NAVODAYA DENTAL COLLEGE & HOSPITAL

INTERNAL ASSESSMENT EXAMINATION

(Accredited with 'A' Grade by NAAC)

Department of Oral pathology

Name : R. charani

Roll No : 1BD2564 (59)

Subject : oral pathology

Invigilator : Retest

ANSWER SHEET

No.: 16-5-21

Vani

46½ / 50

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LONG ESSAYS:.

② Dental caries :.

Ans:

* Dental caries is defined as the microbial disease causing dimineralization of the inorganic substances and the dissolution of the organic substances.

* This is called as dental caries.

classification of Dental caries:.

* Based upon the progression
  - Acute dental caries
  - chronic dental caries
  - Arrested caries.

* Based upon the site
  - pit and fissure caries
  - smooth surface caries.

* primary caries
* secondary caries.

Acute dental caries:-

* This are mild caries
* most commonly occur in the children.
* These are divided into 2 types
  - Rampant caries
  - Nursing Bottle caries.

Rampant caries:

* These are the caries that affect almost all teeth in the oral cavity.

Nursing Bottle caries :-

* This is also called as the Nursing caries (or) Baby bottle syndrome.
* It affects commonly the maxillary Incisors.

chronic dental caries :-

* This occurs in adult
* chronic are not much painful, because the pulp involvement is minimal.

Arrested caries :-

* when the caries are growing at the some places they got arrested that is called as the Arrested caries.

pit and fissure caries :-

* These are the caries that occurs in the pit and fissures of the tooth.
* most commonly affected are maxillary molars.

Smooth surface caries:

* These are the caries that occur on the Buccal and lingual surfaces not involving the occlusal surfaces.

Etiopathogenesis of the dental caries :-

* This involve the theories.

Ancient theories:

- Worm theory
- Humoral theory
- vital theory
- chemical theory
- septic theory.

Modern theories:

- Acidogenic theory
- proteolysis theory
- proteolytic- chelation theory
- phosphatase theory.
- sucrose- chelation theory
- phosphatase- reductase theory
- Autoimmune theory
- Genetic theory.

Ancient theories:

Worm theory:

* This theory said that caries that occur and worms that drank blood from the tooth.

* Worm that drank blood from the tooth causes the caries.
* This is called as worm theory.

Humoral theory:

* This theory says that
  - caries are caused by the Humoral.
* This is called as the Humoral theory.
* Humoral theory and vital theory are together called as endogenous theory.

Chemical theory:

* caries are caused by the chemical agents and the environmental factors.
* causes the destruction of entire crown of the tooth. These are caused externally, but not internally.

parasitic theory:

* This theory is also called as the septic theory
* This is caused by bacteria that are entering and causing the fermentation of that full crown.
* This is called as the parasitic theory.
* This dental caries is caused by a filamentous organism called as the "denticolae".

Modern theories:-

Acidogenic theory:-

* This theory is also called as chemo-parasitic theory.
* This theory is put forward by willough D. miller in 1890.
* This theory is a combination of chemical theory and parasitic (or) sepsic theory. and it causes the caries mainly in two ways.
  - Decalcification (or) softening of the tissue by causing the fermentation of the substances in occlusal surfaces.
* This theory has so many disadvantages.
* This theory is still in use by some modern contraindications.

Miller's experiment:-

* when Bread (or) sugar are eaten that are decalcified by fermenting at the temperature of 37°c and this causes the caries.
* when instead of Bread (or) sugar meat is used and fermented at 37°c this does not cause the caries.
* This is called as the miller's experiment.

oral microflara

↓

Dental plaque

↓

Localised acid production.

↓

demineralization of inorganic substances and dissolution of organic substances

↓

dental caries.

proteolysis- theory :-

* proteolysis. theory is said by first loss of organic content and followed loss of inorganic content.
* This is called as the proteolysis theory.
* Gottleib. said that yellow discolouration of the crown.

Indications:

* yellow discolouration of the crown is caused by the staphylococcus aureus.

proteolytic - chelation theory :-

* proteolytic- chelation theory is caused by proteolytic products act as a chelating agents and these affects. rod sheaths, tufts and striae of retzius.

Indications:

* proteolytic - chelation theory affects the lamella, rod sheaths, tufts.
* This is called as the proteolytic- chelation theory.

Sucrose- chelation theory:

* sucrose only acts as chelating agent
* This affects the lamellae.

phosphate- Reducase theory:

* This is caused by the phosphate.
* phosphate is reduced in enamel.
* This is called as the phosphate- Reductase theory.

Genetic theory:

* This it says that
  - dental caries are caused by the gentic predisposition.
* This is called as the Genetic theory.

Histopathology:

* zones of enamel caries.
* zones of dental caries
  1 → Fatty degeneration of Tomes process
  2 → sclerosing
  3 → without cavitation bacterial Invasion.
  4 → with bacterial invasion.
  5 → zone of decomposed dentin.

① Epithelial tumors :-

Ans :

Benign tumors

- squamous cell papilloma
- keratoacanthoma
- Nevus
- verucca vulgaris.

Malignant tumors

- squamous cell carcinoma
- Basal cell carcinoma
- Malignant melanoma.

premalignant lesions and conditions

- leukoplakia
- Erythroplakia
- oral submucous fibrosis.

Squamous cell carcinoma :-

* 64 % of the oral carcinoma.
* males are more frequent than the females
* M : F = 3 : 1
* occurs in the age - 30-50 yrs.
* 60 % of the squamous cell carcinoma arises from the anterior 2/3rd of the tongue and remaining from the floor of the mouth.
* pain after ulceration.

Etiology:

* multifactorial

Intrinsic Extrinsic.

* Tobacco smoking
* Betel quid
* areca-nut chewing
* Genetic.
* sunrays
* Tobacco chewing.
* smoke less Tobacco

clinical features:

* males are the more frequently affected than the females.
* males are frequent, except the places where the females are affected.
* It increases with the age.
* It increases 7% in the old age people.
* Age incidence > 55 yrs.
* Tobacco chewing causes the squamous cell carcinoma.
* painful after ulceration.

Metastasis:

* metastasis means increase in the number.
* It can occur by the TNM staging.

TNM grading:

T. - primary tumor.

T_x - No primary tumor

T_0 - primary tumor not assessed

T_1 - It is greater than the 2cm in greater dimension.

T_{is} - carcinoma in situ.

T_2 - primary tumor is greater than 2cm but not greater than 4cm in greeter dimension

T_3 - primary tumor is greater than 4cm.

T_4 - primary tumor spreads to the adjacent tissues like cortical bone.

T_{4a} - primary tumor spreads to the maxillary sinus. muscles of the tongue.

T_{4b} - primary tumor spreads in to deeper structures.

N - Lymphnode

N_x - NO lymphnode is assessed

N_0 - lymphnode is absent.

N_1 - single ipsilateral lymphnode is present but not greater than the 3cm

N_2 - single ipsilateral lymphnode is present greater than 3cm but less than 6cm and presents as multiple ipsilateral, single ipsilateral.

N_{2a} - single ipsilateral lymphnode present greater than 3 cm but less than 6cm.

N_{2b} - Single bilateral lymphnode present from the same side.

N_{2c} - multiple ipsilateral lymphnode present

N_3 - Lymphnodes are present > 6cm.

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M- metastasis

m_x - No metastasis is assessed

M_0 - distant metastasis is absent

M_1 - distant metastasis is present

TNM staging.

stage - I - ~~T_0 M_0~~

T_{is} N_0 M_0

stage - II - T_1 N_0 M_0

T_2 N_0 M_0

T_3 N_0 M_0

stage - III - T_3 N_0 M_0

T_1 N_1 M_0

T_2 N_1 M_0

T_3 N_1 M_0

stage IV A - T_{4a} N_0 M_0

T_{4a} N_1 M_0

T_{4b} N_1 M_0

T_{4} N_2 M_0

T_2 N_2 M_0

T_3 N_2 M_0

IV B - Any T, N_2, M_0

IV C - Any T, M_0

Histopathological features :-

* It is well-differentiated
  Intermediate grade.
* keratinization of the epithelium.
* stroma is present.

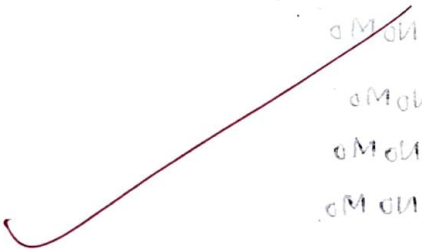
spread of infection :-

* By lymphatic spread.
* By Blood also it will spread.

Treatment :

* conservative surgical excision.
* If it is excised properly recurrence is the rare.

Histopath diagram



II

SHORT ESSAYS:

(3)

Any:

Oral submucous Fibrosis:

* It is a chronic, rapid highly precancerous condition
* precancerous condition of the oral cavity.
* Females are more frequently affected than the males.
* Juxtaepithelial membrane is present.
* Incidence is 15%.

Synonyms:

* Chronic Idiopathic
* Idiopathic scleroderma of tongue.
* Idiopathic sclerosis.

Etiology:

* Tobacco chewing
* Areca-nut
* Betel-quid.
* Genetical
* Smokeless Tobacco
* Eating excessive of chillies
* spices.

clinical features:

* Age incidence is 20-40 yrs
* Females are more commonly affected than males.
* It will occurs by taking excessive of spices and chills
* patients complaints when comes treatment as the burning sensation when they eat the hot and spicy foods.
* In Early stage of the oral submucous fibrosis. it appears like a wet-leathery stage.
* Elevated tongue, Respiration is diffiult
* swallowing is difficult

3½

* In Early stages there will be the Excessive saliavation, decreased saliavation.
* It is less painful in the Early stage.
* In later stages it oral submucous fibrosis becomes ulcerative.
* It is painful in later stages.
* It is leathery.
* commonly affected sites :- floor of the mouth, buccal mucosa, gingiva.

Histopathology :-

* Hyperkeratosis.
* acquired flattened and smoothened rete pegs.
* more keratinization.
* Nuclear intercellular.
* Juxta epithelial border is present
* connective tissue is present

Treatment :-

* stoppage of the habits
* By giving the intravenous corticosteroids.

Oral submucous fibrosis.

(9) Histopathology of Enamel and dentinal caries.

Ans

Histopathology of Enamel caries :-

Zone-1 → Translucent zone

Zone-2 → Dark zone

Zone-3 → Body of the lesion

Zone-4 → surface zone.

Translucent zone :-

* It is the superficial layer of the Enamel caries
* Zone of demineralization.
* Reduction of the magnesium and carbonate.

Dark zone :-

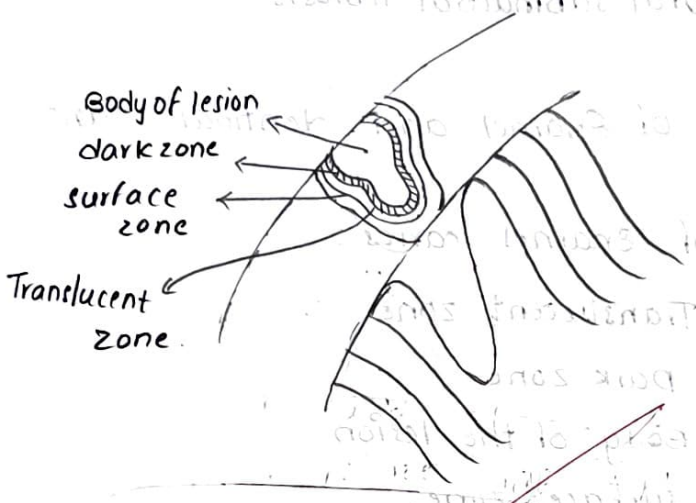
* It is present infront of the translucent zone
* This zone is also called as the positive zone.
* positive zone because of positive birefirengence
* When the * light is transmitted it looks the dark.

Body of the lesion :-

* zone of demineralization is more.
* It is present infront of the Dark zone.

surface zone :-

* present between the striae of Retzius and the Enamel lamellae.
* present infront of the Body of the lesion.



Dentinal caries without cavitation of Enamel.

* Again it is divided into 2 types
  - peripheral lesion translucent zone
  - central body of the lesion.
* peripheral translucent zone
  - zone of the hypermineralization.

Dentinal caries without cavitation of Enamel:-

- Translucent zone
- Body of the lesion.

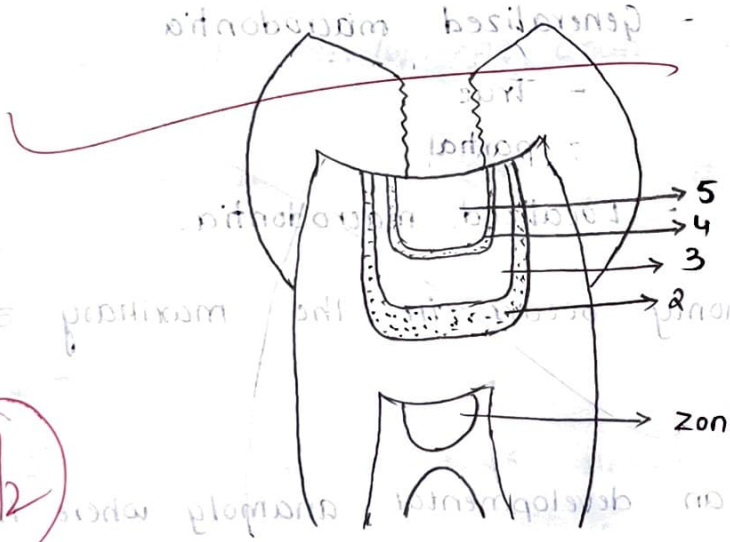
* Body of the lesion is divided into

- zone of demineralization
- zone of destruction.

histopathology of the dentinal caries:

* These are divided into 5 zones.

zone-1 → zone of fatty degeneration of tomes process
zone-2 → zone of dental sclerosis.
zone-3 → zone without the bacterial invasion.
zone-4 → zone with bacterial invasion
zone-5 → zone of decomposed dentin.



4'b

⊗ Ans

Developmental disturbances of the no. of teeth.

No. of teeth:

- Macrodontia
- microdontia
- Rhizomegaly
- Rhizomicri

Macrodontia:

* This is an developmental anamoly where there is excessive no. of teeth present than the normal.
* It is divided in to
  - Generalized macrodontia
    - True
    - partial
  - Localized macrodontia.
* It commonly occurs in the maxillary 3rd molars.

Microdontia:

* This is an developmental anamoly where there is less no. of teeth present than the normal number.
* This is called as microdontia.
  - Generalized microdontia
    - True
    - partial
  - Focal microdontia.

True Generalized microdontia:

* development anamoly where there is one (or) two teeth are less than the normal teeth.
* mostly occurs in maxillary 3rd molars. maxillary lateral incisors.

partial Generalized microdontia:

* It is the developmental anamoly where there is a jaw size is ~~smaller~~ larger and all tooth present are appears are smaller.
* This is called partial Generalized microdontia.

Focal microdontia:

* This is an development anamoly where there is one (or) two teeth are missing
* commonly maxillary 3rd molars and maxillary lateral incisors.

Rhizomegaly:

* It is an developmental anamoly where there is an increase in the length of the root than the normal - it is called Rhizomegaly.
* commonly it occurs in the canine. which has larger route.
* It spreads into the maxillary sinus.
* Sometimes it arises from the Nasal process.
* This is called as Rhizomegaly.

Rhizomicri:-

* It is a developmental anamoly in which the size of the root is less than the normal.
* It is called as the Rhizomicri.

Generalized macrodontia:-

* True
* partial

True Generalized macrodontia:-

* It is a developmental anomaly where there is a large no. than the normal.
* It is called True Generalized macrodontia.

partial Generalized macrodontia:

* developmental anomaly where there is a Jaw size is smaller and teeth present are appears big than normal.
* It is called as the partial generalized macrodontia.

Anodontia:

* developmental anomaly when there is a complete absence of tooth in the oral cavity
* It is called as the Anodontia.

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(5) Ans

Environmental Enamel hypoplasia :-

* Enamel hypoplasia occurs when there is a disturbance in the Amelgonesis formation.
* This is called as the Enamel hypoplasia.
* Eg. In Enviromental Enamel hypoplasia - Focal hypoplasia occurs.

causes :-

* due to Nutrition
* due to flouride toxication.
* occurs due to Turner's hypoplasia, focal hypoplasia.

*It occurs due to Nutrition:

- occurs due to the deficiency of vitamin- A, C, D. when vit-C less then. Enviromental Enamel hypoplasia occurs.

* It occurs due to flouride toxication.

- when the drinking water contains greater than 1ppm of flouride.
- It causes the Enamel mottled.

* It occurs throgh the Hutchinson's triad.

- This hutchinson's triad is anomaly that occurs in the congential syphilis

- usually it involves
  the maxillary incisor
  maxillary cuspids
  Eighth nerve deafness.
  Interstitial keratitis.

* Enamel hypoplasia is of 4 types
  - Hypomaturation type
  - Hypocalcification type
  - Hypomaturation
  - Hypomineralization.

(4)

Treatment :-

* By taking water that contains the >1 ppm of flouride.
* By taking the better nutrition.

⑥ Ans: OSTEOMYELITIS:

* osteomyelitis is a chronic inflammation of the bone that is involving the periosteum, cortex and marrow.
* This is called as a osteomyelitis.
* It is a chronic condition.

CHRONIC DIFFUSE SCLEROSING OSTEOMYELITIS

LYTIC CHANGE IN OSTEOMYELITIS

CHRONIC DIFFUSE SCLEROSING OSTEOMYELITIS

- Chronic osteomyelitis
- Sclerosing osteomyelitis

LOCAL DIFFUSE SCLEROSING OSTEOMYELITIS.

- condensing osteomyelitis (osteitis).

Condensing osteomyelitis:-

* It is also called as the osteitis
* condensing osteomyelitis occurs when there is a rapid inflammation of the periapical granuloma.
* It is firm. an

Symptoms:

* It is asymptomatic.

3½

Radiography:

* Radiographically it appears well-differentiated and appears radio opaque around one (or) more teeth.
* Radio opaque.
* Radiolucent- some times it appears.

Treatment:

* By giving intravenous corticosteroids

SHORT ANSWERS:

(14) Ans

Cart-wheel appearance

* It appears in the multiple myeloma.
* In myeloma cells nucleus is eccentric
* It occurs when the clumping of chromatin appears.
* some-times this is called as checker-Board pattern.

(16) Ans:

Mycobacterium Tuberculosis:

* It is a chronic ~~or~~ systemic disease.
* caused by the mycobacterium tuberculae.
* Tuberculosis is divided in to
  - primary tuberculosis
  - secondary tuberculosis
* spreads to other organs. by droplet infection
* spreads ~~to~~ by milk contamination.

(15) Ans

SNYDER'S TEST

* It is a caries activity test
* Basis:-
  stimulated saliva + Glucose → to this added the Bromocresol green (indicator dye)
* when there is a caries is present this indicator dye changes into Bluee color
* when the indicator dye changes into blue within 24 hrs - caries are present
* when the indicator dye changes into blue within 48 hrs - caries suspectibility.

* when the indicator dye changes in to blue with 72 hours - mild changes. caries
* If it does not changes after 72 hrs it is - No caries activity.

(12) STAG- HORN PATTERS

* appears in the Haemangioma
  pericytoma
* Nucleus appears as deer horn cells.

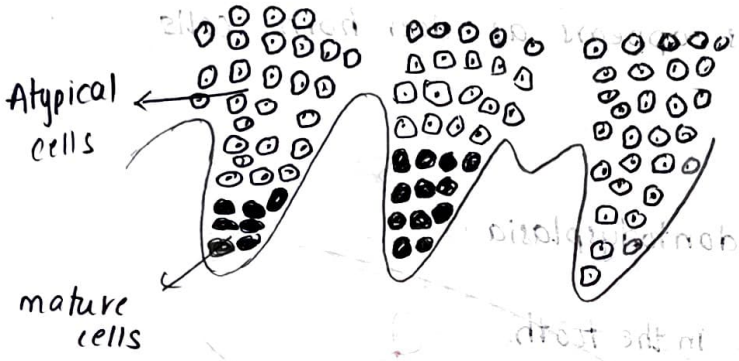
(13) Regional odontodysplasia :

* dysplasia in the tooth.

SHORT ESSAYS:

⑯ Epithelial dysplasia

* cells are basal polarity
* 3 types - mild epithelial dysplasia
  moderate epithelial dysplasia
  severe epithelial dysplasia



Mild
- Atypical cells are present in lower 2/3rd
- mature cells are present in upper below 1/3rd.

moderate
- Atypical cells are present in - upper 2/3rd
- mature cells are present in lower 1/3rd

severe:
- Atypical cell are present - upper 2/3rd
- mature cells are preserved.

(4) Ans:

osteosarcoma:

* osteosarcoma is a malignant tumor of bone
* proliferation of the mesenchymal tissues.
* It occurs according to the age.

Clinical Features :-

* It occurs in the age - 30-40 yrs.
* Bimodal age group.
* Females are more frequent than males.
* maxilla is greather incidence than mandible
* maxilla > mandible.
* Age: > 33 yrs.
* mandible - posterior body and ramus
* maxilla -
  inferior (cortical bone)
  Superior - (zygoma, maxillary sinus)

Histopathological:

* It appears like a sunray (or) sunburst appearance.
* It occurs in the deep carious lesions.
* An angle is formed between the lesion and the epithelial surface.
* Some times this Joins into the periapical granuloma.
* Keratin is present.
* Radiologically it appears as a Radiolucent

1½

Treatment:-

* It occurs
* complete surgical exision
* Rate of recurrence is rare.

⑨ oral manifestations of syphilis:-

Ans

* It is a chronic systemic disease.
* caused by the treponema palladium.
* syphilis is divided into
  - Acquired syphilis → primary stage
    secondary stage
    Teritary stage
  - congenital syphilis.

mode of transmission:

* It occurs by healthy person when contacts with the affected person.
* contamination of milk.
* It occurs transplacentally.

3½

Acquired syphilis:

* It occurs in the children.
* It appears after the birth.

primary stage:

* It is the most infectious stage
* Incubation period - 3-90 days.
* It contains condition "CHANCRE"

secondary stage:

* It appears when primary stage not healed.

* when primary stage is not healed it causes the secondary syphilis.

Teritiary stage:

* It occurs by 3 stages
  - Neurosyphilic stage
  - cardiovascular stage
  - Gummatous stage.

Congenital syphilis:

* It occurs through the transplacentally from mother to the foetus

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Roll No : 14

Subject : DAOH

Invigilator : Retest

No.: 17-3-2021

ANSWER SHEET

K. Anila

53/100

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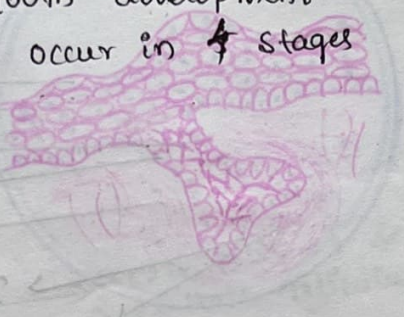
I

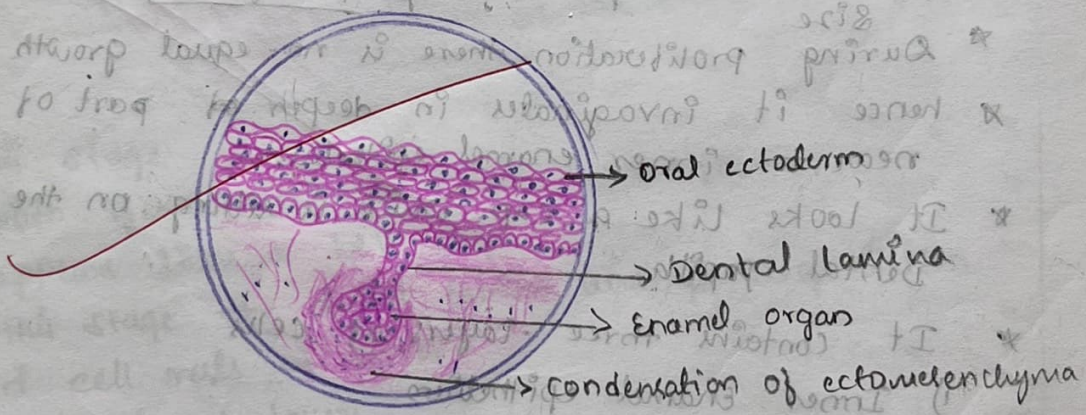
1) Morphological stages of tooth development

In tooth development it occur in 4 stages

1) Bud stage
2) Cap stage
3) Early bell stage
4) Advanced bell stage.



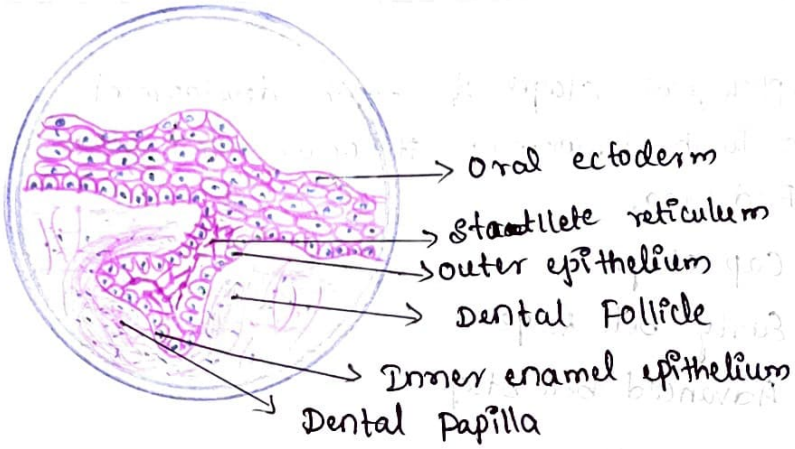
1) Bud stage



* In this stage the tooth germ appears like a bud hence it is called 'Bud stage'
* From the oral ectoderm Dental lamina arises.
* Then it forms enamel organ
* Condensation of ectomesenchyme occurs
* In Enamel organ peripheral cells are cuboidal or low columnar cells & central cells are polygonal cells
* Dental papilla which enclose by invagination of Enamel organ which is ectodermal in origin
* Dental papilla ectomesenchymally originated

* Dental follicle which is ectomesenchymal in origin
* Enamel organ & Dental papilla enclosed by Dental follicle
* In this stage Dental papilla & Dental follicle cannot be differentiate
* This stage follows physiological stage of 'initiation'

2) Cap stage



Cap stage

* In this stage
  * The enamel organ undergo 'proliferation' to increase in size
  * During proliferation there is no equal growth
  * hence it invaginates in deeper part of enamel organ near to inner enamel epithelium
  * It looks like a cap which is sitting on the ball of Dental papilla
  * It contains three layers of cells
    1) Inner enamel epithelium
    2) Outer enamel epithelium
    3) Stallate reticulum

1) Inner enamel epithelia → These are arranged peripherely which are cuboidal in bud stage changed to low columnar cells. which undergo differentiate into ameloblast

2) outer enamel epithelium
   These are cuboidal in shape which undergo involved in Reduced enamel epithelium.

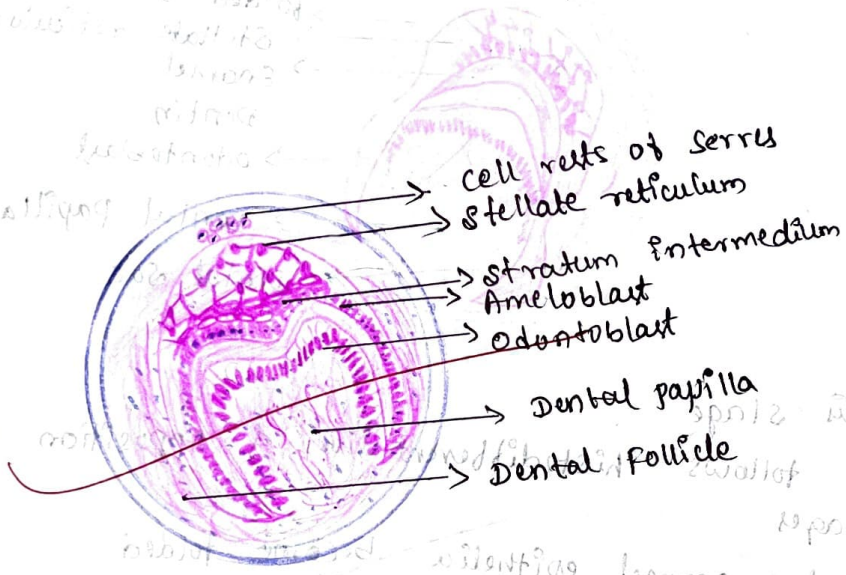
3) Stallate reticulum
   The central polygonal cells in early cap stage differentiate into star shape cells called Stallate reticulum

* Function of Stellate reticulum
  - It give Protection to Inner enamel epithelium
  - It also help in Nutrition supply

* Dental Papilla → Condensation of ectomesenchymal cells
* It lie in the invaginated portion of enamel organ
* Enamel organ sit on Dental papilla
* which gives Dentin in future

* Dental Follicle :- condensation of ectomesenchymal cells
* It covers both Enamel organ & Dental papilla
* which undergo differentiate into cementoblast, osteoblast fibroblast

3) Early bell Stage



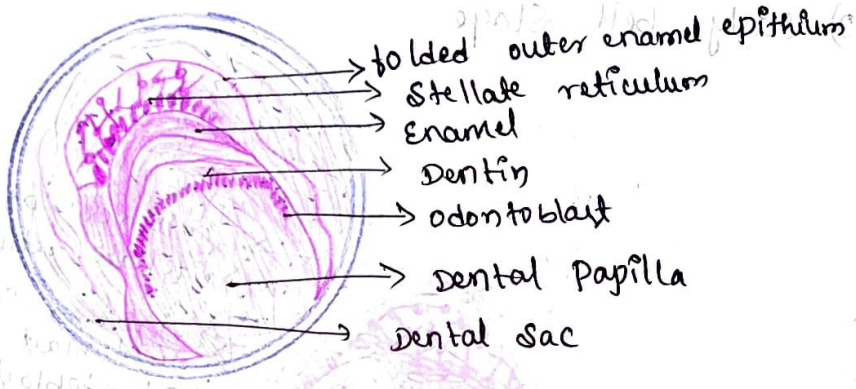
* In this stage
  The tooth germ undergo further proliferation
* It appears like a bell stage
* In this stage the dental lamina undergo degeneration called cell rests of serres
* It contain 4 layers
  1) Inner enamel epithelia which differentiate into Ameloblast
  2) Odontoblast
  3) Stallete reticulum
  4) Stratum Intermedium

1) Inner enamel epithelium differentiate into Ameloblast which gives rise enamel.
   * formation Procell of enamel is called Amelogenesis

2) Odontoblast →
   * which formed by dental papilla in single layer
   * Influenced by Ameloblast

* Stratum intermedium
  * It forms in between stallate reticulum & inner enamel epithel
  * It degenarate during formation of enamel
* Stellate reticulum
  Star shaped cells in between stratum intermedium & outer enamel epithelium
* Enamel organ more invaginates & covers alomost all dental papil
* It follows physiological stages of morphodifferentiation, Prolifera histodifferentiation

4) Advanced bell stage



* In this stage
  * It follows histodifferentiation & Apposition Physiological Stages
  * Outer enamel epithelia become folded
  * Odontoblastic layer start to secrete dentin
  * And also influence enamel formation
  * At cervical loop after dentin formation root formation starts
  * At cervical loop proliferation of odontoblastic cells give 'Hertwig's Epithelial root sheath'
  * It helps to determine Number, shape & size of root.
  * HERS proliferate horizontally to form epithial diaphra
  * It follows apposition of physiologic stage

Clinical significance

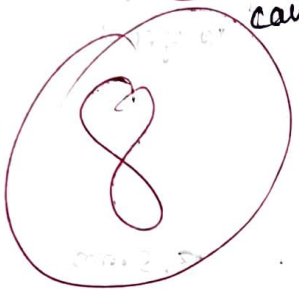
1) Hypodontia :- loss of tooth development in oral cavity
   * due to lack of initiation

2) Microdontia :- less number of tooth than normal
   due to defect in morphodifferentiation
   * pituitary dwarfism cause microdontia.

3) Macrodontia :- Large number of tooth than normal
   * pitutary gigantism cause macrodontia

4) Amelogenisis imperfect :- defect in enamel formation
   due to fail in histodifferentiation

5) Hypoplasia :- cause due to local crystals affect ameloblast
   cause defect in deposition of enamel matrix.



2) Morphology of Permanent Maxillary central incisor

Introduction

* Permanent maxillary central incisors are 2 in number
* contact with each other by mesial surface
* contact with lateral incisor by distal surface
* These are used to cut the food substance & incise
* They are numbered as 11 & 21
  11 - Right central incisor
  21 - Left central incisor

Chronology

First evidence of calcification	3-4 months
Crown completed	4-5 years
Eruption	7-8 years
root completed	10 years

Dimension

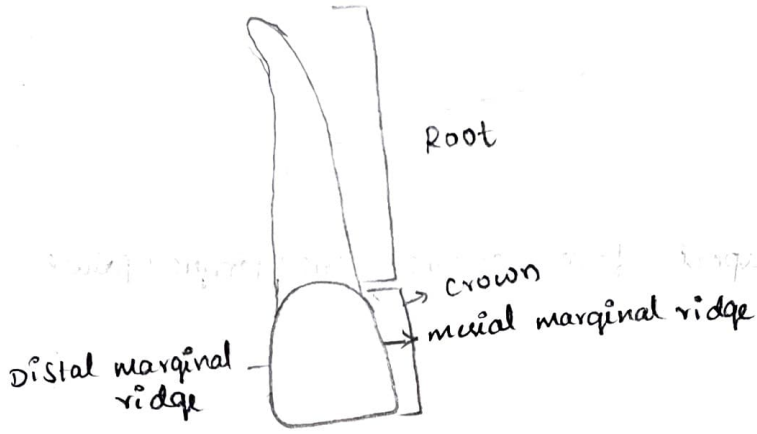
* Mesio-distal ~~length~~ diameter of crown - 8.5 mm
* cervico-incisal length of crown - 10.5 mm
* length of root - 13 mm
* Mesio-distal length of crown at ~~root~~ cervix - 7 mm
* labio-lingual diameter of crown - 7 mm
* labio-lingual diameter of crown at cervix - 6 mm
* curvature of cervical line at mesial surface - 3.5 mm
* curvature of cervical line at distal surface - 2.5 mm

* ~~Class trait~~ - ~~It~~ differentiate lateral & ~~central incisor~~
  Type trait - It differentiate Central & lateral incisors

* Central Incisor have five aspect.

1) Labial Aspect
2) Lingual Aspect
3) Mesial Aspect
4) Distal Aspect
5) Incisal Aspect

1) LABIAL Aspect



* Labial aspect is the face towards lip
* CROWN

Shape

* It has squarish shape
* Convex at cervical third
* Flatened at incisal edge

● Covered by 4 outlines

Mesial outline

* It is straight, slightly convex at cervix
* Mesio-incisal angle is sharp.
* contact area at incisal third near to mesio-incisal angle

Distal outline

* It is curved compared to mesial outline
* Disto-incisal angle is rounded
* contact area at the junction between incisal & middle 3rd

Incisal edge

* It is sharp with sharp incisal angle & rounded disto incisal angle.

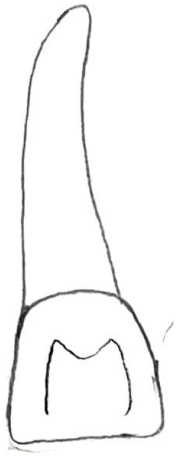
Cervical line

* Convex towards the root
* Semicircular in shape

Root

* It tapers from cervix to apex
* apex tilt towards distal
* conical shape

2) Lingual aspect



* Lingual aspect face towards the torque / palate

CROWN

Shape

* nearly squarish in shape
* tapers slightly at cervix
* Surface show concavity & convexity * Show lingual fossa

OUTLINES

Mesial outline

* convex at cervical third due to Presence of cingulum
* ~~Concave~~ Straight from middle third to ~~incisal~~
*

Distal outline

* convex at cervical third
* concave from middle third
*

Incisal outline

* Straight with sharp mesio-incisal angle & rounded disto-incisal angle

cervical outline

* Semicircular in shape
* convex towards the root

3) Mesial Aspect

* From this aspect
  * It looks like wedge shaped or triangular shape

Crown
Out line

Lingual outline
it is slightly convex at cervical third
Straight from middle third to incisal third

Lingual outline
* convex at cervical third, slightly at incisal third
* concavity at middle third

Cervical line
* It forms ball to mesial aspect
* convexity towards the crown

apex at incisal third

Root
* conical in shape
* evenly tapers from cervix to apex

Distal Aspect

* looks like wedge shape or triangular shape

Crown

Outlines

Labial outline

* It convex at cervical third
* ~~Conc~~ straight from middle third to Incisal edge

Lingual outline

* It convex at cervical third & Incisal edge
* It concave from middle to incisal third.

Cervical line

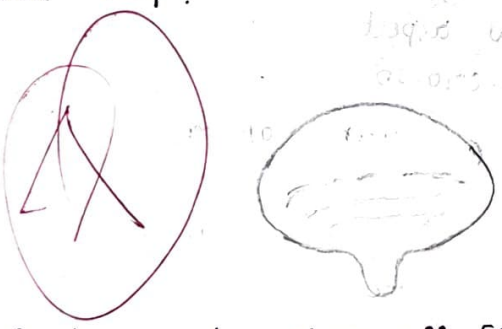
* curvature of cervical line is less compared to mesial aspect
* convexity towards the crown

apex at incisal edge

Root

conical in shape
evenly tapers from cervix to apex

5) Incisal Aspect



Incisal aspect when we see it by facing towards us

* It aquires labial & lingual aspect
* convexity of labial surface
* concavity towards lingual surface
* Incisal edge is straight

NAVODAYA DENTAL COLLEGE & HOSPITAL

INTERNAL ASSESSMENT EXAMINATION

(Accredited with 'A' Grade by NAAC)

Department of DAOH

Name : Deepa. G. B

Roll No : 14

Subject : DAOH

Invigilator : Retest

No.: 17-3-2021

ANSWER SHEET

K Anile

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14

11) Surface structures of enamel

- ★ pellicle
- ★ Nasmyth's membrane
- ★ Enamel rod ends
- ★ Enamel cups,

(2)

12) Line Angles :- The angles formed when 2 surfaces of tooth meets

Ex :- Mesio-incisal angle
Disto-incisal angle

Point Angles :- The angles formed at where 3 surfaces of tooth meets

Ex :- ~~Bucco-Mesio-bucco incisal angle~~
~~disto bucco incisal angle~~

Ex :- Mesio bucco occlusal angle
Disto bucco occlusal angle

(2)

13) cinqulum :- The elevation or mound on the lingual surface of anterior teeth is called cinqulum

Fossa :- The depression on the tooth surface is called fossa.

(2)

14) ~~Enamel tufts~~ :- ~~The spindle shaped structure seen on the surface of tooth is called Enamel tufts~~

★ ~~It arises from Dentino-enamel junction to surface~~

14) Enamel tuft :- The structure which appears like tuf
of grass on the Dentino-enamel junctio
is called enamel tuft

arises from DEJ to surface

Enamel spindle :- Spindle like structure arises from DE
to surface is called enamel spindl

---

15) Dental Formula

* The Formula which is used to represent dentition of Permanent & Deciduous tooth. is called dental Formula

- For Deciduous teeth :- $\frac{2I}{2}\ \frac{1}{1}C\ \frac{2}{2}M$

- For permanent teeth $\frac{2}{2}I\ \frac{1}{1}C\ \frac{2}{2}P\ \frac{3}{3}M$

---

3) Physical Properties

1) Hardness & density
* Hardest tissue of the body
* Do decreases from surface to DEJ
* From Incisal to cervix
* Permanent tooth more hard than deciduous tooth

2) Thickness
* varies in each surface of tooth
* decreases from surface to DEJ
* From Incisal to cervix
* In primary even Thickness will be occur

3) Brittle
* Most brittle in nature
* Breaks easily
* require resilient dentin to maintain integrity

4) Specific gravity is more
5) low tensial streath
6) Refractive index
7) optical properties
* Bi Birefringent
* transluscency
* Gnarled enamel
* Hunter scherger band

Chemical Properties

Enamel ha formed by 90% of inorganic substances
* low molecular weight proteins
* magnesium, vanedeum, manganese, strontium

Inorganic substances - 10%
* Amelogenins
  High molecular weight proteins
  low molecular weight proteins
* Non - Amelogenins
  Enamelin,

6) TOOTH numbering System

3 Numbering systems are there

1) Palmer or zsigmondy notation system
2) universal system
3) FDI (Federation Dentaire International) System

1) Palmer or zsigmondy Notation system

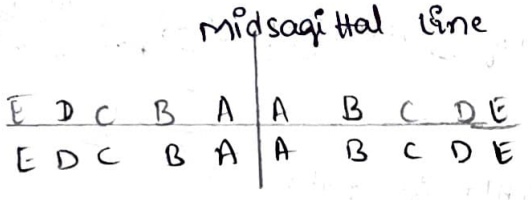
In this system we 4 bracket shape

⌟ - for Right maxillary teeth

L - for left maxillary teeth

⌝ - for right mandibular teeth

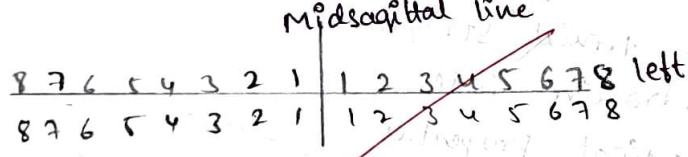
⌜ - for left mandibular teeth



Ex:- A⌋ - Primary ~~Right~~ maxillary right central incisor

B⌋ - Primary mandibular Right lateral incisor

For permanent tooth



Ex:- 8⌋ - permanent maxillary Right third molar

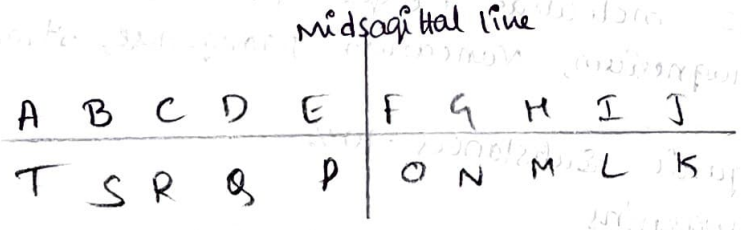
2) universal system

The primary dentition represented by A to T

The permanent dentition represented by 1 to 32

Start from 2nd molars in primary & 3rd molar in permanent

Primary dentition



LF - primary maxillary left central incisor.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17

Ex:-
LIO - permanent maxillary left lateral incisor

3) FDI system

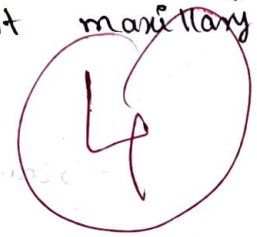
* In this system represent by 2 numbers
  First number indicates Arch, dentition, & side
  Second number indicates the tooth present in that Arch
* universally Accepted system

In permanent

18	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28
48	47	46	45	44	43	42	41	31	32	33	34	35	36	37	38

18 - permanent maxillary right third molars
28 - permanent maxillary left third molar

In primary

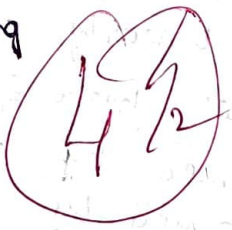


55	54	53	52	51	61	62	63	64	65
85	84	83	82	81	71	72	73	74	75

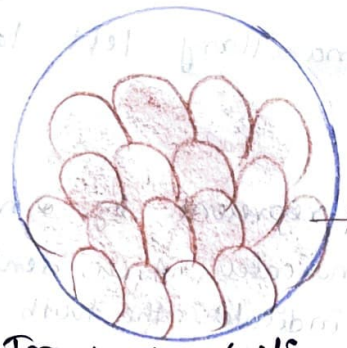
54 - primary maxillary right First molar
85 - primary mandibular right second molar

7) Enamel rods

* Enamel rods are fundamental structure of enamel
* In longitudinal section it appears as cylindrical shape
* It takes shapes as following
  * circular
  * keyhole
  * cylindrical



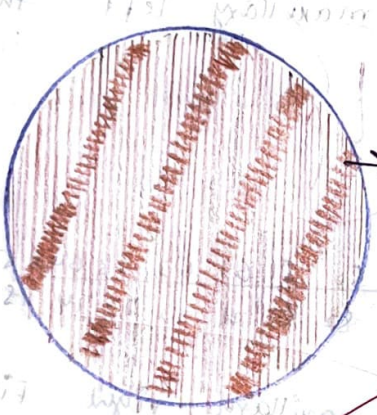
In transverse section



Transverse section

In transverse section it looks like circular in shape or keyhole shape

In longitudinal section

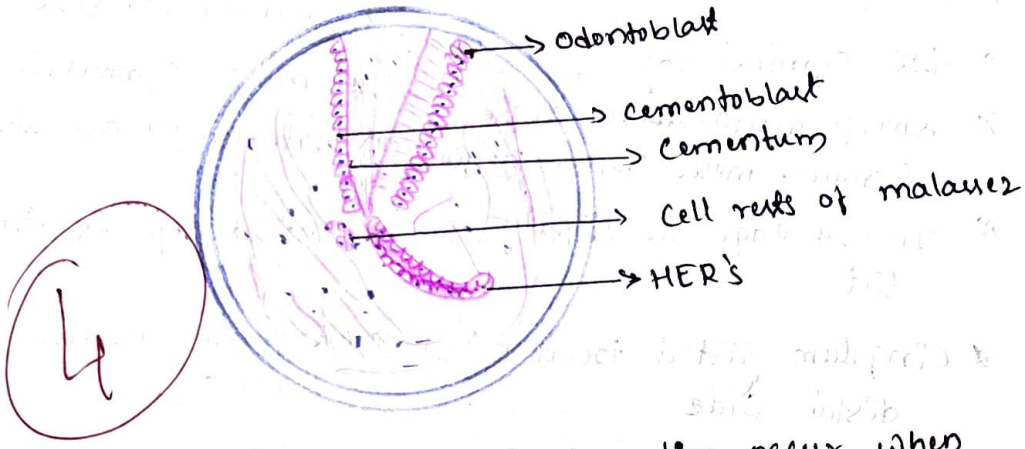


In longitudinal section it looks like ~~long~~ cylindrical in shape

* It has rod and interrod which seperate
* Interrod forms where tomes process absent
* Rods & interods are arranged alternatively
* where tomes process are absent interod substances formed linearly called interprismatic enamel
* Rod has head & tail
  head formed by one ameloblast
  tail formed by three ameloblast.
* Head are parallel to axis
* tail away from that axis
* The direction of rod determined by direction of ameloblast secretion

* There are horizontally arranged in middle
* vertically in incisal or occlusal side
* Shallow in cervical region
* There varies from one teeth to other and one person to other person.

8) Development of ROOT



4

In Advance bell Stage Root formation occur when Enamel and dentin formed upto Dentino-enamel function in future

* At cervical loop the cells undergo proliferation to form Hertwig's epithelial root sheath.
* undergo proliferation further horizontally up to meet & leave small space in between them which formes future apical foramen.
* It is called epithilial diaphragm
* defferentiation of odontoblast continued in Dental Papilla it causes downward growth of epithilial diaphragm
* Epithelial diaphragm covers inner side dental papilla & outer Dental follicle
* Dental follicle undergo differentiation of to form cementoblast which forms cementum
fibroblast which forms periodontal ligament
* osteoblast which forms Alveolar socket
* HERS undergo differentiation of proximal end of cervical loop starts
* HERS undergo degeneration which is called cell rests of Malasez

* odontoblast forms dentin upto apex leave some space which forms apical foramen
* on that cementum forms from cementoblast
* gives attachments to periodontal ligament.

---

9)

Maxillary central incisor	Mandibular central incisor
* Larger in size	* Smaller in size
* Less symmetrical	* more symmetrical
* Sharp mesio-~~distal~~ incisal angle & round mesio-incisal angle	* both angles are sharp
* Incisal edge is slightly tilt	* Incisal edge is straight
* Cingulum tilted towards distal side	* Cingulum present at center
* Lingual fossa is more	* Lingual fossa is less
* Marginal ridges with slight convexity	* Marginal ridges are straight

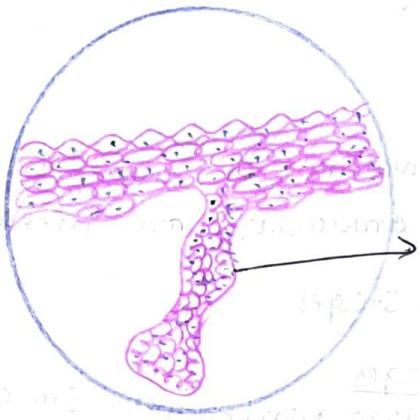
---

10) Dental lamina

Oral ectoderm elongated and divide into Dental lamina & vestibular lamina

Dental lamina arises lingually

* It helps to attachment of enamel organ to oral ectoderm
* Dental lamina ectodermal in nature, epithelial
* Dental lamina then proliferates to form or give tooth germ
* which helps to form the tooth
* Dental lamina forms ~~tooth~~ bud like structure called tooth germ
* at specific 10 places of Dental lamina give rise to 10 tooth germs
* which give 10 Deciduous teeth



Fate of Dental lamina

* At Early bell Stages it undergoes degeneration which detached Enamel organ from oral ectoderm
* that remains dental lamina called cell rests of Serres.

---

5) Cusps :- The elevation or mount or point on the occlusal or Incical surface are called cusp

different types
one cusp teeth
Two cusp teeth (bicusp)
tricusp (three cusp)

one cusp teeth
~~all~~ ~~anter~~ 2nd premolar

two cusp teeth
1st premolar in Permanent

three cusp
Maxillary molars

2+1

Ridges :- Linear elevation on the surface of tooth is called Ridges

Mesial marginal ridges
distal marginal ridges
Triangular ridges

Grooves :- The linear depression on the sulcus is called grooves.

2 types of grooves

1) developmental grooves
2) Supplemental grooves

---

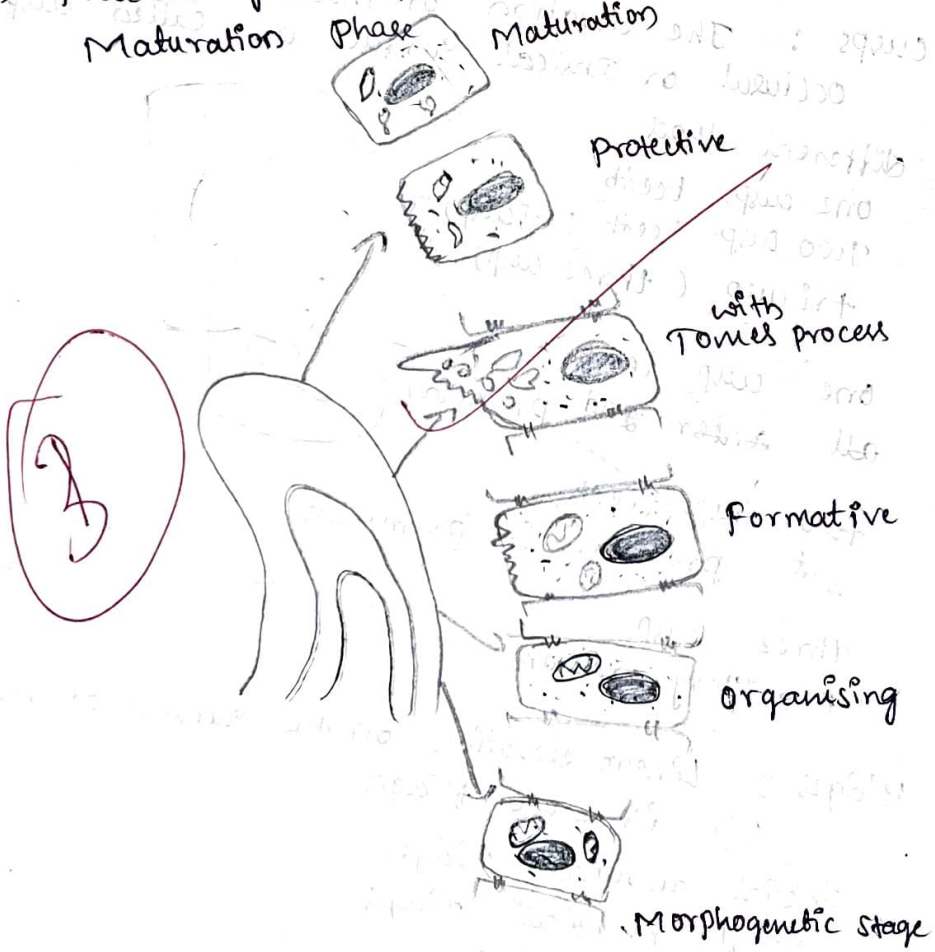
4) Amelogenesis

* Process of formation of enamel is called amelogenesis
* The cells ameloblasts are involved

It involves 3 stages

1) Presecretory stages
~~Maturation stage~~ Marphogenetic Stage
differentiation phase
2) secretory ~~pho~~ stage
3) Maturation stage
Transitional phase
Maturation Proper

1) Presecretory P stage
Maturation Phase



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INTERNAL ASSESSMENT EXAMINATION

(Accredited with ' A' Grade by NAAC)

Department of DAOH

Name : Deepa . G. B

Roll No : 14

Subject : DAOH

Invigilator : Retest

ANSWER SHEET

No. 17-3-21

K. Anila

No. of Sheets Used 0 3

1) Morphogenic stage

* IEE (Inner enamel epithelial cells undergo differentiate into ~~odontoblast~~ Ameloblasts
* The IEE influence to dental papilla to form Odontoblast.
* Nucleus of ameloblast present at center
* Golgi complex more towards proximal end
* mitochondria evenly distributed

2) ~~Orga~~ Diffentiation

The ameloblast cells starts to form enamel after formation of predentin layer

1/2

3) Secretory phase

* The enamel proteins which are synthesised by ribosom on the RER and then enter into ER
* These are secrete enamel matrix

3) Maturation stage

* Transition phase
  cells die off

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NAVODAYA DENTAL COLLEGE & HOSPITAL

INTERNAL ASSESSMENT EXAMINATION

(Accredited with 'A' Grade by NAAC)

Department of Oral pathology

Name : Vemula. Kavitha

Roll No : 18D2569 (64)

Subject : Oral pathology.

Invigilator : Retest

No.: 16-5-21

ANSWER SHEET

Vani

44½/50

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(1) Epithelial tumours :- Tumours which occur in epithelia is known as epithelial tumour, it may be benign, premalignant, malignant.

Undifferentiate ??

→ Squamous cell carcinoma :-

* Squamous cell carcinoma is a malignant tumour
* About 94% of oral cancers is squamous cell carcinoma
* Male are more affected than females
* M : F = 3 : 1
* Carcinoma increases with the increase age rate.

→ Epithelogy

Intrinsic factor :- Systemic and genetical factors like malnutrition, Iron-deficiency anaemia.

Extrinsic factor :- Tobacco smokeless, alcohol, Syphilis

- Tobacco Smokers
- Smokeless tobacco
- VH-A deficiency
- Syphilis
- Candidal infection
- Oncogenic virus
- immunedeficiency.
- Iron deficiency anemia

→ Clinical features :-

* males are predominately affected.
* Exophytic - irregular, fungating, papillary (or) verriciform
* Endophytic - irregular, ulcerative, rounded borders

When there is a degradation of underly bone leads to moth-eaten appearence in the radiolucency of radiograph.

Leukoplakia
Erythoplakia
Leu Erythro leukoplakia

metastasis -

Spread lymphatic to ipsilateral cervical lymph node, metastasis in distinct areas like bone, liver, lung

6. TNM grading staging

* Primary tumour is

T_x - primary tumour are not assessed

T_0 - No evidence of primary tumour.

T_{cis} - Carcinoma insitu

T_1 - tumour 2mm (or) less than 2mm in greater dimension

T_2 - tumour more than 2mm (or) less than 4mm in greater dimension.

T_3 - tumour more than 4mm (or) less than 4mm in greater in dimension.

T_4 - tumour invades cortical bone, alveolar ride, floor of mouth (or) skin, face

T_{4a} (oral cavity) - invades adajacent structure to muscle (styloglossus, hyoglossus, geinoglossus), maxillary sinus

T_{4b} - Invades pterygoid, bases of skull.

* Regional lymph node :-

N_x - Regional lymphnodes are not assessed

N_0 - No regional lymphnode metastasis

N_1 - metastasis in single ipsilateral lymph node is 3mm (or) less than greater dimension

N_2 - metastasis in single ipsilateral lymphnode is more than 3mm but none of 6mm in greater dimension.

N_{2a} - metastasis in multiple ipsilateral more than 3mm & none 6mm in greater dimension

metastasis in bilateral ipsilateral more than 3mm & none 6mm in greater dimension.

N_{2a} - metastasis in single ipsilater more than 3mm & none 6mm in greater dimension

N_{2b} - metastasis in multiple ipsilater more than 3mm & non 6mm in greater dimension

N_{2c} - metastasis in bilateral ipsilateral more than 3mm & non 6mm in greater dimension

N_3 - metastasis more than 6mm in greater dimension.

→ Metastasis

M_x - Dynamic metastasis not assessed

M_0 - No metastasis

M_1 - metastasis

Staging

Stage X - Tcis No Mo.

Stage 0 - Tis No Mo.

Stage I - T_1 No Mo

Stage II - T_2 No Mo

Stage III - T_3 No Mo

T_1 N_1 Mo

T_2 N_2 Mo

T_3 N_2 Mo

Stage - IVa - T4a N0 M0

T4a N1 M0

T1-N2 M0

T2 N2 M0

T3 N2 M0

T4a N2 M0

Stage IVb - Any T N3 M0

T4b Any N M0

Stage V - Any T Any N M1

→ Histology

- lesional epithelial invasion through the basement membrane to the sub epithelial connective tissue.

- lesional cells
  - Keratin pearls
  - Keratonation of individual (or) group cell
  - Downward proliferation
  - hyperkeratosis
  - nucleus and cellular pleomorphism.

write in detail.

→ Treatment :-

- Surgical excision
- Surgery and radiotherapy
- Radical neck disection

Surgical survival rate :- 30%

(8)

(2) Dental Caries :-

- Dental Caries :- It is a microbial infection begins as a demineralisation of inorganic portion and destruction of organic portion of tooth leads to cavitation.

- Histopathology

- 5 zones of Dentinal

(1) zone of fatty acid degeneration
(2) zone of dentinal sclerosis
(3) zone of decalcification of dentin
(4) zone of bacterial invasion
(5) zone of decomposition of dentin

→ (1) zone of fatty acid degeneration :-

- It is innermost zone.
- zone of fatty acid degeneration of Tome's fibres.
- It consists of normal dentin.
- No bacterial in dentinal tubules
- No crystals in the lumen of dentinal tubules

② Zone of dentinal sclerosis

- Zone of dentinal sclerosis is called due to deposition Ca^{2+} ions in the dentinal tubules
- No bacterial invasion in dentinal tubules
- Remineralisation takes place
- demineralisation of odontogenic process

③ Zone of bacterial decalcification of dentin

- demineralisation of intertubular dentinal tubules
- Softer than ~~normal~~ dentin
- Remineralisation and self repair takes place.
- No bacterial invasion

Not required for this question

④ Zone of bacterial invasion

- Widening of dentinal tubules due to the presence of micro-organisms.
- No remineralisation & self repair
- Denaturation of Collagen.
- little minerals in dentinal tubules

⑤ Zones of decomposition of dentin

- Decomposition of dentin
- micro-organisms present in dentinal tubules
- No remineralisation & self repair

→ Zones of enamel

① Zone of translucent
② Zone of Dark portion
③ Zone of body of lesion
④ Zone of surface layer

① Zone of translucent

- It lies adjacent infront of enamel lesion
- more porous
- highly demineralisation
- It may (or) may not be present in all the caries (It is not seen in all the caries)

② Zone of Dark portion

- It is also known as positive zone
- more porous
- highly demineralisation
- The polarised light doesnot transmit into the enamel so it is known as zone of Dark

③ zone of body of lesion

- It is the greater zone
- more porous
- more highly demineralisation
- present between zone of Dark zone and zone of surface layer

④ zone of surface layer

- is the outermost layer (present)
- less porous
- less infected due to demineralisation and high fluoride concentration.

Ethiopathogenesis :-

① Acidogenic theory

② proteolytic theory

③ proteolytic chelating theory

④ surface chelating theory

⑤ Autoimmune theory

→ ① Acidogenic theory

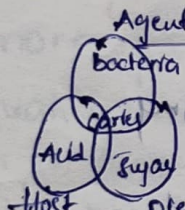
- It is also known as chemoparasitic theory
- Two stages
- Early stage - enamel decalcification
- Causes degradation of dentin.

Late stage
- dissolution of hard tissues

Morphological factors causes
- Micro-organisms
- role of carbohydrate
- role of bacterial plaque
- Role of acid

- role of carbohydrate
- The food which contains carbohydrates
  sucrose, fructose, glucose
- main sucrase fermates the micro-organism
- Cariogenic agent - degrades hydroxyapetes of enamel & dentin

Sugars + Carbohydrate + acids → bacterial invasion → dental caries



Epidermological triad.

- Role of acids
- Lactic acid, glutamic acid, Aspartic acid causes dental caries

- Role of bacterial plaque
- micro-organic + food debris → plaque

- Role of bacterria
- Streptococcus mutans causes caries
- Lactobacillus acidophillus.

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(Accredited with 'A' Grade by NAAC)

Department of Oral pathology

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Subject : Oral pathology

Invigilator : Retest No. of Sheets Used 02

(3) ~~Osteo~~ Oral Submucous fibrosis

- Chronic, proliferation, & scarring of pre-cancerous tumour of oral mucosa.
- It is mostly seen in Indians
- Females are predominant
- proposed by Schwartz

Aithology

- Chronic placement of betel quid.
- It consists of betel ~~leaf~~ leaf, slaked lime, Areca nut.
- Areca nut disrupt the equilibrium of synthesis and degradation of extracellular matrix
- cytokinin produced from the inflammatory infiltrate causes
  - fibroblastosis
  - Synthesis of collagen
  - reduction of collagenase

copper present in the aerca nut cause collegen synthesis.

clinical features

Late

~~Early~~ Stage

- ~~benign~~, ~~pre-cancerous~~
- PreMalignant tumour.
- blisters are seen in palate
- petechaie - dilation of vascular
- excessive saliva.
- dryness of mouth

Advance Stage

- blanced, opaque plaque
- fibrous plaque
  - common in buccal mucosa, palate, lip.
  - In buccal mucosa fibrous plaque present → vertical
  - soft palate - fibrous bundle of plaque and deviation of uvula
  - pterygoid plate raphae - fibrous cause problem difficulty in mouth opening
  - Circular bands patches around the mouth.

Histology

→ Histopathology

Epithelial

- hyperkerotosis
- rete ridges lost
- Subepithelial - vessels are present.

→ Connective tissue

- Juxtra epithelial collegen presents
- Inflammatory infiltrate.

Grading :-

→ Khanna proposed the clinical and histological differentiate

Grade Type - I - Interincisal distance is 35mm

Grade Type II - Interincisal distance is 26-35 mm

Grade Type III - Interincisal distance is 26-15 mm

Grade Type - IV - Interincisal distance is less than 15mm

Grade Type - IVa - Malignant cytological features are present throughout the epithelium

Treatment

- habit cessation (Areca nut, betel quid)
- surgical excision of fibrous bands

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(4) Osteosarcoma :-

Osteosarcoma is defined as inflammation in the bone that begins in the medullary cavity and haversian canals, extends to involve periosteum of affected area

(4) Osteosarcoma :-

- It is a maligant tumour
- maliganacy of mesenchymal origin
- Ability of production of osteoid (or) immature bone

Ethology clinical features

- Bimodal age
- 10 to 20 age and > 50 years
- male > female
- maxilla > mandible
- mandible
- maxilla - posterior, ramus affects
- maxilla affects - superior - orbital rim, zygoma
  inferior - alveolar ridge, floor of sinus, palate

- paraesthesia, loosening of tooth, swelling,
- nasal obstruction.

Radiology

- Classic feature - Sun burst, Sun ray like appearence
- Systematic enlargement of PDL space around the tooth.
- mixed radiolucency and radiopaque.

Codman's triangle

A long bone affected by the osteosarcoma the periosteum enlarging over the expanding tumor cells, tent like

The point where the periosteum merges, acute angle formed between bone lesion and periosteum

This feature is highly suspicious to Osteosarcoma.

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Histopathology

- proliferation of osteoids
- tumor cells are round, pleomorphic cells and nuclei
- Chrondroblastic, Osteoblastic

Treatment

- high grade demonstration of diffuse

if the osteoid production minimal

- ~~well differentiated~~
- bowell differentiated shows - bone formation
  - minimal acellular

Treatment :-

- Local surgical excision
- chemotherapy followed by radiotherapy
- post-operative chemotherapy

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(6) Osteomyelitis

- It is defined as inflammation in the bone that begins in the medullary cavity and Haversian canal extends to involve periosteum of affected area

Classification

Based on location

1) Intramedullary
2) Sub periosteum
3) periosteum

Based on duration

- Acute
- chronic

→ Based on Suppurative (presence or absence)

→ Presence of Suppurative

- Acute suppurative
- Chronic suppurative
  - Primary
  - Secondary
- Infantile suppurative

→ Absence of suppurative

- Chronic non suppurative
  - Focal sclerosing
  - diffuse sclerosing
- Radiation sclerosing osteomyletis.
- Garre's sclerosing osteomyletis

Other osteomyelitis include the conditions like tuberculosis, Actinomycosis & Syphilis

→ Acute osteomyelites.

- Acute osteomyelites is a severe form of the sequale of pulpitis. Infection & spread throughout the medullary space.

Aetiology:

- Staphylococcus aureus
- Haemophilus influenza
- pneumococcus species
- β-haemolytic streptococci

Clinical features

- male > female
- mandible > maxilla
- painful swelling
- paraesthia, loosening of tooth
- Intraoral and extraoral pus exudate

Radiology

- Bony liquefaction, purulent exudate
- inflammatory infiltrate
- degradation of osteoblast and osteocyte form sequestrum
- living bone surrounds the sequestrum known as involucrum

Treatment

- Sequestrectomy.
- Antibotic therapy

(7) Syphilis

- Syphilis is caused by the treponema palladium.
- Sexually transmitted disease (STD)

Ethiology

- Person to person distance
- During sex use condoms

Oral manifestations of syphilis

- In the secondary stage of syphilis this oral infections are seen
- There will be swelling patches are seen
- Mucous patches are seen around the mouth
- ulceration.

1½

Treatment

- Surgery excision

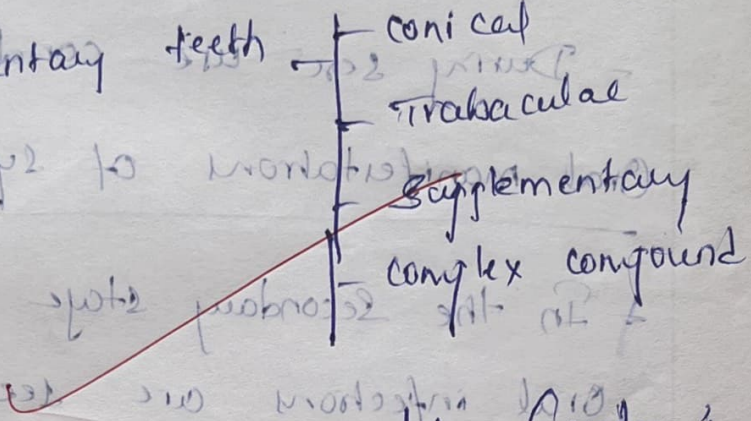
(8) Developmental disturbances of number of teeth

→ Supplementary teeth

→ disturbance of number development of teeth

- There are more number of teeth than the normal teeth in the dental arch

- Supplementary teeth



- Similar to the conditions like Gardener's Syndrome

(A) Histopathology of enamel & Enamel

(1) Environmental enamel Hypoplasia

- Developmental anamoly based on the structure of the tooth

(1) Enamel

- Enamel hypoplasia

Amelogenesis imperfecta

Environment enamel hypoplasia

Focal Generalised

Enivornmental enamel hypoplasia

- Enamel hypoplasia occurs at the deciduous dentition and carried on to the permanent dentition.
- Enamel is absent (or) present in little amount at certain areas
- Both permanent and deciduous dentition are affected
- Teeth involved are maxillary incisors molars
- Teeth in one quadrant are more affected

- Radiodensity of enamel is less when compared to normal enamel

- Some times radiodensity of enamel is equal to that of dentin

→ Clinical Manifestations:

- Veenering / crown preparations for esthetic
- Attrition is avoided
- Chance of prone of caries i.e Dental caries

Viral infections

↓

deciduous dentition

↓

Enamel hypoplasia

↓

permanent dentition

↓

Loss of enamel tooth affected

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Dentinal caries

⑧ Dental Caries

- Dental caries
- It is a microbial infection begins as demineralization of inorganic portion and destruction of organic portion of tooth leads to cavitation

Histopathology

- Zones of Dentin
  1. Zone of fatty acid degeneration
  2. Zone of dentinal sclerosis
  3. Zone of decalcification of dentin
  4. Zone of bacterial invasion
  5. Zone of decomposition of dentin

① Zone of fatty acid degeneration

- It is innermost zone
- Zone of fatty acid degeneration of tomes fibers
- It consists of normal dentin
- No bacterial in dentinal tubules
- No crystals in dentinal tubules

② Zones of dentinal sclerosis

- Zone of dentinal sclerosis is called due to deposition Ca^{2+} ions in the dentinal tubules

- No bacterial invasion in bacterial tubules.
- Remineralisation takes place
- demineralisation of odontogenic process.

(3) zone of decalcification of dentine
- softer than normal dentin
- No bacterial invasion

(4) Zone of bacterial invasion
- widening of dentinal tubules due to presence of micro organism
- No remineralisation & self repair
- Destruction of collagen

(5) zones of decomposition of dentin
- micro-organisms present in dentinal tubules
- No remineralisation & self repair

4½
→ Zones of enamel
(1) zone of translucent
- high porous
- high demineralisation

Draw diagram

(2) zone of Dark portion
- more porous, high demineralisation
- postive zone

(3) zone of body of lesion
- more porous, high demineralisation
- greater zone

(4) zone of Surface layer
- less porous, less infected

(11) Cart wheel

Ans:
- It is a microscopic structure
- It is a spindle cells having elongated nuclei radiating from center
- Cellular spindled lesion with whorls as opposed to parallel fascicles/straight angle bundles
- It is a malignant fibrous histiocytoma pattern
- Cartwheel cells have similar looking pattern of purkenje cells.

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(12) Stag. horn pattern

- The cells in the pattern ranges from oral to slightly spindle
- It has more vascular pattern composed of large & small vessels lined by single layer of flattened endothelium cells that are typically elongated forming the stag horn pattern
- It is described as hemangiopytoma but it is non specific seen in number of tumor

(15) Regional Odontodysplasia

Ans:- - This is also called as ghost cell
- Both dentin and enamel are lost and
- Calcifications of pulp occurs at different stages.
- pulp stones are seen
- This is a developmental disturbance of structure of both enamel and dental
- pulp gets occurs affected.

(16) Mycobacterium tuberculosis

Ans:- It is a species of pathogenic bacteria
- It is a family of mycobacteria tuberculae
- It appears in both gram +ve & gram -ve
- Firstly it affects lungs
- Humans are reservior of mycobacterium tuberculosis
- Mayor spread is through droplet fuel,

(9) Snyder's test :-

- This is a caries activity test
- In this test lactobacillus colonies are formed
- Glucose agar with bromocresol green dye with turns green in the presence of cariogenic bacteria
- It turns blue when pH is 4.8
- It indicates caries

(2)

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(10) Epithelial Dysplasia

- ~~Leukoplakia~~ loss of polarity of basal cell
- more than one layer formed basaloid layer
- rete ridges push downwards (down drop)
- Nuceli pleomorphism
- cellular hypertropy
- cell and Nuceli pleomorphism
- hyperchromatic
- increase the ratio of N/C ratio.
- increased stratified epithelium
- mitotic figure increased.

~~Histo~~

- Histopathology

- Mild dysplasia
- Moderate dysplasia
- Severe dysplasia
- Carcinoma in situ

→ Mild dysplasia

- Atypical features are lower 1/3rd of epithelium
- Malignant Presentation in the upper 2/3rd of epithelium.

→ Moderate dysplasia

- Atypical features are ~~upper~~ lower 2/3rd of epithelium
- malignant prematuration in the upper 1/3rd of epithelium

(2)

→ Severe dysplasia

- Atypical features are Complete throughout the epithelium

→ Carcinoma in situ

- premalignant and malignant features are present throughout epithelium

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