharshini Reg. No.

Class : Subject : Date :

SECTION

1. Serous Acini :-

- Serous acini are round cells.
 - These help in the swallowing of food.
 - Serous acini ^{secrete} ~~produces~~ various enzymes like, ions, proteins, digestive enzymes.
- Serous salivary gland.

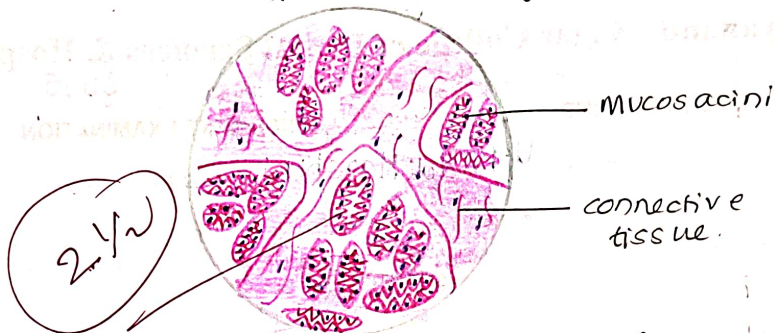


- Serous acini ^{is} ~~are~~ "watery fluid".

2. Mucous acini :-

- These also help in the to secrete the various enzymes. like lubricating fluid, ions.

Mucous salivary gland



Acinar cells helps in the producing the Salivary.

Myoepithelial cells also helps in the Salivary acini to produces the saliva.

4. Bell stage of tooth development:-

- Bell stage is third stage of tooth development which develops the layers of tooth.

- Bell stage has four layers:-

1. outer enamel epithelium

2. Stellate ectoderm

3. Stratum intermedium

4. inner enamel epithelium.

- Bell stage is further divided into the two stage:-

1. Early bell stage

2. Advanced Bell Stage.

→ Early bell stage :-

1. outer enamel epithelium :-

- It is outermost layer of tooth
- It protect the outer enamel epithelium
- These are oval shaped cells.

2. stellate reticulum :-

- It is star-shaped cell which is developed fully on bell stage.

3. Stratum intermedium :-

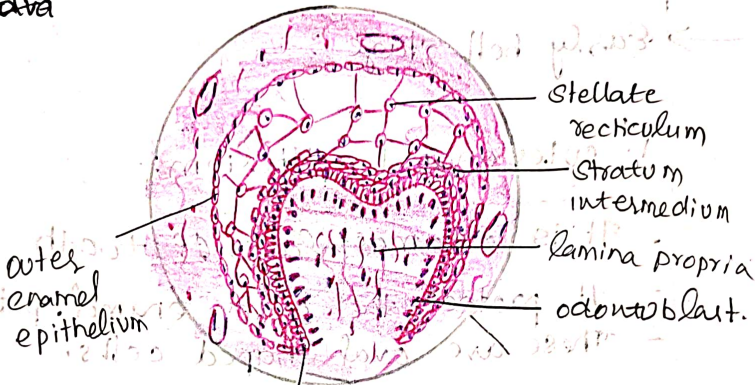
- stratum intermedium cells are located between the IEE and OEE on the cells.

4. inner enamel epithelium :-

- It is the innermost layer of enamel epithelium.
- It helps in the further developed of the tooth.

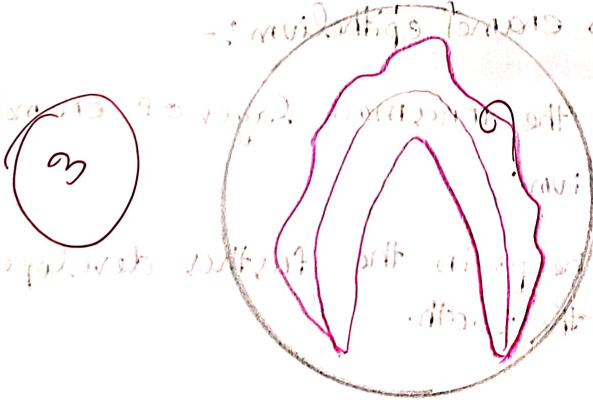
- Early bell stage helps in the development of the tooth.

Adva



- Advanced bell stage

- In advanced bell stage the stellate is collapsed.
- It develops the enamel and dentin.
- It helps in the complete the tooth development.



Q. Function of PDL :-

- It helps in the process of various properties.
- It helps in the swallowing the food.
- It helps in the pressing the nerve and vessels during the mastication of food.
- It produces various fibers to help in the structure.
- It helps during the mastication of the food.
- PDL is usually produced connective tissue which helps in the developing of the tooth. called as PDLCS.
- PDLCS helps in the functions. of teeth.
- PDL helps.

(2)

6. Histology of TMJ:

- temporal mandibular joint is a synovial articulation of mandibular fossa and the temporal bone.

5

SECTION

7. Functions of saliva :-

- Saliva helps in the mainly in the digesting the food by digestive enzymes like

α -amylase.

- α -amylase secretes the saliva into the mouth.

- Saliva helps in the swallowing the foods.

- It helps in the speech

(1 1/2) Saliva helps in the lubricating the food.

- During mastication of food saliva will help to chew. swallow easily.

- Saliva helps in the oral hygienic and oral environment.

- Saliva helps to maintain the mouth moist.

- Saliva contains various function.

8. Permanent Maxillary canine

- It is largest of the anterior tooth.
- The root is longest and straight.
- It is fully developed cusp.
- It is strongest teeth.

→ Chronology :-

First evidence - 4-5^{yr}
enamel completed - 6-7y
eruption - 11-12 years

Measurements:-

length of the crown - 11.0

length of the root - 17.0

Labial :-

- It is the largest tooth
- It is well developed

Mandibular canine.

- It is small and

- The root is small and straight.

- It is less developed cusp.

→ Chronology :-

First evidence - 4-5^{year}
enamel completed - 6-7^{years}
eruption - 12-13 years.

Measurements:-

- length of the crown: 10.0

- length of the root: 16.0

- It is the smallest tooth

- It is less developed.

- Shape - trapezoidal - Shape - trapezoidal



- It has sharp edge shape.

Lingual :-

- It has well developed cusps



Distal :-

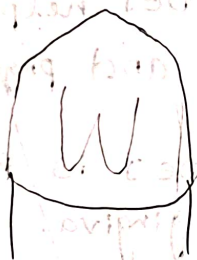
- It has well developed prominent.
- It distal is smaller than the mesial side.

Mesial :-

- mesial side is longer



- It has less developed cusps.



- It has less developed prominent.

- Distal and mesial side is same length.

- mesial and Distal is same.

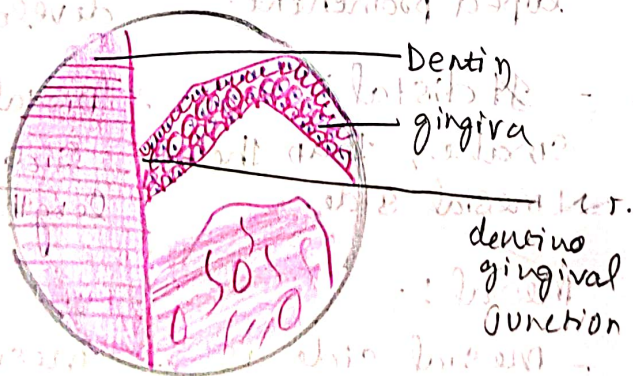
Root :-

- Root of permanent maxillary teeth is longer and slender and conical shape of all tooth.

- Root of mandibular is short and slender root.

9. Dentinogingival Junction :-

- The layer between the dentin and gingiva is known as the DEJ.
- DEJ helps in the classification and physiological functions of tooth.
- DEJ is firmly attached to the gingiva.
- DEJ supports the tooth.



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4601

FIRST / SECOND / THIRD INTERNAL ASSESSMENT EXAMINATION

Name : Jyothi Raj Reg. No. 17Class : BDS Subject : Physiology Date : 9-8-2024

SECTION

Questionary

long Essay

21/35 Improved
Jyothi Raj
9/8/2024

① Excitation contraction coupling, event, clinical as

short - Essay

② structure of neuromuscular junction, transmission
clinical aspect

③ stages of erythropoiesis

④ Hemostasis

short answer

⑤ Landsteiner law

⑥ Clarify anti-bodies & function

⑦ innate immunity vs acquired immunity

⑧ Isotonic vs isotonic con

⑨ length - ~~strength~~ tension relation

1. Excitation contraction coupling

②

AP is transmitted across the cell



AP transmitted to T-tubules



The change in conformation of DHP receptor which is connected to Ryanodine foot protein



Ryanodine foot protein is dislodged



Opening of Ca^{++} gated channel through Ryanodine foot protein in cistern



Ca^{++} ions enter the ~~the sarcoplasm~~ sarcoplasm



The change in the troponin - tropomyosin complex



The Ca^{++} binds to the troponin - C



The tropomyosin is moved exposing the ATP binding site of myosin



ATP binds to myosin

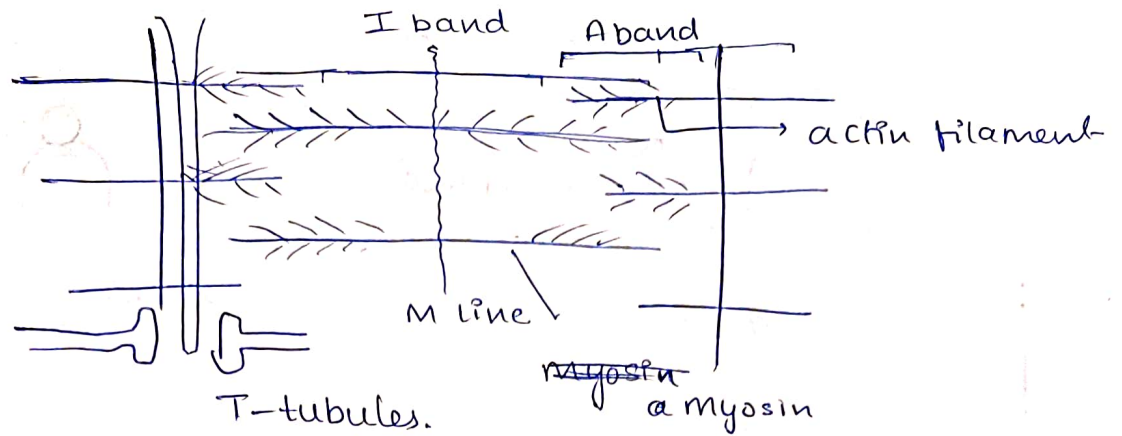


The movement of thin filament takes place



Process continues until Ca^{++} binds the troponin.

(3)



The muscle movement takes place by sliding movement of actin and myosin filament.

The actin filament is made up of α and β filament.

The myosin filament is made up of 2 proto-mers, with a head and tail.

→ The heavy part is head which has Ca^{++} binding site and ATP binding site.

→ The ~~myosin~~ ~~actin~~ actin filament has 2 α -protein with troponin and tropomyosin.

→ The troponin is always marking the calcium binding site.

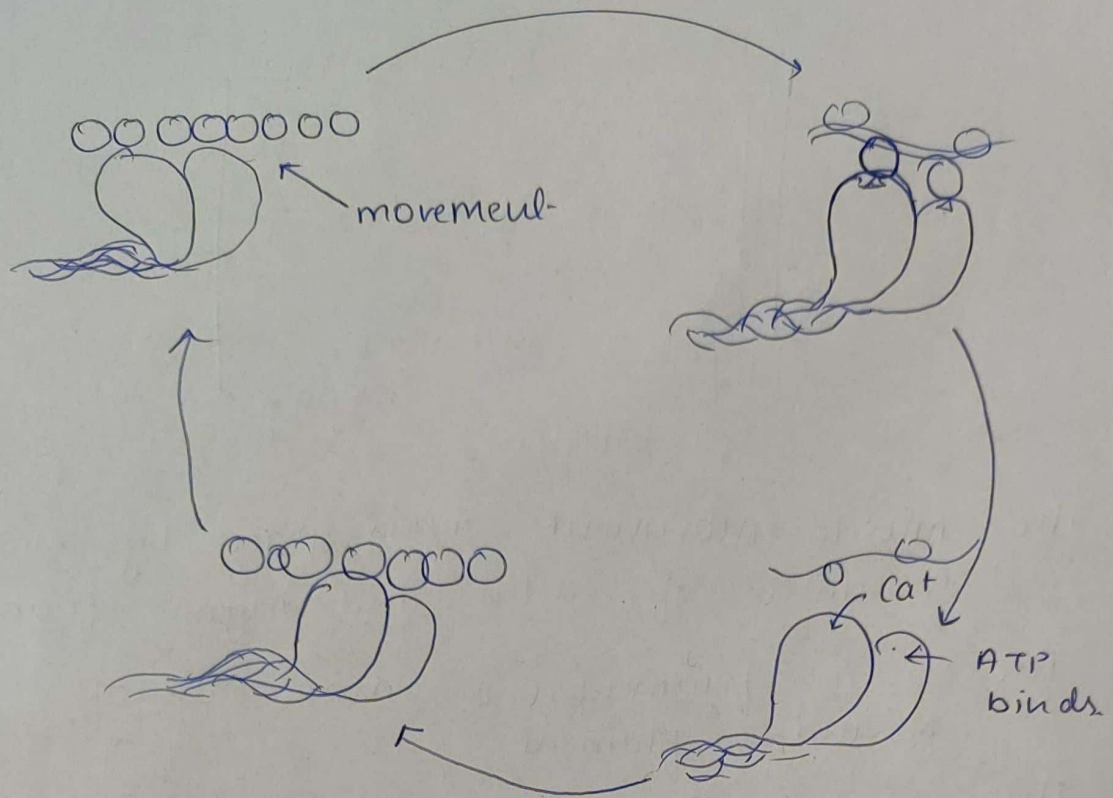
→ When troponin move, the binding site is exposed.

→ The I band is constant.

→ The H-zone decreases as the movement of actin filament over the myosin head.

→ The A band decreases as the actin filament glides on the myosin.

S_2^1



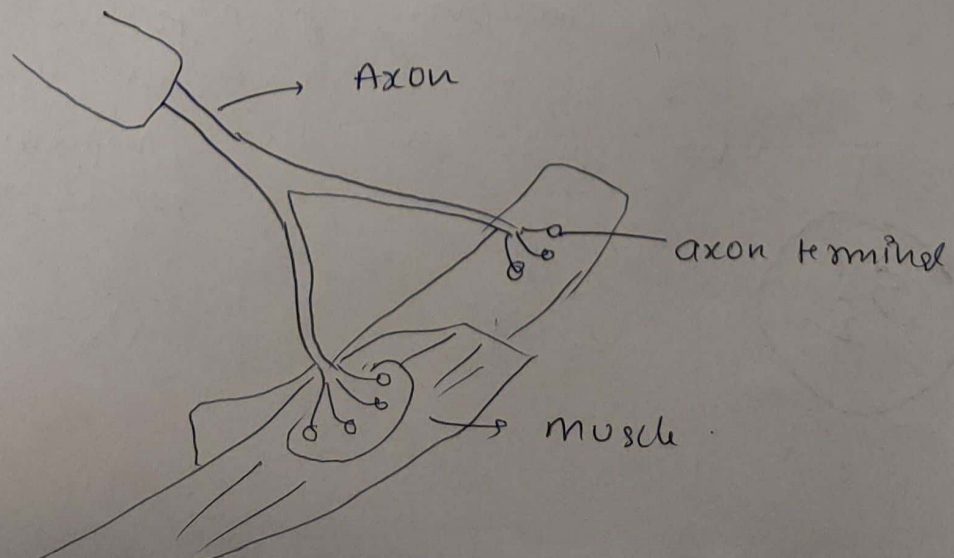
Clinical aspect

Rigor mortis.

② Neuromuscular junction.

It is the junction between the motor neuron and the muscle cell where the Action potential propagated in neuron is transmitted to the muscle cell.

→ It is similar to the synapse, hence the space between the neuron and muscle cell is called neuromuscular cleft or synaptic cleft.



- The axon from the neuron divides into ⁵ axo terminals that further divides into ~~axo~~ terminal buttons which are numerous
- Each axon terminal binds to the muscle membrane on the single muscle fibre called motor end plate.
- Note:- One muscle fibre can contain only one axon terminal ~~and~~, which has numerous ~~axo~~ terminal buttons and in muscle bundle there are many muscle fibres
- The ~~axo~~ terminal button contains synaptic vesicles which contains acetylcholine - which is a neurotransmitter.
- The acetylcholine helps in ~~propagating~~ opening of Ca^{++} channels present in post-synaptic cleft for transmission of action potential
- The acetylcholine produces a more as there are numerous ~~axo~~ terminal button which further contains many vesicles
- The acetylcholine produced is 10 times more than needed

2 Transmission

- The neuron has myelin sheath but at the terminal the axon divides into axon terminal
- The Action potential is propagated throughout the axon and reaches the Axon terminal
- The terminal buttons ~~also~~ receives Action potential and this triggers release of vesicles releasing Acetylcholine
- The Acetylcholine opens the Ca^{++} gated channels
- ~~this~~ This produced ionic imbalance and ionic movements takes place

⑥ → The AP Action potential is then transmitted to the motor end plate through synaptic cleft.

→ In muscle cell there is Nicotinic N_1 Receptor which receives signal and transmits the Action potential to the muscle cell.

~~Clinical aspect~~

→ ~~Myasthenia gravis → death of the muscle~~
~~It is due to N_1~~

→

~~Clinical aspect~~

→ Myasthenia gravis - drug which affects N_1 receptors cause death of muscle

→ Lambert-Eaton syndrome

→ Botulinum toxin

→ Succinylcholine → replaces Acetylcholine

→ Botulinum toxin

③ Erythropoiesis

→ It is process of production of RBCs

→ It is important as the RBC has a life span of 120 days, it should be replaced

→ The production of RBC starts at the 3rd week of intrauterine life in ~~mesoderm~~ yolk sac

→ From 3rd month to 5th month the RBC production is in liver and spleen

→ After 5th month → it takes place in Red bone marrow

In infants the bone is completely of Red bone marrow but in case of adults the peripheral region is only restricted to Red bone marrow whereas the other is yellow bone marrow

Red bone marrow produces - RBC

Yellow bone marrow - inactive, contains, fat, etc.

Stages of Erythropoiesis

Pluripotent stem cells

↓
CFU-GEMM (Myeloid ~~cell~~ type)

↓
CFU-GEMM

↓
BFU-E

↓
CFU-E (sensitive to Erythropoietin)

↓
~~No~~ proerythroblast

↳ 12-17 μm ~~non~~

↳ nucleus large

↓
Early normoblast

↳ 12-17 μm

↳ nucleus large, undergo mitosis

↳ Basophilic cytoplasm

↳ Haemoglobin absent

↓
Intermediate normoblast

↳ 10-12 μm

↳ nucleus large, undergo mitosis

↳ nucleoli absent

↳ Haematoxylin stain

↳ Haemoglobin seen in late stage



late normoblast

- ↳ nucleus very small
- ↳ Hematoxylin stained
- ↳ Haemoglobin clearly seen in microscope
- ↳ dichromatic

Reticulocyte

- ↳ pyknotic nucleus
- ↳ cast wheel appearance
- ↳ undergo maturation in spleen

where nucleus is degenerated and RNA

- ↳ synthesized
- ↳ Polychromatic, eosinophilic stained

Mature RBC

- devoid of nucleus
- Elastic in nature
- Biconcave in shape in lateral view
- Disc shape
- Haemoglobin present

3

⇒ Factors

- Local hormones — Interleukin 1, 3, 6
- Erythropoietin
- Hormone — thyroxine, testosterone, growth hormone
- Vitamin B₁₂ & folic acid
- Nutrition

⇒ Clinical aspect

Reticulocytosis

Erythroblastosis foetalis

RBC with nucleus.

Hemostasis

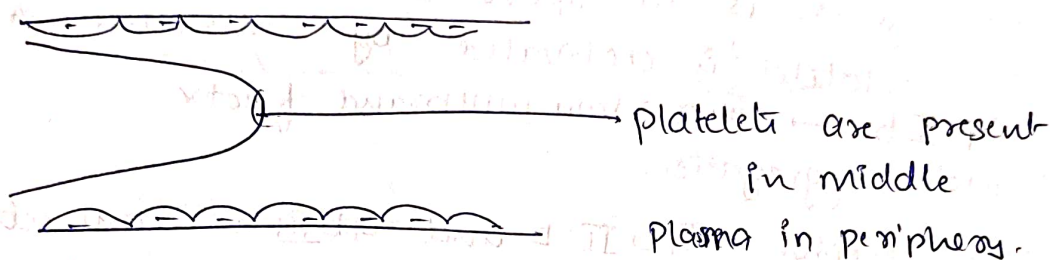
(9)

→ It is a important process where clot formation takes place.

→ The steps are

- Constriction of Blood vessel / vasoconstriction
- Platelet plug formation
- Clot formed

Vaso constriction



The blood flow in luminal way without contacting with endothelial cell

Thrombin - released by platelet cell produce endothelin-1 which is vasoconstrictor

Thromboxane X_2 is also vaso & serotonin is vasoconstrictor

Platelet formation

~~Platelet adhesion~~

~~The platelet binds with the~~

The platelet is formed by

promegakaryoblast



megakaryoblast



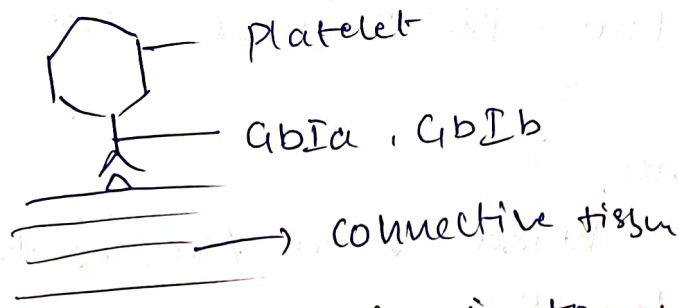
megakaryocyte



Platelet

The platelet adhesion

The platelet is connected to subendothelial by the platelet receptors $\alpha_b I a$ and $\alpha_b I b$



hence platelet adhesion is formed

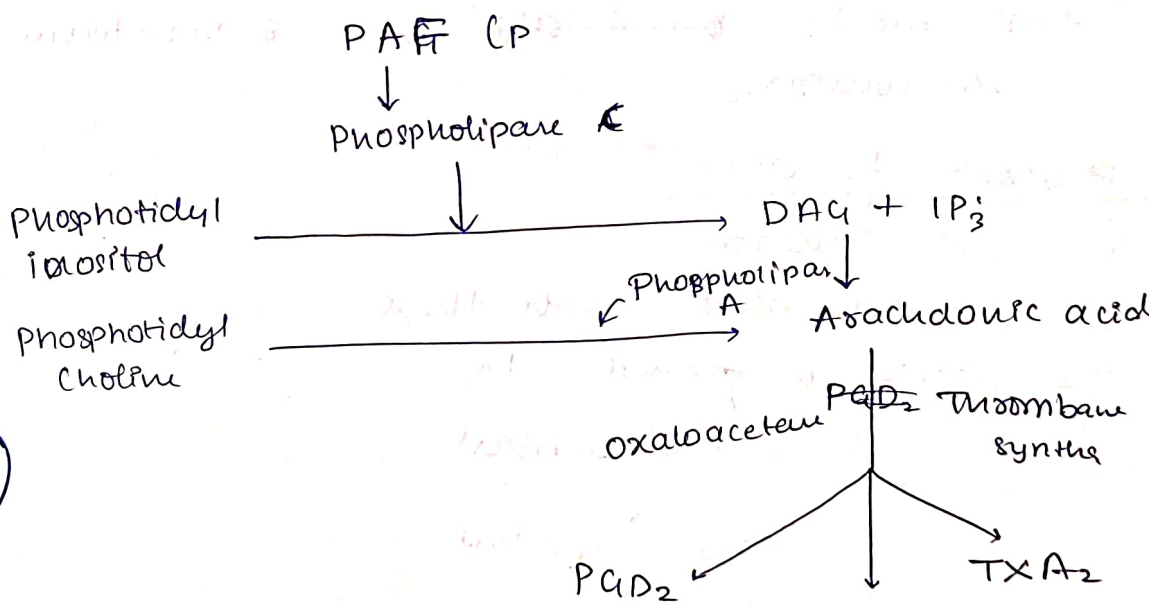
Platelet activation

- The inactive platelet is in disc shape and active cell is in spherical shape
 - The platelet is activated by thrombane A_2
 - $GPIb \rightarrow$ via von Willebrand factor
- Platelet aggregation

- The receptor $GPIIb$ and $GPIIa$ connect one platelet to another platelet through fibrinogen.

Platelet clog formation

the thrombane A_2 plays a important role here



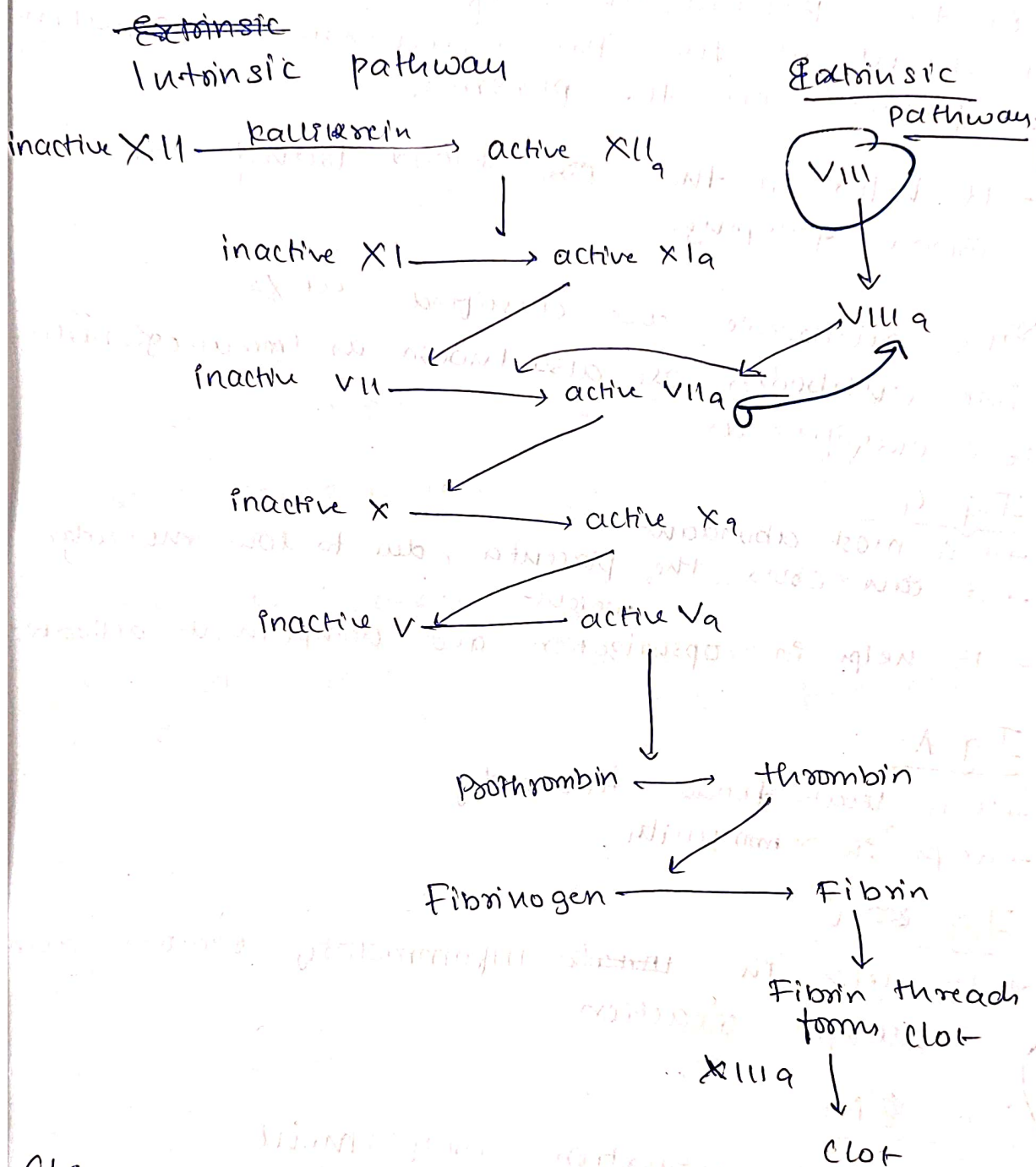
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The thrombane A_2 is inhibited by inhibiting oxaloacetan, but PGI_2 which inhibits platelet formation is formed by vesicular membrane but thrombore A_2 is not formed this caused delay in clot formation it takes 3-5 days

This is due for anemic patient treatment

(11)

Clot formation



Clinical aspect

prolonged clotting time and bleeding time
von willebrand factor syndrome

- (1) (5) Land Steiner's law
If the agglutinin is present on RBC surface
then the corresponding agglutinin is absent
in the plasma, and if the agglutinin
is absent in then the corresponding agglutinin
is present in the plasma

(1 1/2) → It helps in the ~~ex~~ blood transfusion
→ Blood grouping.

- (6) The antibodies are classified as γ
The antibodies are also known as immunoglobulin.
It is classified as

Ig G

- It is most abundant
- It can cross the placenta, due to low molecular weight
- It helps in opsonization and complement activation

Ig A

- It is least found Antibody
- helps in immunity

Ig ~~D~~ E

- It helps in ~~infect~~ inflammatory reaction and allergic reaction

(2) Ig M

- It helps in activation complement

Ig D

- The function is unknown

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4842

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Name : Jyothi Rai Reg. No.

Class : Subject : Date :

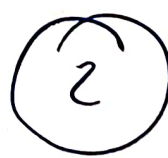
SECTION

(13)

Innate immunity	Acquired immunity
→ It is inherited → It is non-specific → It has no 'memory' based action → Short and intermediate interval → First line defence → eg: Skin, tear, mucous membrane.	→ It cannot be inherited → It is specific → It is based memory action → Slow response → Second line defence → Passive → Ig A from colostrum → Active → Chicken pox vaccine → Anti venom



Isotonic	Isometric
It is constant tension but muscle length is shortened → types → concentric contraction → when muscle shortens - eg: man lifts 25kg weight using bicep - The muscle has to first put tension more than 25kg → Eccentric contraction → the muscle length lengthens → helps in lifting.	It has same length but no constant tension → NO no muscle length change



→ work is done
→ joint movement.

NO work done. (14)

NO joint movement

eg:- Plank exercise.

SECTION



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5838

FIRST / SECOND / THIRD INTERNAL ASSESSMENT EXAMINATION

Name : SABA FATHIMA KHAN Reg No. Enr no: 03.

Class : IIIrd yr BDS Subject : Oral Pathology Date : 28/8/24

SECTION

- 1) Classify Enamel Hypoplasia. Discuss about environmental enamel hypoplasia.
- 2) Describe the Etiopathogenesis, ~~clinical~~ clinical features & HIV.

5 marks :-

- 3) Necrotizing ulcerative gingivitis
- 4) Supernumerary teeth
- 5) Hypoparathyroidism & O.K.C
- 6) chronic ~~and~~ sclerosing osteomyelitis
- 7) Warthin's tumor
- 8) Herpes zoster
- 9) Bite mark
- 10) Lichen planus

35
10

Dr

Dr

2 marks :-

- 11) James Ramsay Hunt syndrome.
- 12) Hairy or End appearance.
- 13) sun burnt appearance.
- 14) Syndes test.
- 15) Fusion of teeth.

①

Enamel hypoplasia may be defined as an incomplete or defective formation of the organic enamel matrix of teeth.

Two basic types of enamel hypoplasia are:-

* Hereditary type

* Environmental type hypoplasia.

Environmental Enamel Hypoplasia :-

- * In environmental enamel hypoplasia either dentition may be missing sometime only a single tooth both enamel and dentin are usually affected atleast to some degree.
- * Many studies both experimental and clinical have been carried out in an attempt to determine the cause and nature
- * It is known that a number of different factors each capable of producing injury to the ameloblasts may give rise to condition including:-
 - Nutritional deficiency (Vitamin A, C, D)
 - Exanthematous diseases (measles, chicken pox etc).
 - Congenital syphilis
 - Hypocalcaemia.
 - Birth injury,
 - Local infection.
 - Ingestion of chemicals (chiefly fluoride)
 - Idiopathic causes.

In mild environmental hypoplasia, there may be only few small grooves, pits or fissures on the enamel surface.

If the condition is severe the enamel may exhibit rows of deep pits arranged horizontally across the surface of the tooth.

In most severe cases a considerable portion of enamel may be absent suggesting a prolonged disturbance in the function of ameloblasts.

Hypoplasia results only if the injury occurs during the time the tooth is developing.

Once the enamel is calcified no such defect can be produced.

★ Hypoplasia due to nutritional deficiencies and exanthematous factors.

* Events during the time of tooth formation is the most common known cause of enamel hypoplasia.

* ~~Vit~~ Deficiency of vitamin A, C have also been named as causes.

* Exanthematous diseases like measles, chicken pox, are etiological factors.

* In general it might be stated that any serious nutritional deficiency or systemic disease is potentially capable of producing enamel hypoplasia.

The type of hypoplasia occurring from these deficient or diseases is usually of the pitting variety since the pits tend to scarify. The clinical appearance may be very unsightly.

* Enamel hypoplasia due to hypocalcaemia: This type of enamel hypoplasia is usually of the pitting variety and is similar to the hypoplasia caused by nutritional deficiency. This type of hypoplasia is caused by parathyroid deficiency.

* Enamel hypoplasia due to local infection or trauma: A type of hypoplasia in which only a single tooth is involved most commonly one of the permanent maxillary incisor or maxillary or mandibular premolars.

There may be any degree of hypoplasia ranging from mild brownish discoloration of the enamel to severe pitting and irregularity of the tooth crown.

~~These~~ These single teeth are frequently called Turner's teeth.

2) HIV is caused by

* ~~Use~~ Use of infected needles, syringes.

* Transfusion of blood infected by HIV

* From HIV positive mother to foetus.

* Sexually transmitted

Pathogenesis:

* HIV infects CD4 positive immune cells mainly T_H Helper cells but other cells like B lymphocytes, monocytes etc are also infected.

* A glycoprotein called gp120 present on the surface membrane of the virus

Has high affinity with CD_4 molecules present on the surface of immune cells

* Following the binding with the cells HIV enters the cells.

* Its genomic RNA is released into the cytoplasm and it is converted into viral ~~RNA~~ DNA by an enzyme called Reverse transcriptase.

* viral DNA is integrated into the host cell DNA and captures the genetic machinery of the ~~cell~~ host cell

* This leads rapid production of viral genome which acquires the shape of full virus with the help of protease enzyme.

Clinical features of HIV are:-

4 The following stages are present in HIV infection are:-

1 Acute HIV syndrome.

2 Asymptomatic stage

3 Symptomatic stage

a) Mildly symptomatic stage

b) Advanced disease [AIDS]

1 Acute HIV syndrome

The affected person starts showing ~~infected~~ symptoms 3-6 weeks after getting infected

This stage is characterized by:-

• Fever

• myalgia.

• Arthralgia

• Rash

• Lymphadenopathy

• ~~Thy~~ Thrombocytopenia.

Symptoms spontaneously resolve within 3-4 weeks

* Asymptomatic stage:

After the symptoms resolve in the Acute HIV stage.
The infected person remains asymptomatic for 2-8 years.
Although HIV continues to multiply & damage the immune system of the patient.

* Mildly symptomatic stage:

There is mild immune deficiency leading to manifestations.

These manifestations are:

- Vaginal candidiasis

- Kary-wei leukoplakia.

- Herpes zoster

- Pelvic inflammatory disease.

* Advanced [AIDS]: As disease progresses there is significant decrease in CD4 count.

Symptoms include:

- Unexplained weight loss.

- Fever.

- Chronic diarrhoea

opportunistic infections: Tuberculosis

Oral candidiasis

→ oral ~~manifestation~~ of HIV are:

- * Oral candidiasis

- * Kary leukoplakia

- * Kaposi's sarcoma

- * Herpes simplex virus

- * Human papilloma virus lesions

- 11) James Ramsay Hunt Syndrome is a rare neurological disorder that occurs ~~the~~ when varicella zoster virus gets reactivated and affects the facial nerve. This virus is the same which cause chicken pox, shingles key features:

- 2 1/2
- * Facial paralysis
 - * Tinnitus
 - * Hearing loss
 - * Ear pain and rash
 - * Vertigo

- 12) Hair on End appearance: Radiographic finding that implicate conditions affecting the jaw.

This is characterized by presence of thin, vertical radiopaque lines:

conditions which cause this "Hair on End Appearance" is

- 1 1/2
- * Thalassemia
 - * sickle cell anaemia.
 - * Iron deficiency anaemia

- 13) Fusion of teeth ^{which} The condition in 2 teeth fuse together

~~which the crown part of the tooth is fused to the~~

~~the root of the 2 teeth are fused~~ resulting in a single large tooth

It is a developmental anomaly

It can occur in ~~per~~ primary and permanent dentition.

* It leads to dental malocclusion

- 13) Sunburst appearance is a radiographic finding commonly associated with aggressive bone lesions including benign, malignant conditions associated

* Osteosarcoma.

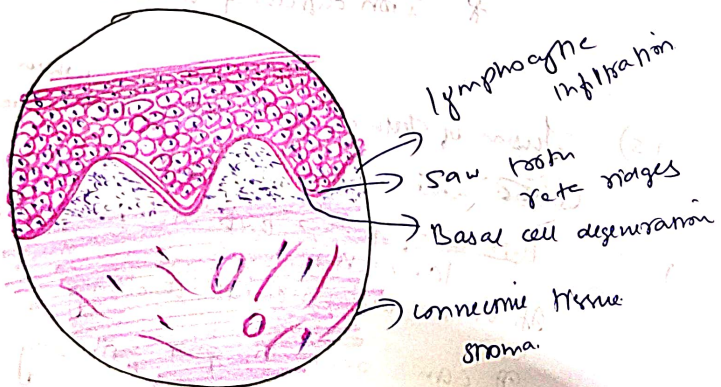
* Ewing's sarcoma

* Osteoblastoma

* Central Hemangioma.

- 14) Synder Test: It is a microbiological test used to measure the susceptibility of an individual's dental plaque to carry

* It is based on the ability of the acidogenic bacteria particularly *Lactobacillus* to ferment carbs & produce acid ~~which~~ leads to demineralization of tooth enamel and eventually caries



Lichen planus is chronic mucocutaneous disorder manifested in various forms in oral cavity.

The most characteristic pattern is reticular type with inter-lacing white striae called Wickham's striae.

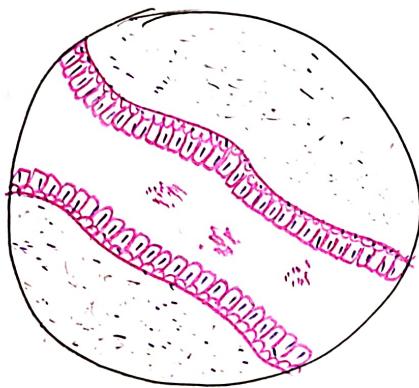
* Microscopically lichen planus shows changes in all layers of epithelium and connective tissue.

* spinous layer shows acanthosis or atrophy.

* one of the characteristic features is liquefaction degeneration of basal cells

* Rete ridges may be showing saw tooth appearance.

* Civatte bodies may be present



Benign Tumor of Salivary gland. mainly involving parotid gland.

Warthin's tumor usually presents as slow growing, painless nodular mass, firm or fluctuant affecting elderly individuals

Re-test

Dayananda Sagar College of Dental Sciences & Hospital

Kumaraswamy Layout, BENGALURU - 560 078.

FIRST / SECOND / THIRD INTERNAL ASSESSMENT EXAMINATION

156

Name : DIVYA P

Reg. No. 20D0974

Class : IV BDS

Subject : ORAL MEDICINE & RADIOLOGY

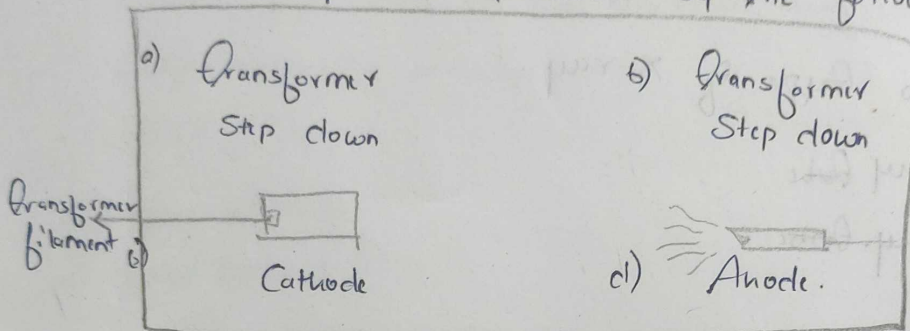
Date : 13/12/23

SECTION

Long Essay:

1) a) The production of X-Rays.

The X-rays are produced by the following steps;



- X-rays are produced by 4 methods.
- The Transformer Step up Step down.
- The Anode (positive)
- The Cathode (negative)
- 230V of electricity is supplied to X-ray tube
- The Energy is transmitted from the Cathode to Anode.
- Energy is converted from ^{Negative}~~positive~~ charge to negative positively charged

12

- 1) Intra Oral Technique.
- 2) Extra Oral Technique.

- In Intra Oral Technique has two techniques.
 - a) Bisecting angle technique.
 - b) parallel angle technique.

- There are techniques in production of X-ray.
 - : Collimator technique.

- ~~There~~ There is two type of X-ray.

- 1) fixed X-ray tube.
- 2) movable X-ray tube.

- Fixed X-ray:

It is fixed in a particular area, with the slight movement of the X-ray tube.

- Movable X-ray:

- It is movable to any place, with the movement of X-ray tube.

Factors affecting X-ray production are.

- Prolonged Exposure time.
- Variation in the Speed range.
- Excessive voltage production.
- The time period changes due to the E
- Image angulation.
- Incorrect Placement of the film.
- Film Placement displacement.
- X-ray tube angulation variation.
- Elongation due to the vertical angulation of the x-ray tube.
- Superimposed x-ray.
- Artifacts.
- Tube Voltage.
- Tube Current.

2) Classify Oral Candidiasis.

Candidiasis is a most common fungal infection. Candidiasis can be divided as.

1) Primary Candidiasis:

- a) Acute Oral Candidiasis
- b) Chronic Oral Candidiasis:
 - Erythematous Candidiasis.
 - Leukoplakia Candidiasis.
 - Atrophic Candidiasis
 - Hyperplastic Candidiasis

2) Secondary Candidiasis

- Etiology:

- Candidiasis is most commonly seen in young adults.
- It is the most common fungal infection.
- Candidiasis is seen at the age of 25 - 50 years.
- It is most common in the Oral Cavity.
- Candidiasis is most commonly seen in the ^{oral mucosa} gingiva, Buccal mucosa, Tongue, Lip, Palate, of the Oral Cavity.
- Candidiasis is most common in 5th, 4th, 6th decade of life.

Infection

It appears as a swelling, pain, Red Swelling.

- It might be Painful.
- Candididiasis is a asymptomatic.
- Candididiasis may last for many years.
- Candididiasis can be caused due to Panchawing, Tobacco, Pipe Cigars, Cigarette, bidi, Smoking, Alcohol.

Clinical features

- Candididiasis may appear as a swelling on the Oral cavity.
- It might cause irritation, itching.
- It is Painful.
- It is might be chronic in several case and might take several days to heal.
- In mild case it might be acute Oral Candididiasis.
- Clinically it is a red and white irregular patch.
- Candididiasis can be caused due to smoking, Tobacco, Panchawing, cigar, Alcohol.
- Oral Candididiasis is the 3rd most common ^{viral} fungal infection.
- Candididiasis is a irregular patch on the oral cavity.
- It can be cured by taking antifungal drugs.

Indication of antifungal (topical):

- Ketoconazole
- Nystatin

- Systemic antifungal drugs.

- Short Essay: candidiasis is most common fungal infection.

- It is most commonly seen in Oral Cavity.

- It can be diagnosed by biopsy.

- It can be Acute or Chronic Candidiasis.

- Erythematous Candidiasis can be cured/treated by taking antifungal drugs.

- Short Essay:

1) ~~Ex~~ Significance of medical history.

- Medical history is a part of Case history.

- Medical history is usually recorded to get patient past medical related disorders.

II patient is Diabetic,

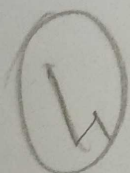
- Hypertensive.
- Cardiac related disease.
- Thyroid.
- If the patient is hypertensive more than 140 mm/Hg, treatment is to be delayed and check again after 10 minutes, then proceed the treatment or post appointment should be given.
- Any history of trauma.
- Accident, if patient had undergone any surgery.
- Exposed to local anaesthesia or general anaesthesia.
- medical history include if the patient's mother or father is Diabetic or Hypertensive.
- medical history is used to give a proper planned treatment.
- It is used for patient safety purpose.
- To know if the patient is allergic to any drug.
- Drugs can be prescribed based on the history.
- To prevent from Emergency.

(9)

- Periapical Granuloma it is also called as Apical periodontitis, Inflammation of Root apex.
- It is the inflammation of the apical area of the root.
- It is caused due to viral infection.
- It is most commonly seen in adults and in the younger age group.
- It is commonly caused due to Tobacco, pan chewing, Smoking, Alcohol.

Radiographically.

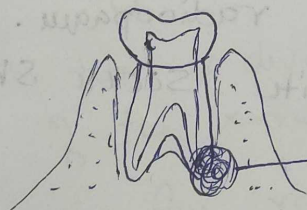
- It is a Radiopaque in appearance.
- It is Unicystic, multilocular.
- Radiolucency in the Root apex, with the break of Lamina dura.
- It has buccal layer, which is Radio Sensitive.
- It is commonly seen in third molar region.
- Periapical granuloma is an inflammatory disorder, widening of the PDL space.
- Loss of Connective Tissue layer.
- It can cause pain, irritation.



periapical granuloma

2) Chronic periapical abscess.

- It is due to widening of the periodontal & ligament space.
- It forms discontinuity of the connective tissue.
- It forms a abscess or pus formation due to inflammation.
- It is a ^{slit-like} radiolucent area in the radiograph.
- It has basal layer, which is radio sensitive.
- It is caused due to paracheewing, Tobacco such as cigar, cigarette, bidi, Alcohol, Smoking.
- It is commonly seen in the apex of the root.
- It is commonly seen in 3rd molar region and molars and premolars.



Chronic periapical abscess.

3) Sickle Cell anemia.

- Sickle Cell anemia is Blood related disease.
- Decreased Blood cell count.
- The shape of the cell changes to sickle, than normal shape.
- It can be chronic in many cases.

- Clinical features:

- It is commonly seen in female than male.
- It is seen in 3rd, 4th, 5th decade of life.
- Clinically it is seen in younger ^{adults} age.
- It is caused due to Adverse habits.
- It might be due to Genetic disorder.
- It can be seen in individual with pale eyes and hand.
- Tiredness, weakness, loss of strength, loss of appetite.

2) Radiographically:

- It is seen as a radioopaque.
- It appears as a white, seckle shaped cells.
- It is multilocular.

4) Radicular cyst.

- Radicular cyst is also called as periapical cyst.
- It is common inflammatory cyst.
- It is commonly seen in the apex of the root.
- It is commonly seen in the 3rd molar region,

- It is Common in female than male.
- It Radicular cyst is a chronic disease.
- Radicular cyst is caused by Alcohol, Tobacco Such as Cigar, Cigarette, betel, Pan chewing, Smoking.
- It is commonly Seen in Oral cavity.
- Radiographically it is a Radiolucent region in the apex of the root.
- It is a unicystic, multilocular cyst.

5) Radiographic Grid.

- Radiographic Grid is a Radiographic effect on the x-ray.
- Grid is the device to prevent Excessive Scatter of the x-rays.
- It limits the radiation scattering.
- Lowers the penetration of the Energy.
- There are other effects like collimator and filtration.
- Grid is a layer to prevent the Excessive scattered radiation.

6) Normal Radiopaque Landmarks of maxillary buccal

- Maxilla is two bone process, it has frontal bone, Nasal, Zygomatic and palatal bone.
- It form the maxillary sinus.
- Alveolar Extension and form socket for maxillary teeth - zygomatic bone
- Palate bone is joint bone with central suture.
- Nasal bone is formed base of maxilla.

- Radiopaque

- Nasal Septum : It is a radiopaque region, white, it is seen as a narrow pin point.
- Enamel : Enamel has the most radiopaque region. It has 94% of mineral content.
- Dentin
- Cementum
- Alveolar bone
- Inter proximal region



FIRST / SECOND / THIRD INTERNAL ASSESSMENT EXAMINATION

Name : DNYA P Reg. No. 2000974
Class : IV BDS Subject : Oral Medicine & Radiology Date : 13/12/23

SECTION

8) Protection of radiographic personnel.

- 1) position Distance rule.
- 2) Lead Collagen
- 3) Lead Coat
- 4) Standing behind Concrete wall
- 5) TLD - personal protection.
(Thermo)
- 6) wearing radiation protector outfit
- 7) Reduce the Exposure time.
- 8)

7) Manual processing of radiographs.

- 1) Film is taken out.
- 2) The films outer layer are removed in the dark room.
- 3) film is placed in the Developer for 60 seconds.

- with no light Entrapped or Entry.
- The film is then washed with water.
- Then placed in ^{fixer} Developer in intermittent.
- ~~over~~ There might be disadvantage if it is over developed or over fixed.

(2)

Short answers:

9) Ideal radiograph

- Ideal radiograph is the process of taking of x-ray in normal or general procedure of taking radiograph.

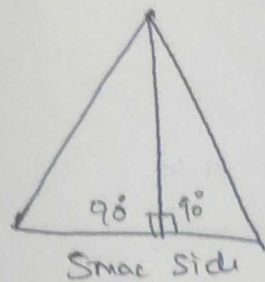
10) Bisecting angle technique.

- Bisecting angle technique is also called as Cieszynski's rule technique or Short angle technique.
- It is most commonly used technique.

Principle:

- Bisecting angle technique follows the Cieszynski's rule technique. It is the process when the two triangles are equivalent with one similar side.

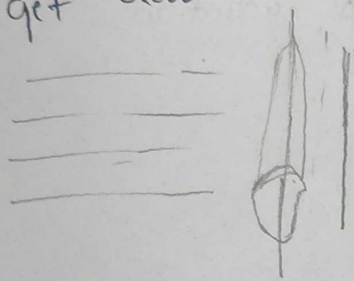
(2)



The film is placed parallel to the long axis of the tooth.

The ray is placed perpendicular to the film and long axis of the tooth.

There should be a gap between the film and the tooth, to get accurate image.



2) principle of radiographic interpretation.

- The film should be placed parallel to the tooth long axis in intra oral periapical radiograph.
- Film should be placed on the film should be placed opposite to the tooth surface.
- Film should be slightly bent and placed.
- Film should be placed on occlusal surface for occlusal radiograph.



12) a) Stochastic

- Stochastic effect is that is lower the penetration of energy.
- It is has tungsten in it.

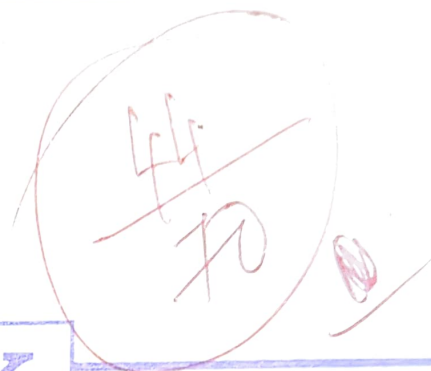
- Eg: Leukoplakia

b) Non-Stochastic effect

- It is determinist effect of radiation

13) Bone penetrating antibiotics.

Chandra's[®]



BLUE BOOK

Name MUSBAH NADEEM

Class PHD

Subject final year.

School Retest

- 1) Epidemiology - the study of Distribution and determinants of health related status or events in specified populations and the application of this study to the control of health problems

classification

1) Descriptive epidemiology

Analytical epidemiology

- ecological study
- cross sectional study
- case control study
- cohort study

Experimental epidemiology

- randomized controlled trials
- field trials
- community trials

Case control study.

- Also called as retrospective study
- involves two populations - one in case & another in control
- the unit is the individual rather than group
- comparison study
- It has three distinct features:-
 - Both exposure & outcome have occurred before start of the study
 - study proceeds backwards from effect to cause
 - it uses a control or comparison group to support or refuse an inference.

basic steps in case-control study

- Selection of cases and control : done from
 - case - hospital
 - General population
- Control - hospital control
 - relatives
 - neighbours control
 - General population
- Matching - defined as a process by which you select control in such a way that they are similar to case with regard to certain selected variables eg: sex, age etc
- measurement of Exposure
- Analysis and Interpretation

Advantages

- relatively easy to carry-out
- rapid and inexpensive
- requires comparatively few subjects
- No risk to subject
- No attrition problem
- Ethical problem is minimal

Disadvantages

- problem of bias
- selection of appropriate control group may be difficult
- we cannot measure incidence rate.

Date _____ Page _____

2) Epidemiological triad of Dental Caries consists of three factors i.e. Host, Agent & environment.

Host	Agent
• Age, Gender, SES Diet, Nutrition	Streptococcus mutans (MS) Dental plaque, xerostomia.

Environment

- protective factors - fluoridated waters, regular tooth brushing, dental home, regular application of fluoride varnish
- Contributing factors - sugary foods or drinks consumption mother / caregiver with caries. continues use of bottle regular snacking.

Host

- it is the person as well as the biological factors - intrinsic to that individual. Host affects susceptibility to disease
- prevalence of DC ↑ with age
- there is ↑ of 11% in DC when comparing 20-34 years of Age group to the 50-64 years of Age group.
- males, black and hispanic Adults and individuals with lower incomes and less education have more untreated decay compared to their counterparts.

Agent

- Streptococcus mutans - most common pathogen related to DC, they adhere to smooth surfaces & initiate the formation of dental plaque.
- lactobacilli promote acid production capable of destroying

tooth enamel.

- Vertical transmission - from mother to the child along with the mother's oral hygiene, PD disease and Socioeconomic status.
- Horizontal transmission - from a sibling or caregiver to the child has also been documented.

Environment

- External factors that cause / allow transmission of disease the environment can also be composed of protective factors that prevent the development of disease.
- ex - Sugary food / drink consumption, a mother / caregiver with caries, continuous use of bottle and frequent snacking

Diet

- people - role of diet as well as nutritional factors deserves special consideration because of observed differences in caries incidence of various population.
- physical nature of diet - Soft refined diet cling tenaciously to teeth and should not be removed due to general lack of mastication. It has been shown that mastication of food dramatically decrease number of culturable oral micro-organisms.
- carbohydrate content of Diet - monosaccharides, disaccharides, oligosaccharides & polysaccharides. glucose and fructose are monosaccharides while sucrose and lactose are disaccharides. Sucrose is the arch chimpinal of DC.

Vitamin D - children who are suffering from rickets may have slightly high calcium experience, other local factors are of great importance.

3) EFDA

referred to as expanded function dental assistant; EF Dental hygienist, expanded function auxiliary, Expanded duty dental Auxiliary.

- they are a dental assistant / dental hygienist who has received further training in duties related to direct treatment of patients. though still working under direct supervision of dentist.
- they undertake reversible procedures which can either be corrected or redone without undue harm to pts health.
- Duties of EFDA are:-
 - a) placement & removing of rubber dam
 - b) placement and removing of temporary restoration
 - c) placement and removal of matrix bands
 - d) Condensing as well as carving of Amalgam restoration in previously prepared teeth
 - e) placing of acrylic restoration in previously prepared teeth.
 - f) Applying final finish as well as polishing of above mentioned restorations.
- they seats the patient, performs initial inspection and then with x-ray available, call the dentist.
- EFDA helps dentists in four handed relationship.
- participate in all discussions & surgical procedures

4) - Yellow - Human Anatomical waste - Yellow coloured
Animal Anatomical waste containers or nonchlorinated
soiled waste plastic bags.
Expired / discarded medicine
chemical waste
chemical liquid waste
Discarded linen, mattress, bedding.
microbiology, biotechnology and other laboratory wastes.
Disposal - by incineration or plasma pyrolysis or encapsulation in hazardous waste treatment.

5) - Red - contaminated waste (recyclable) - red coloured nonchlorinated bag / container
Disposal - Autoclaving / microwaving / hydroclaving followed by shredding or mutilation or combination of sterilization and shredding treated waste to be sent to registered or authorized recyclers or for energy recovery.

- White - waste sharps - puncture proof, leak proof, tamper proof containers.

- Blue - glasswares - cardboard box with blue markings
Disinfection

5) IDA

- Indian dental association was formed in the year 1949 soon after the dentists act 1948 was passed by Indian parliament, before which it was known as all India

Dental association.

- the association was registered in delhi in 1967 with register number S/265

Composition

- the central council
- State branches
- local branches
- Defence branches

Objectives

- to promote & encourage advancement of dental and allied sciences.
- encouragement of members to undertake measurement of the improvement of public health & education in India
- to maintain the honour and dignity and uphold interests of dental profession and co-operation b/w the members thereof.

functions

- conducting meetings and conferences of the members of association and that of dental profession in general.
- publishing and circulating journals.
- opening of libraries
- Publishing papers related to dental researches.
- encourage educational campaign in matter of oral hygiene
- protect public from unethical treatment by unqualified practitioners.

6) Ethics

part of philosophy that deals with moral conduct and judgement

Major principles of ethics

- To do no harm (nonmaleficence)
- To do good (beneficence)
- Autonomy
- Justice
- Truthfulness
- Confidentiality.

Beneficence

- principle is attributed to Hippocrates
- health care individuals should place the interest of patient above his / her own interest.
- He or she has to plan a treatment or order an investigation only if necessary.
- It should be role of dentists and dental hygienists to benefit patients, and not cause any harm.
- the patient expects that the care provider will initiate beneficial action and that there is an agreement b/w the doctor and the patient that some good will occur
- At community level, one has to balance harms and benefits of the programmes and select the one that provides the greatest balance of good / evil

Date _____ Page _____

7) Randomization

- Drawing up a protocol
- Selecting reference in experimental populations
- Randomization
- manipulation & intervention
- follow up
- Assessment of outcome

① Drawing up a protocol

- It specifies the aims and objectives of the study, criteria for the selection of study & controlled groups. size of the sample the procedures for allocation of subjects into the study & control groups, appropriate treatment to be applied, standardization of working procedures and schedule upto the stage of evaluation of outcome of the study

② Selecting reference & experimental population

- reference / target population
- Experimental / study population

③ Randomization

- Statistical procedure by which the participants are allocated into groups usually called 'study' & 'control' grps. to receive or not to receive an experimental preventive / therapeutic procedures.

④ manipulation - intervention of the study grp by deliberate application & withdrawal or reduction of the suspected

casual factor as laid down in the protocol :

⑤ follow-up

- involves examination of experimental and control group subjects at defined intervals of time in a standard manner under the same given circumstances

Assessment

- final step in assessment of the outcome of the trial is in terms of
 - +ve result - Benefits of experimental measure such as reduced incidence / severity of the disease
 - ve result - severity & frequency of side effects & complications including death.

② Dental caries

- Dental caries is defined as an infectious microbiologic disease of the teeth that results in localized dissolution and destruction of the calcified tissue

Theories of caries etiology

A) Early theories of caries formation

- the legend of the worm - discovered on a clay tablet

B) Endogenous theories

- Humoral theory - the four elemental humors of the

Date _____ Page _____

body were blood, phlegm, black bile and yellow bile.
"Dental caries is produced by internal action of acid corroding tumors."

- vital theory - tooth decay originated like bone gangrene from within the tooth itself.

c) Exogenous theory.

→ chemical acid theory - Robertson proposed that dental decay was caused by acid formed by fermentation of food particles around teeth.

→ parasitic theory -

- In 1843 Exdl described filamentous parasites in the membrane removed from the tooth
- In 1847 Fichus observed filamentous organisms in the enamel cuticle and in carious lesion
- In 1954 Dubos postulated that micro-organisms can have toxic effects on tissue.

→ Miller's chemoparasitic theory.

proposed by W.D Miller in 1890. He made observation that many organisms can produce acid from fermentation of sugars. and showed that several oral micro-organisms have this property and lactic acid is one of the major acids formed. He also showed that extracted human teeth could be demineralized by incubating in mixtures of bread or sugar with human saliva.

→ proteolytic theory

- In 1947, Gottlieb suggested that the initial attack on enamel might be the destruction of organic material rather than the demineralization by acid
- the organic matrix would be attacked first before the mineral phase of the enamel.

→ proteolytic - chelation theory

- Skatz & Martin in 1955. It proposes that some of the products of bacterial action on enamel, dentin and food and salivary constituents can form chelates with calcium. A chelate is a complex b/w an ion (Ca) & two or more grps of complexing compound.

⑨ Dental Auxiliary

- A dental Auxiliary is a person who is given responsibility by a dentist so that he/she can help the dentist render dental care, but who is not himself/herself qualified with a dental degree.

Classification by WHO (1967)

1) Non operating Auxiliary

- a) clinical - assists in the clinical work but does not carry out any individual procedures in oral cavity.

b) laboratory - person who assists by carrying out certain technical, laboratory procedures.

2) operating Auxiliary

- person who not being a professional is permitted to carry out certain treatment procedures in the mouth under direction & supervision of dentist

Revised classification

1) Non operating Auxiliaries

- Dental surgery assistant
- Dental Secretary / receptionist
- Dental laboratory technician
- Dental health educators

2) operating Auxiliaries

- school dental nurse
- Dental therapist
- Dental hygienist
- Expanded function dental Auxiliaries.

1) cohort

- defined as a group of people who share a common characteristic / experience within a defined time period.

12 The Nuremberg code (1947)

- set of research ethical principles for human experimentation set as a result of Nuremberg trials at the end of WWII.
- 1 - in response to the inhumane Nazi human experimentation of unconsenting prisoners and detainees during WWII

13 COPRA

- the Consumer protection Act, 1988 that came into force on 15th April 1987 is a milestone in the history of socio-economic legislations enacted for the protection of consumers.
- 2 - provide a redressal in nature
- simple, speedy, inexpensive redressal to the consumers grievances and relief of a specific nature.

14 DCI

- to conduct meetings and conferences of the members of association and that of Dental profession in general
- Publishing and circulating journals.

15

total sugars

intrinsic

extrinsic

- milk sugars
- non milk extrinsic
sugars

Dayananda Sagar College of Dental Sciences & Hospital

6285

Kumaraswamy Layout, BENGALURU - 560 078.

^{Retest} FIRST / SECOND / ~~THIRD~~ INTERNAL ASSESSMENT EXAMINATION

Name: Megharshi Reg. No. 20D0914

Class: IV BDS Subject: Oral Surgery Date: 13/12/24

SECTION

Short
Long Essay

41
70

① Fractures.

Local Anesthesia.

composition:

- lignocaine: Anesthetic agent
- Adrenaline: Vasoconstrictor.
- Sodium metabisulfite: Preservative.
- Methyl Paraben: Preservative
- Sodium chloride isotonic solution
- Thymol: Fungicide.
- Distilled water: Dilution.

② Types of Heat Direction.

- Radiant
- Modified radiant
- Selective neck.
- Extended neck.

(13) Dry socket

Also known as alveolar osteitis.

Postoperative pain is around the alveolar socket of tooth accompanied by partial or total disintegration of the intra-alveolar

-2- clot with foul smell.

(14) Types Hemophilia.

Hemophilia A

Hemophilia B

-2- Hemophilia C
Parahemophilia.

(15) GMLA

Generic name of local Anesthetic.

-2- consists of 51. gram containing 25 mg/g
each of lidocaine & tetracaine.

Long Essay

① Fracture.

Defined as break or disruption in the continuity of bone or disruption of normal architecture of bone.

Classification of Mandibular Fracture.

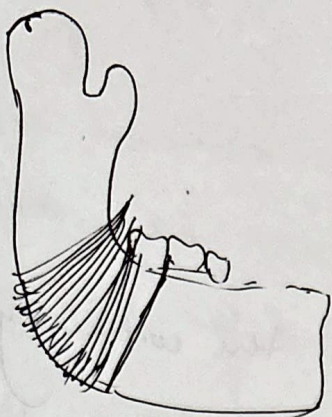
Karargian, Conner:

- ① Class I: teeth present on both side of fracture line.
- ② Class II: teeth present only on one side.
- ③ Class III: Patient is completely edentulous.

Mandibular Angle Fracture

- ① Vertically favourable.





vertically unfavourable

→ posterior fragment will be pulled lingually, if vertical direction of fracture line favours the unopposed action of medial pterygoid.

→ favourable fracture makes the stabilisation easier.

Treatment

- ① Direct wiring across fracture line
- ② Transosseous wiring can be done through intra-oral / extra-oral approach.

Holes are drilled in bony fragment on either side of fracture line.



20-gauge ss wire passed into the holes

Free end of wire ^{are} are ligatured & twisted.

↓

Twisted ends are cut short & tucked in the nearest drill hole.

-b-

② Impaction

defined as tooth which is completely or partially unerupted is positioned against another tooth, bone or soft tissue so that its further eruption is unlikely.

Theories of impaction

① Orthodontic theory. → Jaws develop in downward & forward

② Nodden's phylogenic theory. direction while teeth move in forward direction.
more functional mouth opening
fore → better the development of jaw.

③ Mandibular theory

An individual may inherit small jaws from one parent & complement of large teeth from the other.

④ Pathological theory

⑤ Endocrinal theory

Classification of Impaction

- ① Soft tissue
- ② Hard tissue.

-6-

Short Essay

③ Types of Extraction.

① Intra-alveolar extraction

→ Tooth is extracted in simple manner using forceps

② Transalveolar extraction

→ Refers to surgical removal of tooth w/ root that involves bone removal

④ TNM staging.

T₁ → limited to mucosa & submucosa.

T₂ → Extension into but not through muscularis propria

T₃ → Invasion of pericardial fat

T₄ → Invasion of adjacent structures

$N_0 \rightarrow$ No lymph nodes involved.

$N_1 \rightarrow$ Fewer than four regional LN

$N_2 \rightarrow$ >4 LN involved.

$N_3 \rightarrow$ Distant nodes involved

$M_0 \rightarrow$ No metastases.

$M_1 \rightarrow$ Distant metastases.

⑤ Enucleation

- $\rightarrow$ Involves complete removal of cyst lining & its contents
- $\rightarrow$ Intraoral approach used.

Indications

- $\rightarrow$ cyst with high recurrence
- $\rightarrow$ small cyst.

25' manipulation

- $\rightarrow$ In this method a window of 1 cm is made into the cyst & lining is sutured to oral mucosa proximal to convert cyst into a pouch exposing cyst lining to oral cavity cricoid to decompress the cyst.

⑥ Syncope

Transient loss of consciousness due to cerebral anoxia caused by a reduction in blood supply to brain

signs & symptoms

→ Nausea.

→ light headedness.

→ Hypotension

→ confusion.

→ weakness

→ sweating.

management

Stop all treatments, make the patient lie flat with legs raised.

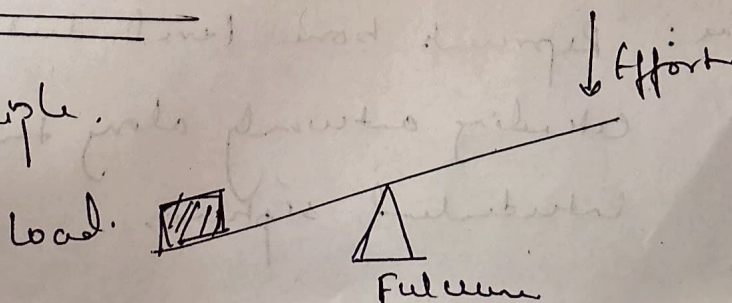
Can give supplemental oxygen.

BCS can be prevented.

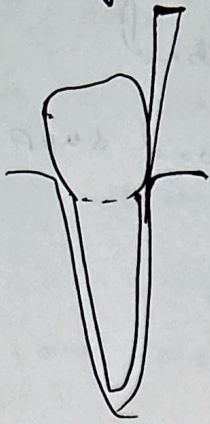
Ammonia salts breathing.

Principles of lever.

① - Lever principle.

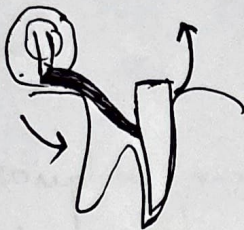


② wedge principle.

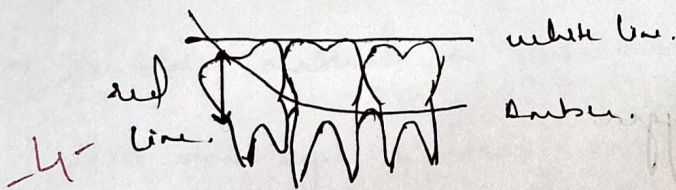


2'

③ wheel & axle principle



⑧ WAR lines.



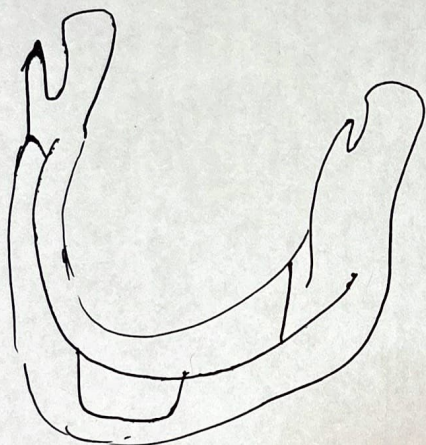
wheel line: line joining occlusal surfaces of cusps of all upper molars extending up to ramus

Axle line: Represents bone level distal to 3rd molar, extending anteriorly along the crest of interdental septum.

led line: Drawn perpendicular from Angle line to
imaginary point of application of elevator.
on 3rd molar.

⑨ Charpy's line

Charpy put forward the line where peripheral
screws have to be placed



Revision Test

Dayananda Sagar College of Dental Sciences & Hospital

Kumaraswamy Layout, BENGALURU - 560 078.

7375

FIRST / SECOND / THIRD INTERNAL ASSESSMENT EXAMINATION

Name: Jyoti Prakash Das

Reg. No. 19D0078

Class: IV BDS

Subject: Endodontics

Date: 26/2/24

SECTION

LONG ESSAY

1. Clarify endodontic instruments. Write in detail about standardization about endodontic instruments.
2. Clarify about obturating techniques. Thermoplasticized method of obturation.

SHORT ESSAY

3. Electronic Apex locator. Mechanism of Action.
4. Clarify post and core. Explain in detail about fiber post.
5. Describe walking bleach technique. Note on double seal.
6. Ideal requirements of intracanal medicaments. Note on Calcium hydroxide.
7. Clarify traumatic injuries of oral structure.
8. Discuss various root canal filling material in endodontic treatment.
9. Clarify root canal sealer. Explain in detail about resin sealer.
10. Management of acute apical abscess.

SHORT ANSWERS

11. Biocer dentin.
12. Cr-Cr driver.
13. Sodium hypochlorite.
14. K-file.
15. pulse oxygenometry.

Ans 11. Biodentin.

- It is used for direct pulp capping. It is superior to calcium hydroxide and more biocompatible.
- It helps in formation of dentinal bridge.
- It is also used to form calcific barrier during Apexification.

Ans 12. G-G drills also known as Gates-Glidden drills.

- Used for cleaning and shaping of root canals.
- It is a engine operated drill which is used to enlarge the canal orifice.
- Used in crown-down method of root canal treatment.

Ans 13. Sodium hypochlorite.

- It is used as an irrigant in the process of root canal treatment.

Advantages —

- Helps remove necrotic pulp and debris.
- Widely available and economic.

Disadvantages • provides good lubrication.

- Highly irritant to eyes and can cause cellulitis if reached periapical tissue.
- Can bleach cloth if spilled.
- Does not remove smear layer.

Ans 14. H-fike.

- They are endodontic fike. which is used for debritement of pulp in root canal treatment.
- They are marked from 10 to 25 in increments of 5.

②

Ans 15. Pulse ~~Per~~ Orymetry is a non-neural method of testing vitality of pulp.

- Pulse orymetry is a recent advancement in endodontics.

②

SHORT ESSAY

Ans 3. Electronic Apex locator.

- They are used for non-radiographic determination of working length.

Procedure Parts of Apex locator.

- Lip clip.
- File clip.
- Device.
- ~~Wiring to~~ Cord for connecting all three.

Procedure

- First the lip clip is placed on the lip adjacent to the tooth whose working length is to be determined.
- File clip is placed on the ~~fike~~ endodontic fike.
- Slowly the fike is placed inside the prepared tooth.
- The device is turned on and it starts beeping.

- Once it reaches the apex it becomes louder.

Mechanism of Action

- The tip of file touches different readings on the device.
- When it touches the CEJ it becomes the loudest.

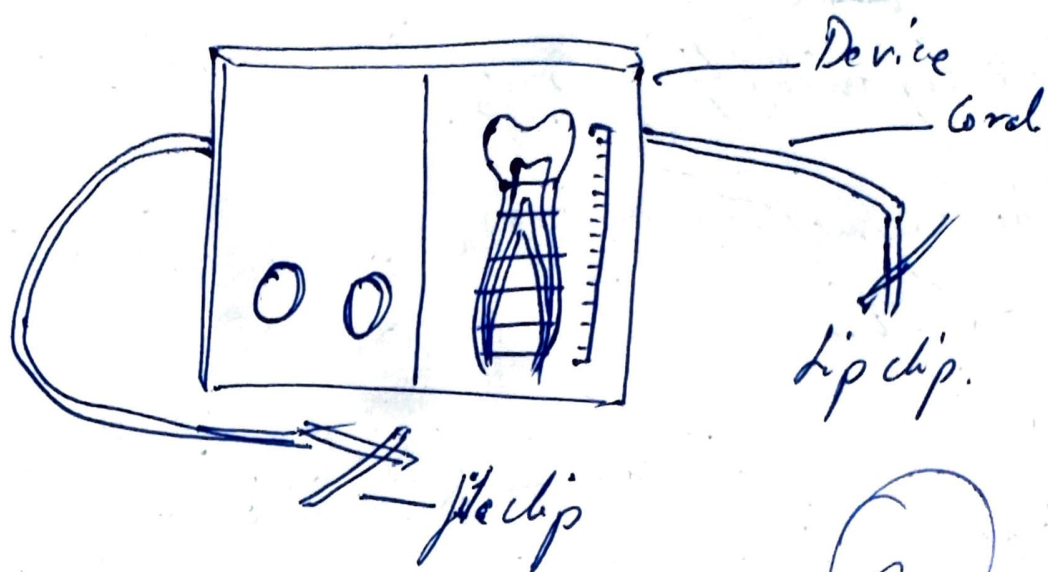


Fig - Apex locator.

Types of Apex locators -

1. First Gen.
2. Second Gen.
3. Third Gen.
4. Fourth Gen.
5. Fifth Gen.
6. Sixth Gen.

Ans 4. Post and Core

- It is process of inserting a post in the root canal after obturation is done and filling it ^{with} core build up material.
- It is indicated for root stumps ~~at well~~ as well.

Classification —

1. Fiber post.
2. Metal post.
 - Stainless steel
 - Titanium.

Fiber post

- They are made up of fiber and are very durable.
- They have good compression strength and are widely used.

Procedure

- After cleaning and shaping of root canal. Obturating materials are placed in the canal. after which canal ~~space between~~ lateral walls are widened for insertion of post. tooth
- After post insertion ~~it~~ is filled with composite resin and cured.

Advantages

- It increased durability of tooth
- Increased resistance to occlusal forces.
- ~~Also~~ provide structural support for the crown.

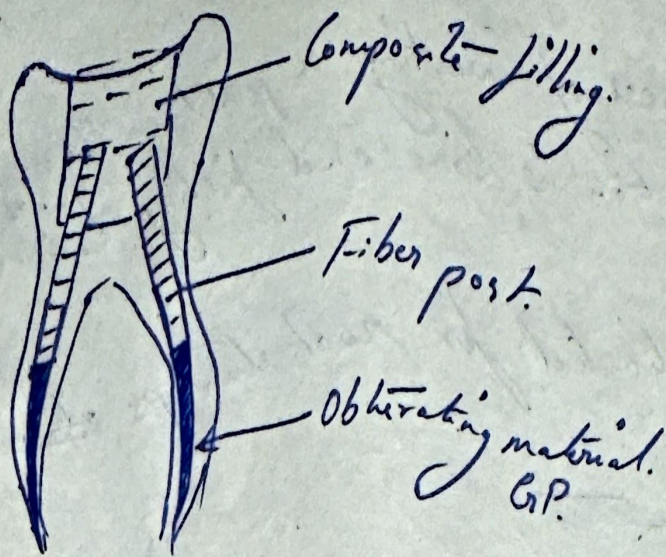
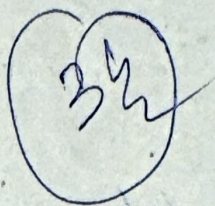


Fig - Post and Core.



- Ans 6. Ideal requirement of intracanal medicaments. —
1. It is provide both bacteriocidal and bacteriostatic effect.
 2. It should flow easily.
 3. It should be non toxic.
 4. It should not cause irritation.
 5. It should not ~~cause~~ be mutagenic or carcinogenic.
 6. Provide complete disinfection of canal.
 7. Cheap and readily available.

Types of Intracanal medicaments used. —

1. Calcium hydroxide.
2. MTA. ✓
3. Iodoform.
4. Triple antibiotic ~~paste~~ paste.
5. Eugenol.

Calcium hydroxide

1. It is the most commonly used intracanal medicament.
2. ~~It is the most commonly used intracanal medicament.~~ MTA is superior to calcium hydroxide. MTA is more bio compatible.
3. Mixed with saline water in ~~1:5 ratio~~ 3:1 ratio to form a paste.
4. Also used for direct and indirect pulp capping, pulpotomy, Apexification etc.
5. Promotes reparative dentin or dentinal bridge formation.

34

Ans 7. Traumatic injuries to oral structure — Ille's classification.

Class I — Enamel fracture

Class II — Enamel and dentin fracture

Class III — Enamel, dentin and pulp.

Class IV — Non-vital.

Class V — Avulsion

Class VI — Root fracture without crown.

Class VII — Displacement of tooth without fracture.

Class VIII — Crown on mass.

Class IX — Traumatic injuries to deciduous teeth.



Ans 8. Various root end filling material —

1. Sealers — They provide bonding between obturating material and canal walls.

— Seal off the accessory canals.

2. Obturating material

— These are the materials used for obturating the canal eg - Gp.

3. Calcium hydroxide —

— Used during the process of Apexification and temporary filling of root canal or pulpectomy.

4. MTA - Mineral Trioxide Aggregate.

— Used for pulpectomy in devitalized tooth.
— For temporary filling of canal.

Ans 9 • Root canal sealers are used for ~~sealing~~ providing bonding between obturating material and canal walls.

• Seal off the micropores present.

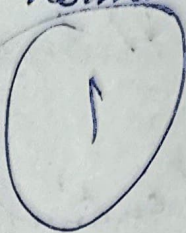
Advantage —

1) Prevents micro leakage.

2) Provides ~~seals~~ Hermetic seal.

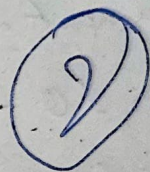
Resin seals

They are cured chemically or light cured.
They provide good hermetic seal against microorganism.



Ans 10. Management of Acute apical abscess.

1. Anesthetise the tooth.
2. Isolation or rubber dam is ~~applied~~ applied.
3. Access cavity is prepared with No. 4 round bur
4. Cavity should be funnel in shape.
5. Canal Orifices are located and
6. Pulp debridement is done using step back preparation or Crown down preparation using hand file.
7. Irrigate the canals with sodium hypochlorite
8. If tissue pressure or exudate is more a hole is made into apical foramen to release any force from jaw or tissue exudate. Later calcium barrier is formed with calcium
9. ~~Canal~~ With the help of ~~rubber~~ cotton pellet medicament is applied.
10. Obturating material is placed along with sealers
11. Cavity is sealed with ZOE and patient is sent. After 6-10 days patient is recalled.
12. ^{Final} Filling done with composite resin



LONG ESSAY

Ans 1 Classification of Endodontic Instruments. —
Grossman's Classification

- i) Explorer. — Smooth broach and Reaps.
- ii) Debridement and entering. — files, broaches, Reamers.
- iii) Cleaning and Shaping. — ~~Reaps~~, Engine driven files, broaches, reamers.
- iv) Obturating — ~~Caps~~ plugs and spreaders.

Standardization of Endodontic instruments.

Size of

1. Instruments are marked from 10 to 100.

From 10 - 60 it has increments of 5 units.

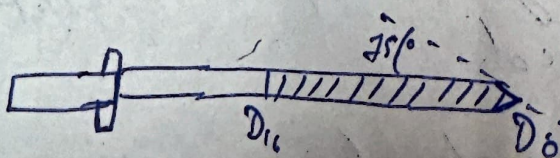
From 60 - 100 it has 10 unit.

Larger instrument were marked from 5 - 140.

2. The length of instrument - 21, 25, 28, 30.

3. Tip of instrument should be $75 \pm 15^\circ$.

4. Colour coded for easy instrumentation and identification.



Ans 2. Classification of Obturating technique. —

i) Cold lateral Compaction

ii) Warm Compaction.

— Lateral.

— Vertical.



iii) Thermoplastic ~~Hot~~ Gutta percha.

iv) Castown core.

~~Thermoplastic Obturating technique~~ —

- This technique of compaction Gutta percha is done

~~Process~~

Thermoplastic Obturating technique.

- Obtrall obturating material is taken with lateral compaction.

— x —

RETEST

- ① A part of removable partial Denture which assists the Direct retainers in preventing Displacement of Distal extension Denture bases by functioning through lever Action of the opposite side of fulcrum line

(Principle of Direct retainers)

- prevent Displacement of Denture base in two ways

Classification of Indirect retainers

- 1) Auxillary occlusal rest
- 2) Canine extension from the occlusal rest
- 3) Canine rest
- 4) Continuous bar retainers & linguo-plates
- 5) Modification areas
- 6) Rugae support
- 7) Direct indirect retention
- 8) Indirect retention from major connector
- 9) Inasal rest
- 10) Embrasure hook
- 11) Double lingual bar / Kennedy's bar.

lever - A lever is a long bar with a single support around which it rotates when a load is applied to any one of its ends.

- the support around which the lever rotates is called the fulcrum.

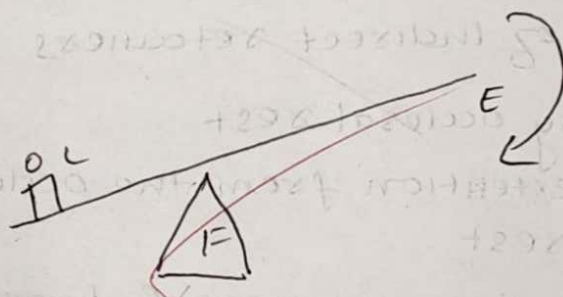
lever - 3 types

1st order lever

2nd - order lever

3rd - order lever

first order lever



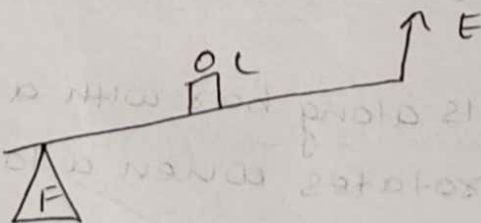
fulcrum - centre

resistance - At one end

effort - Another end.

• this type of lever can occur in pt with Distant Extension partial dentures.

2nd order lever.



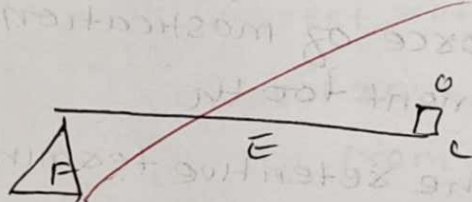
fulcrum - at one end

axis - centre

effort - on one another end

→ this type of lever occurs in indirect retention of RPD

3rd order lever



fulcrum - one end

Resistance - opposite end

effort - centre

→ this type of lever action does not occur in partial denture

principles of using indirect retainers.

- more than one fulcrum may be present
- indirect retainers must be placed as far as possible from distal extension base, for leverage advantage.
- most effective location for indirect retainer is incisor region, but due to this poor strength canines / premolars are used.

2) Rest

- A rigid extension of RPD that contact the occlusal, incisal, cingulum / lingual surface of tooth / restoration, the surface of which is commonly prepared to receive it.

functions

- provide resistance against occlusal load
- to Direct force of mastication parallel to long axis of Abutment tooth
- maintain the retentive terminal of clasp arm in its intended position.
- to close a small space b/w teeth by bringing that space with occlusal rest.

② Maxillary Major connectors

- A part of RPD which the components one one side of the arch to the component on the opposite side of the arch.

types

└ Single palatal bar

Single palatal strap

Anterior posterior bar

U Shaped palatal connector

combination anterior & posterior palatal strap type connector

→ palatal plate connector

⑤ RPI

the current concept of increasing retention and stability of RPD by changing fulcrum location is known as RPI

R - mesio-occlusal rest

P - proximal plate

T - bar of clasp assembly

⑥ Swing lock ~~RPD~~ RPD

• It is used in RPD when a number of remaining teeth is too few to support a conventional design

Indications - Missing key Abutment
when the no. of natural teeth is less.

Dayananda Sagar College of Dental Sciences & Hospital

Kumaraswamy Layout, BENGALURU-560 078

FIRST / SECOND / THIRD INTERNAL ASSESSMENT EXAMINATION

Name : Bhumnika M.S. Reg. No. : 8092

Class : IV BDS Subject : Pedodontics Date : 2/05/2024

LONG ESSAY.

① Classification of traumatic injuries.

Ellis and Davy classification.

Class I - Simple fracture of crown involving only enamel with little or no dentin.

Class II - Extensive fracture of crown involving enamel and dentine not exposing pulp.

Class III - Extensive fracture of crown involving enamel, dentine and pulp.

Class IV - Non-vital tooth with or without loss of crown structure.

Class V - Avulsion.

Class VI - Fracture of the root with or without loss of crown structure.

Class VII - Displacement of tooth with neither crown nor root fracture.

Class VIII - Fracture of crown en masse.

Class IX - Traumatic injuries of primary teeth.

Avulsion and its management.

Avulsion used to describe complete displacement of tooth from its alveolus.

- Also called as extra-articulation and it most often involves the maxillary teeth.

Clinical features :-

- (i) Bleeding socket with missing teeth.

~~(ii)~~

Radiographic features :-

- (i) Empty socket
- (ii) Associated with bone fractures.
- (iii) If the wound is recent then lamina densa is visible otherwise it is obliterated.

Management :- Depends upon the extraoral time.

- (i) Extraoral time less than 20 minutes.

Open apex

- Revascularization of pulp as well as root development is possible.
- Soak the tooth in ^{mg of} doxycycline in 20mg of saline for 5 minutes.
- Rinse the root with saline without disturbing the PDL fibres and replant tooth gently into the socket.
- Follow-up visit every month till apex is closed.

Closed apex

- Revascularisation is not possible.
- Rinse the root with saline or water without disturbing the PDL fibres. & replant tooth gently into the socket.

② Extraoral time 20-60 minutes.

Open apex

- Soak the tooth in appropriate medium like saline or Hank's balanced salt solution (HBSS) solution for 30 minutes.
- Then soak in doxycycline for 15 minutes.
- Follow up every month.
- Endodontic treatment done in later stages if pain or swelling occurs.

Closed apex

- Soak the tooth in appropriate medium like saline or HBSS solution for 30 minutes.
- Additional soaking in doxycycline for 15 minutes.
- Follow up every month.

③ Extraoral time more than 60 minutes.

Open apex

- When the root is dried more than 1 hour, soaking in the storage medium is not effective as almost all

periodontal cells would have been dried.

- Soak the tooth in citric acid for 5 minutes followed by 2% stannous fluoride for 5 minutes and later in doxycycline for 5 minutes.
- Perform the endodontic treatment extraorally.
- After completing RCT seal the blunderbuss open apical extraorally and replant the tooth gently into the socket.
- Follow up every month.

Closed apex

- When the root is dried more than 1 hour, soaking in the storage medium is not effective.
- Soak the tooth in citric acid for 5 minutes followed by 2% stannous fluoride for 5 minutes and later in doxycycline for 5 minutes.
- Perform the endodontic treatment extraorally.
- Follow-up visit must every month.

Preparation of the socket

- After avulsion, the socket should be kept undisturbed till reimplantation of the tooth.
- Socket should be slightly aspirated if blood clot is present.

Storage media for avulsed teeth

- Milk
- Hank's balanced salt solution (HBSS) *In detail*
- Saliva
- Coconut water
- Viapran
- Contact lens solution.
- Egg white

(7/2)

② Topical fluoride refers to fluoride that is applied directly to the surface of the teeth to help prevent tooth decay and strengthen tooth enamel.

Various topical fluoride agents

* Stannous fluoride.

* APF

* Amine fluoride.

Topical fluorides can be divided into:

Professionally applied fluorides

- Neutral NaF
- Stannous fluoride
- Acidulated phosphate fluoride

Self applied fluorides.

- Tooth brushing dentifrices
- Tooth brushing solutions
- Mouth rinses

Sodium fluoride

Method of preparation :-

- 20% NaF solution can be prepared by dissolving 20 g of NaF powder in 1 L of distilled water in plastic bottle.

Method of application :

Cleaning and polishing of the teeth

↓

Quadrants are isolated with cotton rolls and the teeth are dried thoroughly.

↓

NaF is then applied with cotton applicators on one quadrant

↓

Permitted to dry on the teeth for about 4 min

↓

The procedure is repeated for the remaining quadrants

↓

Patient is instructed to avoid eating, drinking or rinsing for next 30 minutes.

↓

Second, third and fourth applications are given at weekly at ages 3, 7, 11 and 13 years.

Mechanism of action.

When NaF is applied topically, it reacts with hydroxyapatite crystals to form CaF_2 .

↓

This occurs because once a thick layer of CaF_2 gets formed it interferes with the further diffusion of fluoride from the topical fluoride solution.

↓

CaF_2 reacts with hydroxyapatite to form fluoridated hydroxyapatite which increases the concentration of surface fluoride.

Acidulated Phosphate fluoride.

Method of preparation.

- Prepared by dissolving 20g of NaF in 1L of 0.1 M phosphoric acid. To this 50% hydrofluoric acid is added to adjust the pH at 3.0 and F concentration at 1.23%.
- A gelling agent like methylcellulose is to be added to the solution and the pH is to be adjusted between 4 and 5.

Method of application:

After prophylaxis, the teeth are isolated with cotton rolls on both lingual and buccal sides



For the application of gel, position the patient upright and provide saliva ejector.



Place enough gel to fill $\frac{1}{3}$ rd of the trough area of tray so that it is sufficient to cover dental arches.



Place loaded tray over the arch and squeeze the buccal and lingual surfaces forcing gel between them and allow tray to remain in mouth for 4 minutes.



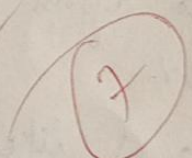
Instruct the patient to expectorate immediately and avoid drinking and eating for the next 30 minutes



Recommended frequency of APF topical application is semiannual.

Mechanism of Action.

2. about



When APF is applied on the teeth, it initially leads to dehydration and shrinkage in the volume of hydroxyapatite crystals.



Hydrolysis & formation of intermediate product



DCPD $\rightarrow$ highly reactive with fluoride $\rightarrow$ formation of fluorapatite

③ - Management of anterior crossbite.

Anterior crossbite is a condition in which one or more maxillary anterior teeth are in lingual relation to the mandibular teeth.

- Should be treated at an early stage, if not treated early it has the potential of growing into skeletal malocclusion and may later require major orthodontic treatment combined with surgical procedure.

Types of crossbites

- Dentoalveolar anterior crossbite
- Functional anterior crossbite
- Skeletal anterior crossbite

Dentoalveolar anterior crossbite

- Manifested as one or more incisors in crossbite and usually occurs due to over retained deciduous teeth.
- The most common appliance used for its correction is posterior bite plane with Z-spring.

Tongue blade therapy

The blade is placed in such a manner that it rests on the mandibular incisors opposing the tooth in crossbite, and the patient is asked to bite with a constant pressure on the tongue blade.

- The proper use of the tongue blade for an hour or two a day for 10-14 days is sufficient to deflect the lingually erupting tooth into proper relationship.

Catalan's appliance.

- It is used to correct the crossbite of young patients whose permanent molars have not erupted and deciduous molars are lost.
- It is constructed at 45° angulation on the lower anterior by acrylic or cast metal.

Diagram

Reverse stainless steel crown.

An anterior stainless steel crown is adapted on the incisor in crossbite and cemented in reverse manner i.e., the palatal surface of crown faces labial surface of the tooth. When the patient bites this metal guide plane, the lower incisor moves lingually and upper incisor labially.

Fixed mechanotherapy.

Functional Anterior crossbite.

The presence of occlusal prematurities deflects the mandible into a more forward path of closure. So type of crossbite results from the functional shift of the mandible.

Commonly seen in pseudo Class III type of malocclusion and are treated by eliminating the occlusal prematurities.

Skeletal Anterior crossbite.

- Occurs due to skeletal discrepancies in growth of maxilla or mandible.

This type of crossbite is best intercepted by growth modification using myofunctional or orthopedic appliance.

4

④ ART

The atraumatic restorative treatment (ART) is a procedure based on removing carious tooth tissue using hand instruments alone and restoring the cavity with an aesthetic restorative material.

Essential instruments and materials.

- i) Mouth mirror.
- ii) Explorer
- iii) Tweezers
- iv) Spoon excavator
- v) Dental hatchet
- vi) Carver.
- vii) Mixing pest and spatula
- viii) Cotton wool rolls.
- ix) Cotton wool pellets.
- x) Petroleum jelly.
- xi) Plastic mylar strip wedges.

Procedure :-

The tooth is isolated with cotton rolls



The tooth surface to be treated is cleaned with a wet cotton pellet



The entrance of the lesion is slightly widened by hand instruments to remove gross overhanging unsupported enamel rods with enamel hatchet.



The dental caries is removed by using either the small or medium size spoon shaped excavator.



If necessary provide pulpal protection by calcium hydroxide paste.



The cavity surface along with occlusal margins are cleaned.



The cavity is acid-etched.



GIC is mixed.



The mixed GIC is inserted into the cavity and slightly overfilled.



The gloved finger, which is smeared with petroleum jelly is pressed on top of the entire occlusal surface and slight pressure is applied.



The bite is checked.



Excess material is removed with a sharp carver.



The filling is covered with petroleum jelly.



Patient is instructed to not bite on the tooth for at least half an hour.

(X/12)

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FIRST / SECOND / THIRD INTERNAL ASSESSMENT EXAMINATION

Name : Reg. No. : **8093**

Class : Subject : Date :

⑤ Apenification V/s Apenigogenesis.

Apenification is defined as chemically induced root formation by calcium hydroxide or CMCP in non vital immature, blunder-bus canals of young permanent teeth.

Apengensis is defined as the vital pulpotomy procedure undertaken for young permanent teeth with calcium hydroxide which lays down a dentinal bridge thereby allowing the radicular portion of the pulp for root elongation or lengthening.

Apengogenesis

i) It is defined as the treatment of vital pulp to permit growth of root and closure of apex.

ii) Only coronal pulp tissue is removed radicular pulp is prevented from damage.

Apenification

ii) It is defined as induction of apical closure of a non-vital young permanent tooth.

ii) The entire pulp is removed thoroughly.

iii) $\text{Ca}(\text{OH})_2$ is placed over amputated root stumps.

iv) $\text{Ca}(\text{OH})_2$ lays down a dentinal bridge.

v) The apex formed by normal growth of roots.

iii) The entire pulp chamber is filled with $\text{Ca}(\text{OH})_2$.

iv) $\text{Ca}(\text{OH})_2$ induces formation of an apical barrier.

v) Apex formation is due to formation of osteocementum / bone like tissue.

3/2

⑥ Antibiotic prophylaxis in patients with CVS disorders

Antibiotic prophylaxis in children with CVS disorders is commonly used to prevent infections, particularly in the context of procedures or conditions that put them at risk for bacteremia, such as in dental work.

Indications for endocarditis prophylaxis

High risk conditions include.

- Congenital heart defects (e.g., unrepaired cyanotic congenital heart disease).
- Prosthetic heart valve or a prosthetic material used in valve repair.

Commonly used antibiotics

- Amoxicillin is the drug of choice. Dose
- If allergic to penicillin, alternatives like clindamycin, cephalexin or azithromycin may be used.
- The prophylactic dose is typically administered 30-60 minutes prior to the procedure. Dose
- For children with heart failure or those on immunosuppressive therapies, antibiotic prophylaxis may also be indicated during certain procedures to prevent infections due to compromised immunity.
- Prophylaxis is generally reserved for high-risk patients and specific invasive procedures.
- It is essential to consult with the child's cardiologist or pediatrician to determine the appropriate course of action based on ~~updated~~ the condition of the patient.
- Routine prophylaxis for most common procedure is no longer recommended, but for certain high-risk patients, targeted prophylaxis remains an important preventive measure.

⑦ Inferior alveolar nerve block in children.

- When deep operative or surgical procedure are undertaken for the mandibular primary or permanent teeth the inferior alveolar nerve must be blocked.
- Olsen reported that the mandibular foramen is situated at a level lower than the occlusal plane of the primary teeth of the paediatric patient. Therefore the injection must be made slightly lower and more posteriorly than for an adult patient.
- An accepted technique: Thumb is laid on the occlusal surface of the molars, with the tip of the thumb resting on the internal oblique ridge and the ball of the thumb resting in the submolar fossa.
- Lim support during the injection procedure can be given when the ball of the middle finger is resting on the posterior border of the mandible.
- The barrel of the syringe should be directed on a plane between the two primary molars on the opposite side of the arch. It is advisable to inject a small amount of the solution as soon as the tissue is penetrated and to continue to inject minute quantities as the needle is directed towards the mandibular foramen.

- The depth of insertion averages about 15 mm but varies with the size of the mandible and its changing proportions depending on the age of the patient. Approximately 1 ml of the solution should be deposited around the inferior alveolar nerve.
- One can block the lingual nerve by bringing the syringe to the opposite side with the injection of a small quantity of the solution as the needle is withdrawn.
- For the removal of mandibular permanent molars or sometimes for the placement of a rubber dam clamp on these teeth, it is necessary to anesthetize the long buccal nerve.
- A small quantity of the solution may be deposited in the mucobuccal fold at a point distal and buccal to the indicated tooth.
- All facial mandibular gingival tissue on the side that has been injected will be anesthetized for operative procedures.

Signs
Indications
Contraindications

(3)

⑧ Early and late mesial shift.

The permanent teeth erupting in place of previously deciduous teeth are the successional teeth.

This phase begins at around 6 years with the eruption of 1st permanent molars and lasts till about 12 years of age.

• It can be divided as.

I. First transitional period.

a. Emergence of the first permanent molars.

b. Incisors transition.

II. Interruptional period.

III. Second transitional period.

• Emergence of cuspids, bicusps and the second permanent molars.

• Establishment of occlusion.

I. First transitional period :-

Characterised by emergence of 1st permanent molars and exchange of deciduous incisors with permanent incisors.

• If the 2nd deciduous molar is in flush terminal plane:

Then the erupting permanent molar will also be in the same relation. For this to change into Class I relation the molar has to move 2-3 mm in a forward direction, this is accomplished by :-

- Early mesial shift:

- This occurs during early mixed dentition period. The eruptive forces of 1st permanent molars are strong enough to push the deciduous molars forward in the arch thereby utilizing the primate spaces and thus establishing class I relationship.

- Late mesial shift:

Many children lack primate spaces and have a non-spaced dentition and thus erupting permanent molars are not able to establish class I relation even as they erupt.

In those cases, the molars establish class I relation by drifting mesially and utilizing the leeway space after eruption of deciduous molars and this is called late mesial shift.

4

⑨ Band and loop space maintainer.

It is a unilateral, non-functional, passive fixed appliance indicated for space maintenance in the posterior segments when single tooth is lost.

Indications

- It is usually indicated for preserving the space created by the premature loss of single primary molar.
- Bilateral loss of single primary molar before eruption of permanent incisors. This is because the developing succedaneous tooth buds are placed lingually to permanent incisors so other space maintainers like lingual arch can lead to obstruction of these teeth.
- It is also indicated when second primary molar is lost after the eruption of first permanent molar.

Contraindications:-

- An occlusion that is extremely crowded or already exhibits marked space loss.
- High dental caries activity.
- Replacement of primary anterior teeth.
- Replacement of primary second molar in the primary dentition without partial clinical eruption of permanent first molar.

- Replacement of primary second molars in transitional dentition with the permanent molar banded.

Modification

- i) Crown and loop :- Same as band and loop but a stainless steel crown is used on abutment tooth instead of a band.
 - ii) Crown band and loop :- Stainless steel crown is first placed on abutment tooth and then it is banded.
 - iii) Mayne's space maintainer :- Band and loop but the loop is halved with buccal loop eliminated and only the lingual extension given.
 - iv) Reverse band and loop :- Given when there is premature loss of primary second molar and the permanent molars have not erupted fully to support a band.
 - v) Band and bar :- Prevents eruption of premolar.
 - vi) Long band and loop.
 - vii) Banded band and loop space maintainer.
- With the use of acid-etch technique light curing composite systems.

④ Dig's

⑩ Indications for use of conscious sedation.

A minimally depressed level of consciousness that retains the patient's ability to independently and continuously maintain an airway and respond appropriately to physical stimulation or verbal command and that is produced by a pharmacological or non-pharmacological method or a combination thereof.

Indications:-

- i) Lack of psychological or emotional maturity.
- ii) Medical, physical, cognitive disability.
- iii) Fearful, highly anxious, or obstreperous patients.
- iv) A patient whose gag reflex interferes with dental care.
- v) A cooperative child undergoing a lengthy dental procedure.
- vi) Certain patients with special healthcare needs.
- vii) A patient for whom profound local anaesthesia cannot be obtained.

Sedation techniques:-

- Inhalation sedation
- Oral sedation.
- Intramuscular sedation.

- Sub-mucosal sedation.
- Intravenous sedation.
- Rectal sedation.

Drugs used for conscious sedation:

Opioids

- Morphine
- Meperidine.

Benzodiazepines.

Diazepam.

Midazolam

Barbiturates

Pentobarbital

Methohexital.

Ketamine

~~Propofol~~ Propofol

Dexmedetomidine.

(4)

SHORT ANSWERS

11) Drugs dosage formulas for children.

Young's formula

$$\text{Dose for a child} = \frac{\text{Age (years)}}{\text{Age} + 12} \times \text{Adult dose.}$$

Dilling's formula.

$$\text{Dose of a child} = \frac{\text{Age (Years)}}{20} \times \text{Adult dose.}$$

Clark's rule

$$\text{Child dose} = \frac{\text{Weight (pounds)}}{150} \times \text{Adult dose.}$$

12) Clarification of cry.

Cry is defined as a loud utterance of emotion especially when inarticulate.

Types :- a) Obstinate cry :- It is loud and high pitched emotion.

b) Frightened cry :- Usually accomplished by a torrent of tear convulsive breath catching sobs.

c) Hurtful cry :- It may be loud and more frequently accompanied by a small whimper.

d) Compensatory cry :- The cry is slow in sound and monotone.

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FIRST / SECOND / THIRD INTERNAL ASSESSMENT EXAMINATION

Name : Reg. No. : **8094**

Class : Subject : Date :

13) Oral screen.

Oral screen is simple functional appliance that takes the form of a curved shield of acrylic placed in the labial vestibule.

Indications / uses:-

- Used mostly to intercept mouth breathing habit and also habits like thumb sucking, tongue thrusting.
- Used for the correction of mild distocclusions and mild anterior proclination.
- Used as both active and passive appliance.

14) Stoic behaviour.

It is seen in physically abused children.

Characteristics

- Accepts treatment.
- Tense co-operative.
- Whining and timid.
- Milder but little anxious.
- May shield behind the parent.
- May whimper but does not cry hysterically, seldom are the tears seen.

15) Tell - Show - Do technique.

- TSD is a behaviours shaping technique.
- The TSD method of introducing dental techniques is extremely effective for shaping the child's behaviour and conditiony him/her to accept treatment.

Objectives of TSD.

- Teach the patient important aspects of the dental visit.
- Familiarization of dental setting.

Steps :- A.) Tell the child about the treatment to be carried out.

B.) Show him/her part of it, how it will be done.

C.) Then do it.



1] Williams periodontal probe:

- > Periodontal probe used to measure the depth of pockets & to determine their configuration.

2] University of Michigan '0' probe

- > Markings present at 1, 2, 3, 5, 7, 8, 9 & 10 mm.

2] Osseous craters:

- > Concavities in the crest of interdental bone that is confined within the facial & lingual walls
- > Craters make up about one-third of all defects & two-thirds of all mandibular defects & occur twice as often in posterior segments as in anterior segments
- > Commonly occurs in interdental areas due to:
 - plaque collection, difficult to clean
 - concave faciolingual space of interdental septum in lower molars favour crater formation.

3] Biologic Width:

- > The dimension of space that healthy gingival tissues occupy between the base of the sulcus & the underlying alveolar bone is composed of the functional epithelial attachment and connective tissue attachment.

The combined attachment width $\rightarrow$ Biologic width.

2 $\rightarrow$ Identified by probing to bone level & subtracting sulcus depth from the resulting measurement.

4) Col.

> Valley like depression which connects gingival papillae situated in the interproximal space between two teeth.

2 $\rightarrow$ lies below and conforms to the shape of interproximal contact.

> covered by non-keratinized epithelium

> Important site for irritation of chronic periodontitis

5) Radius of action:

> Range of effectiveness of about 1.5-2.5mm within which bacterial plaque can induce bone loss.

2 $\rightarrow$ Beyond 2.5mm, there is no effect.

> Interproximal angular defects appear only in spaces that are wider than 2.5mm, because narrower spaces would be destroyed entirely.

6) Ankylosis:

> fusion of cementum & the alveolar bone with obliteration of the periodontal ligament is termed ankylosis.

> occurs in teeth with cemental resorption, which represents a form of abnormal repair.

> May also develop after chronic pericapical inflammation, tooth replantation, occlusal trauma & around embedded teeth or in primary dentition.

> Results in resorption of root & its gradual replacement by bone tissue.

7) Naber's probe

> used for the detection of furcation areas

color-coded markings present at 3, 6, 9 & 12mm.

8) Bacteria present in complexes:

> Green complex -
E. corrodens
C. gingivalis
C. sputigena
C. ochracea

> Red Complex -
P. gingivalis
T. forsythia
T. denticola

4) > Orange complex -
P. intermedia
P. nigrescens

- P. necros
- C. rectus
- Ste. consociatus
- C. gracilis
- E. nodatum
- F. periodontium
- F. nucleatum
- B.

- > yellow purplex complex -
- str. nults
 - str. ovalis
 - str. sargius
 - S. gordonii
 - G. intermedius
 - V. parvula
 - A. odontolyticus
 - A. - israelii

1) Frenectomy & Frenotomy.

- > Frenectomy - is the complete removal of frenum including its attachment to the bone

- Indicated for the correction of abnormal anatomy

Frenotomy - is the incision & relaxation of frenum to create a zone of attached gingiva between the gingival margin and frenum

10) Powered toothbrush

- > method of mechanical plaque control

- > types of motions used -
- Reciprocal
 - Circular
 - Elliptical / Combination

- > Recommended for -

- (i) Individuals lacking fine motor skills.
- (ii) Small children (or) handicapped (or) hospitalised patients who need to have their teeth cleaned by someone else
- (iii) Patients with orthodontic appliances.

11. Types of CET.

Three types of CET relationships exist.

(i) 60-65% of cases - cementum envelops the enamel.

(ii) 30% - end to end relationship of enamel & cementum.

(iii) 5-10% - Cementum & enamel fail to meet resulting in a sensitive area.

12) Gracey Curettes:

> Area specific curettes, designed and angled to adapt to specific anatomic areas of the dentition.

> Best for subgingival scaling & root planing.

> One cutting edge is used (outer edge).

> curved in two planes, blade curves up & to the side.

> offset blade, face of blade beveled at 60° to the shank.

13) Pregnancy granuloma.

> Epulis (or) pregnancy tumor

> occurs in upto 5% women

> starts in the 2nd (or) 3rd month of pregnancy

> single, tumor like growth in an area of gingivitis (or) recurrent irritation.

> Regresses spontaneously after delivery.

14) New attachment.

> This is the re-union of connective tissue with a root surface that has been pathologically exposed.

> Techniques of new attachment:

- 91
- ① Non graft associated new attachment procedures
 - ② Graft associated new attachment procedures
 - ③ Combined techniques.

> Structures of lost periodontium are restored.

15) Plasma cell gingivitis.

> Also referred to as atypical plasma cell of gingivostomatitis.

> Frequently consists of a mild marginal gingival enlargement that extends to attached gingiva.

4- > Usually, gingiva appears red, friable & bleeds easily.

> Associated with chills & fissures.

> Microscopically, the connective tissue contains a dense infiltrate of plasma cells that also extends to oral epithelium.

checked

Retest

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6153

FIRST / SECOND / THIRD INTERNAL ASSESSMENT EXAMINATION

Name : SHASHANIK.R. Reg. No. 20D0981

Class : IV BDS Subject : Orthodontics Date : _____

SECTION

Answer the view of Growth and Development.

1] Remodeling theory of Craniofacial growth.

2] Genetic theory.

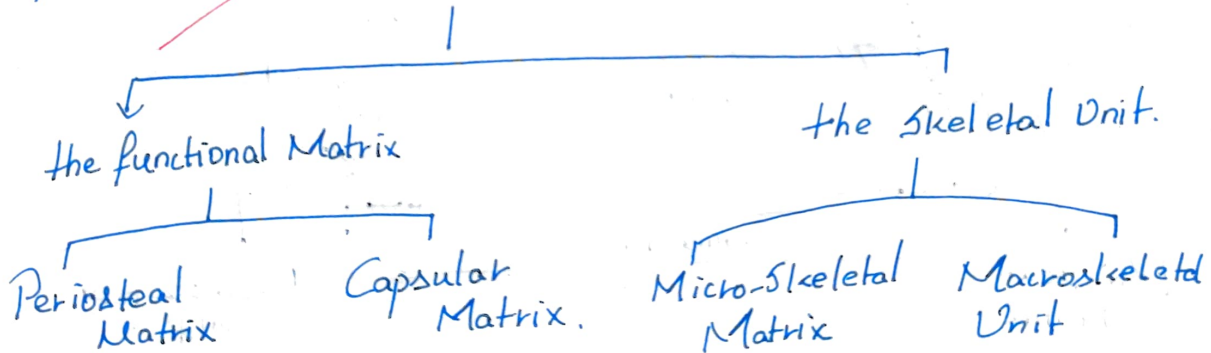
3] Sutural theory

4] Cartilaginous theory

5] Functional Matrix Concept

6] Van Limbogh's theory

Functional Matrix Concept.



1] Periosteal Matrix:

→ Function of muscles exerts a pull on the micro-skeletal units leading to growth.

2] Capsular matrix:

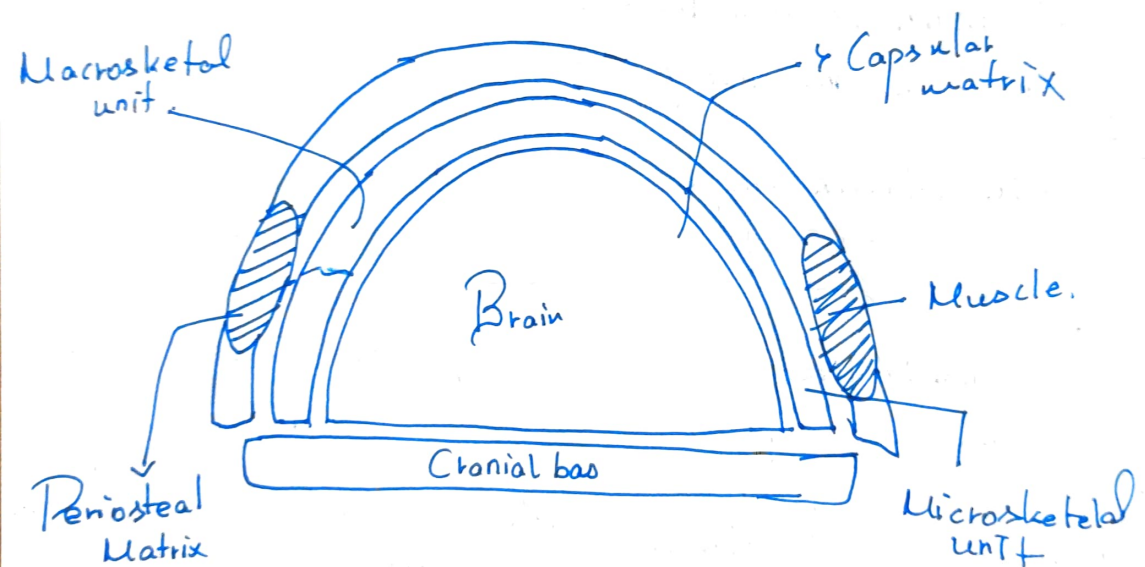
-> Primary growth of the Capsular matrix (brain) results in stimulus for Secondary Growth of the Sutures & Syndesmoses

3] Macroskeletal unit:

-> the neurocranium enlarges as a result growing Capsular matrix (brain) with Secondary Growth at Sutures & Syndesmoses

4] Microskeletal Unit:

-> The neurocranium is composed of a number of neighbouring bones which are individually the microskeletal unit.



6/2

2] Methods of Gaining Space.

1] Proximal Stripping

2] Expansion.

3] Extraction

4] Distalization.

5] Upright of molars

6] Desotation of Posterior teeth.

7] Proclination of anterior.

① Extraction as a method of Gaining Space:

→ One of the frequently resorted methods to Gaining Space for orthodontic Purpose is by Extraction of One or more teeth.

→ Extraction that is undertaken as a part of Orthodontic treatment is called therapeutic extraction.

→ Premolars are the most frequently extracted teeth as part of orthodontic treatment.

→ Extraction of One Premolar from each Quadrant of the Jaw Provides sufficient space to correct the Confronting Problem without Unduly hampering function and aesthetics.

→ In addition, the location of Premolars in the arch is such that the space gained by their Extraction can be utilized for Correction in both the anterior as well as the Posterior segments of the arch.

→ It is not Uncommon to extract molars or Lower incisors during orthodontic therapy.

→ However Extraction of Canines and upper incisor is usually avoided.

- the answer to the Question of which teeth to Extract for a Patient should be based On a Sound diagnosis.

Short Essays

1] Transient Malocclusion:

- it is also called as Ugly Duckling Stage.
- Sometimes transient or Self Correcting malocclusion is seen in the maxillary incisor region b/w 8-9 years of age.
- This is a Particular Canines.
- As the Developing Permanent Canines Erupt, they Displace the roots of the Lateral incisors mesially.
- This results in transmitting of the force on the roots of the Central incisors which also get Displaced mesially.
- A resultant Distal Divergence of the Crowns of the two Central Incisors Causes a midline spacing.
- This Situation has been described by Broadbent as the Ugly Duckling Stage a children tend to look Ugly During this phase of Development.
- Parents are often apprehensive During this stage and Consult the Dentist.
- This Condition usually Corrects by itself when the Canines erupt and the Pressure is transferred from the roots to the Coronal area of the incisors.
- to balance the Existing Space b/w teeth for better Prosthetic replacement
- To improve spaces to Provide normal tooth-to-tooth Contact.

-> To Improve occlusion and Co-ordination with the masticatory muscles and the TMJ.

-> To satisfy the aesthetic desires of the Patient.

3] Mouth breathing habit :

Etiology

-> Presence of obstacles in the nasopharyngeal region, which increases nasal resistance.

-> Can be due to tonsil hyperplasia, hypertrophical turbinates, rhinitis, tumors, infections or inflammatory diseases and changes in nasal architecture.

Clinical features:

-> Long and narrow face.
-> Narrow nose and nasal passage.
-> Short & flacid upper lip.
-> Contracted upper arch with Possibility of Posterior Cross bite.

-> An Expressionless or blank face.
-> Increased Overjet as a result of flaring of the incisors.
-> Anterior marginal Gingivitis Can Occur due to drying of the Gingiva
-> the Dryness of the mouth Predisposes to Caries.
-> Anterior. Open bite Can Occur.

Management

-> Removal of nasal or pharyngeal obstruction.
-> Any nit should be removed by referring the Patient to ENT Surgeon.
-> if Swollen adenoids are the Cause of upper airway obstruction, the adenoidectomy may be indicated.

2] Interruption of the habit:

→ Mouth breathing can be intercepted by use of vestibular screen.

→ Alternatively adhesive taper can be used to establish lip seal.

3] Rapid Maxillary Expansion:-

→ Expansion by orthodontic techniques such as by the use of Quad-helix appliance can be undertaken if the requirement is mild.

6] Andrews 6 keys of normal Occlusion.

1] Molar inter-arch relationship:

→ the mesio-buccal cusp of the upper first molar should occlude in the groove b/w the mesial & medial buccal cusp of the lower first molar.

→ the mesio-lingual cusp of the upper first molar should occlude in the central fossa of lower 1st molar.

2] Mesio-distal Crown angulation.

→ the gingival part of the long axis of the crown must be distal to the occlusal part of the line.

3] Labio-lingual Crown inclination:

→ If the gingival area of the crown is more lingually placed than the occlusal area it is referred to as +ve crown inclination.

→ In case the gingival area of the crown is more labially or buccally placed than the occlusal area it is referred to as -ve crown inclination.

4] Absence of rotation.

- normal occlusion is characterised by absence of any rotation.
- Rotated Post. teeth occupy more space in the Dental arch while rotated incisors occupy less space in arch.

5] Tight Controls

- To Consider an occlusion as normal, there should be tight contact b/w adjacent teeth.

6] Curve of Spee:

- A normal Occlusal Plane according to Andrews should be flat. within the of Spee not exceeding 1.5mm.

7] Enlow's Expanding 'V' Principle:

- Many facial bones or parts of bone have a 'V' shaped pattern of growth.
- the Growth movements & enlargement of three bones Occur towards the wide ends of the 'V' as a result of Differential Deposition & Selective bone resorption.
- Bone Deposition Occurs on the inner side of the wide end of the 'V' & bone resorption on the outer surface.
- Deposition also takes place at the ends of the arms of the 'V' resulting in growth movement towards the ends.
- The 'V' pattern of the Growth Occurs in a number of regions such as the base of the Mandible, ends of long bones, Mandibular body, Palate etc.

8] Wolff's Law of transformation of bone:

- > ~~the~~ it is Developed by the German anatomist and Surgeon Julius Wolff in 19th Century.
- > He States that bone in a healthy Person is animal will adap to the loads under which it is placed.
- > If Loading on a Particular bone increases the bone will remodel itself overtime to become stronger to resist that sort of loading.
- > the internal architecture of the trabecular undergoes adaptive changes followed by 2^o changes to the External Cortical Portion of the bone Perhaps becoming thickest as a result.
- > the inverse is true as well. if the loading on a bone ↓ the will become less dense and weaker due to the lack of the stimulus requested for continued remodeling.
- > it has been formed that bone is formed in just the Quantity and shape that will enable it to without the physical demands made upon it with the greatest amount of economy of structure.
- > this is the basis of Wolff's law transformation of bone.

9] types of bow.

- > Short Labial bow
- > Long Labial bow
- > Split labial bow
- > Reverse labial bow
- > Robertus @ retractor.
- > Mills retractor.
- (9) > High Labial bow.
- > Fitted Labial bow.

1] Short Labial bow

- In case of minor Overjet reduction.
- anterior space closure.

2] Long Labial bow:

- minor anterior space closure
- minor overjet reduction.
- closure of space distal to Canine.

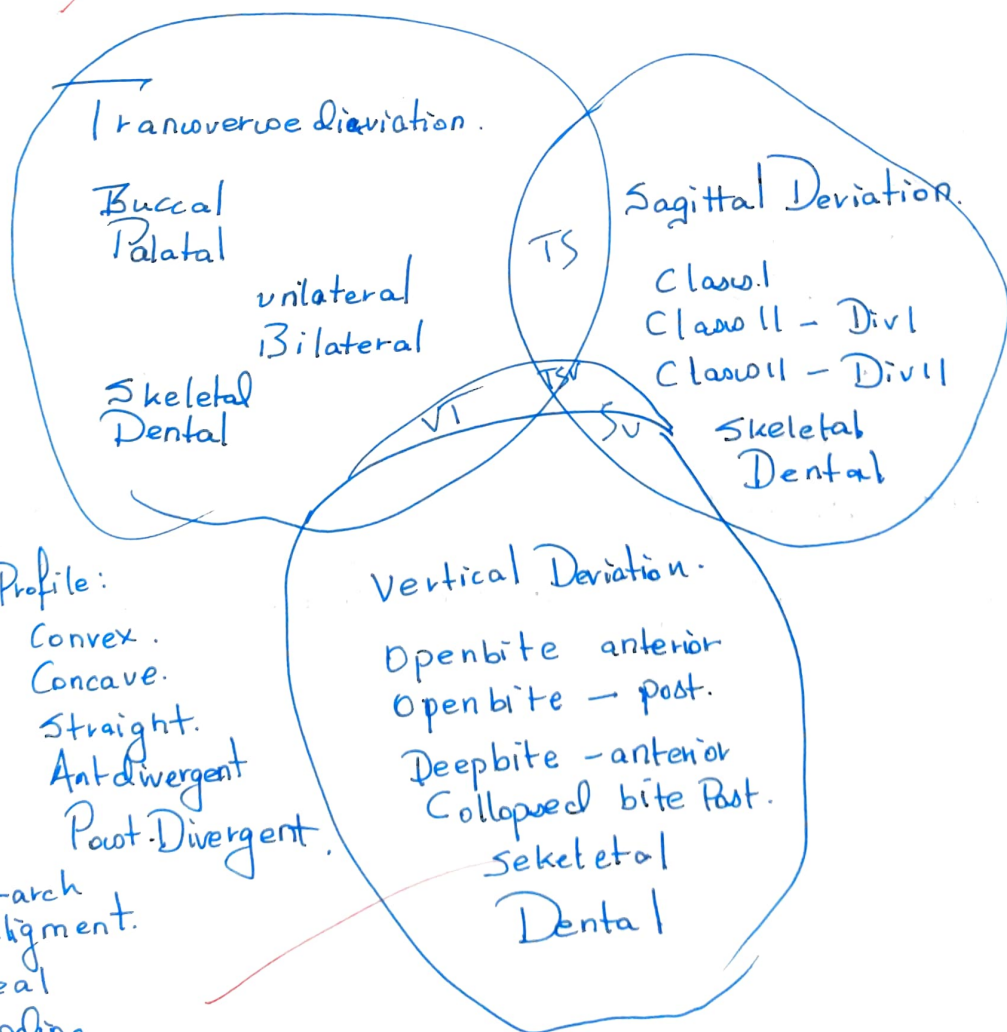
3] Split Labial bow:

- In anterior retraction.
- closure of midline diastema.

4] Reverse Labial bow

- Same as Short Labial bow.

Ans 10] Aceman - Profit system of Classification



Profile:

- Convex.
- Concave.
- Straight.
- Ant. Divergent
- Post. Divergent.

Intra-arch alignment.

- Ideal
- Crowding
- Spacing

1] Step 1:

- > Allignment.
- > involves assessment of the alignment and symmetry of the Dental arch.
- > Ideal | Crowded | Spaced.

2] Step 2:

- > Transverse Skeletal Profile.
- > Convex | Straight | Concave.
- > Anterior divergence | Post Divergence

3] Step 3:

- > transverse Skeletal & Dental relationship is Evaluated
- > Buccal & Palatal ~~it~~ Crossbites.
- > unilateral & bilateral,

Step 4:

- > Class
- > Class I
- > Class II : Div 1
Div 2

5] (Step 5):

- > Bite Depth.
- > Ant. / Post. Openbite.
- > Ant. Deep bite | collapsed Post bite.

3

Short Answer.

11] Growth Spurts.

1] Just before birth.

2] Infantile / childhood Growth Spurt - upto 3yr

3] mixed Dentition growth spurt : boy - 8-11yrs
Girls - 8-9yrs

4] Pre-pubertal Growth Spurts : Boys : 14-16yrs
Girls : 11-13yrs

12] Dyes used for vital staining:

- Methylene blue.

- Acridine orange

- Fluorescent dye.

- Nile blue

13] Role of Genes in orthodontics.

> It can affect the Development of the jaw, teeth & bite

> Jaw : Can cause ^{jaw} discrepancies like a narrow

Palate / Disproportionate Jaw size.

> Teeth : malocclusion.

> Bite : misalignment bites

14] Active Components of fixed appliances.

> Arch wires.

> Elastics.

> Coil springs

> Separator rings

15] Jackson's triad:

1) Structural balance

2) Esthetic harmony

3) Functional efficiency.