

REGRESSIVE ALTERATIONS OF THE TEETH

- Attrition
- Abrasion
- Erosion
- Abfraction
- Dentinal sclerosis
- Secondary dentin
- Pulp atrophy
- Pulp calcification
- Resorption
- Hypercementosis
- cementicles

ATTRITION

- DEFINATION
- The physiologic wearing of a tooth as a result of tooth –to – tooth contact, as in mastication or parafunctional habits.



ATTRITION

- Physiological not pathological process.
- Present in deciduous and permanent dentition.
- Present in dentinogenesis imperfecta and amelogenesis Imperfecta.

- PREDISPOSING FACTORS-
- Chewing tobacco
- Bruxism
- Exposure to abrasive dust.

ATTRITION

Clinical manifestation-

- ⦿ It is seen on occlusal, incisal and proximal surfaces of teeth.
- ⦿ Appearance of small polished facet on cusp tip or ridge or slightly flattening of an incisal edge.
- ⦿ Shiny facets on amalgam contacts.
- ⦿ Fracture of cusp or restoration.
- ⦿ Reduction in the mesio-distal dimension of the tooth.
- In severe cases enamel is completely worn away results in yellow or brown staining of exposed dentin.
- Tooth worn to gingival level

ABRASION

DEFINITION

- It is the pathologic wearing away of tooth substance through some abnormal mechanical process.

Causes-

- Abrasive dentrifices.
- Tooth brush.
- Other causes like- Habitual opening of bobby pins with teeth may results in notching of incisal edge of maxillary central incisor.
- Habitual pipe smokers.
- Improper use of dental floss, toothpicks

ABRASION

Clinical manifestation-

- V- shaped or wedge shaped ditch on the root side of C-E junction.
- More wide than deep.
- Premolars and cuspids are commonly affected. It is more on left side of mouth in right handed people and vice versa.

EROSION

DEFINITION-

- It is an irreversible loss of dental hard tissue by a chemical process that does not involve bacteria.

Pathophysiology

- Dissolution of mineralized tooth structure occurs upon contact with acids that are introduced into the oral cavity by intrinsic or extrinsic sources.



EROSION

Causes

- Extrinsic

i) Food stuff

Acid beverages,
foods, medications or
environmental acids

ii) Iatrogenic



Tooth Erosion

EROSION

Intrinsic factors

- Gastric acids(pH<1)
- Gastroesophageal reflux
- Excessive vomiting.
- Saliva as modifying agent-
 - Imp factor in etiology of erosion.
 - Buffering capacity .
 - Flow rate .



ABFRACTION

- ⊙ It is pathological loss of both enamel and dentin caused by biomechanical loading forces.
- ⊙ Type of tooth loss which is confined to the gingival third of the clinical crown .
- ⊙ Pathophysiology-
- ⊙ occlusal forces causes the teeth to flex though little. Constant flexing causes enamel to break from the crown(usually on buccal surface).

ABFRACTION

- Breakdown of the structure is dependent on-
Magnitude, duration,
direction , frequency, and
location of the forces.



DENTINAL SCLEROSIS

- ⊙ Also c/as transparent dentin
- ⊙ Characterised by calcification of primary dentin that is dentinal tubules.
- ⊙ **C/F**;-Harder than normal dentin.
- ⊙ **Causes**-Injury, aging, caries, abrasion.
- ⊙ **H/P**;- In transmitted light, below carious lesion it appear transperant.
- ⊙ It appers transperant because of difference in the refractive index of the dentinal tubule and the normal tubules.



SECONDARY DENTIN

- ⊙ Physiological
- ⊙ Regular, uniform
- ⊙ Laid down through out life as a physiological factor like aging, tooth eruption
- ⊙ Produced slowly.
- ⊙ Reparative dentin
- ⊙ Results mainly from attrision.
- ⊙ It is in form of tooth wear, bruxism, produces natural protective barrier

RETICULAR ATROPHY OF PULP

- ⊙ Common in elderly person.
- ⊙ H/P;- presence of large vacuolated spaces.
- ⊙ Reduction in cellular elements
- ⊙ Degeneration and disappearance odontoblasts.
- ⊙ This could be seen as fixation artifact.

PULP CALCIFICATION

- The two chief morphologic form of pulp calcifications are
- 1)discrete pulp stones; and
- 2)diffuse calcification

PULP CALCIFICATION

- ⊙ Discrete pulp stones;

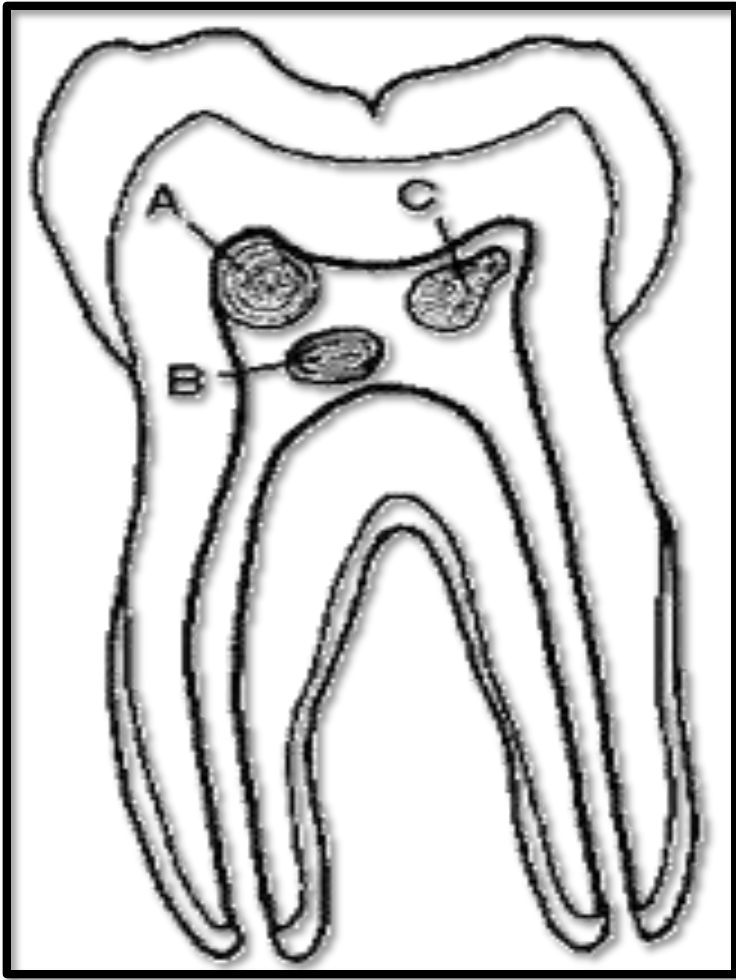
- ⊙ I) True pulp stones; and

- ⊙ II) False pulp stones.

- ⊙ I) True pulp stones;

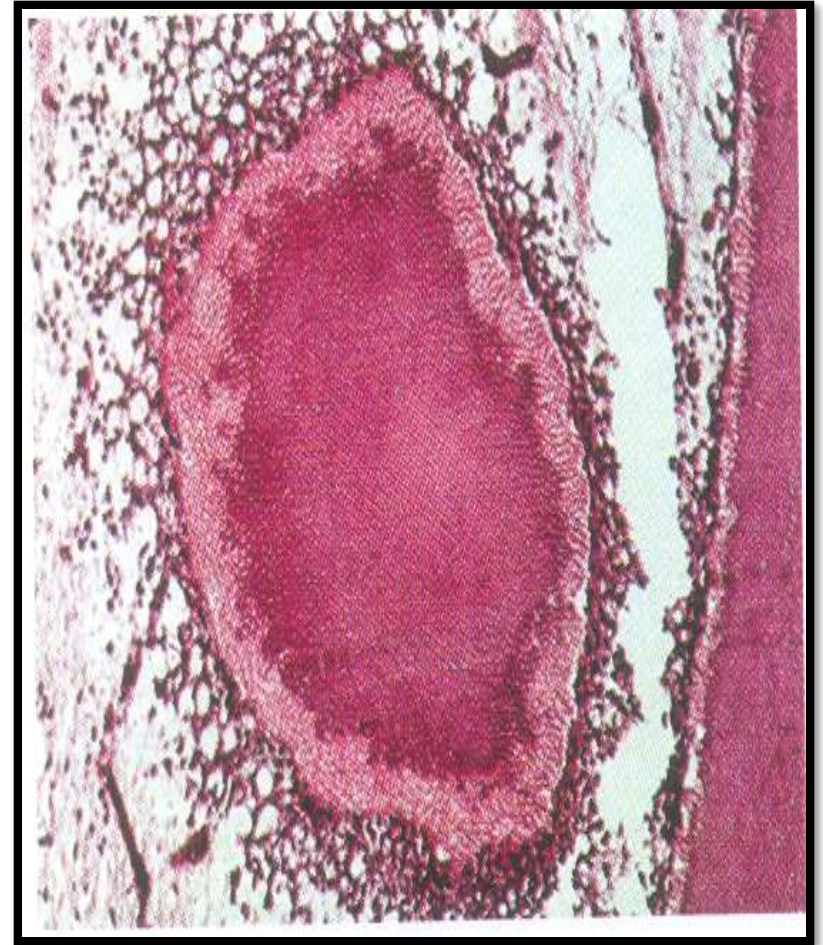
- ⊙ Localised masses of calcified tissue that resemble dentin.

- ⊙ presence of dentinal tubules.

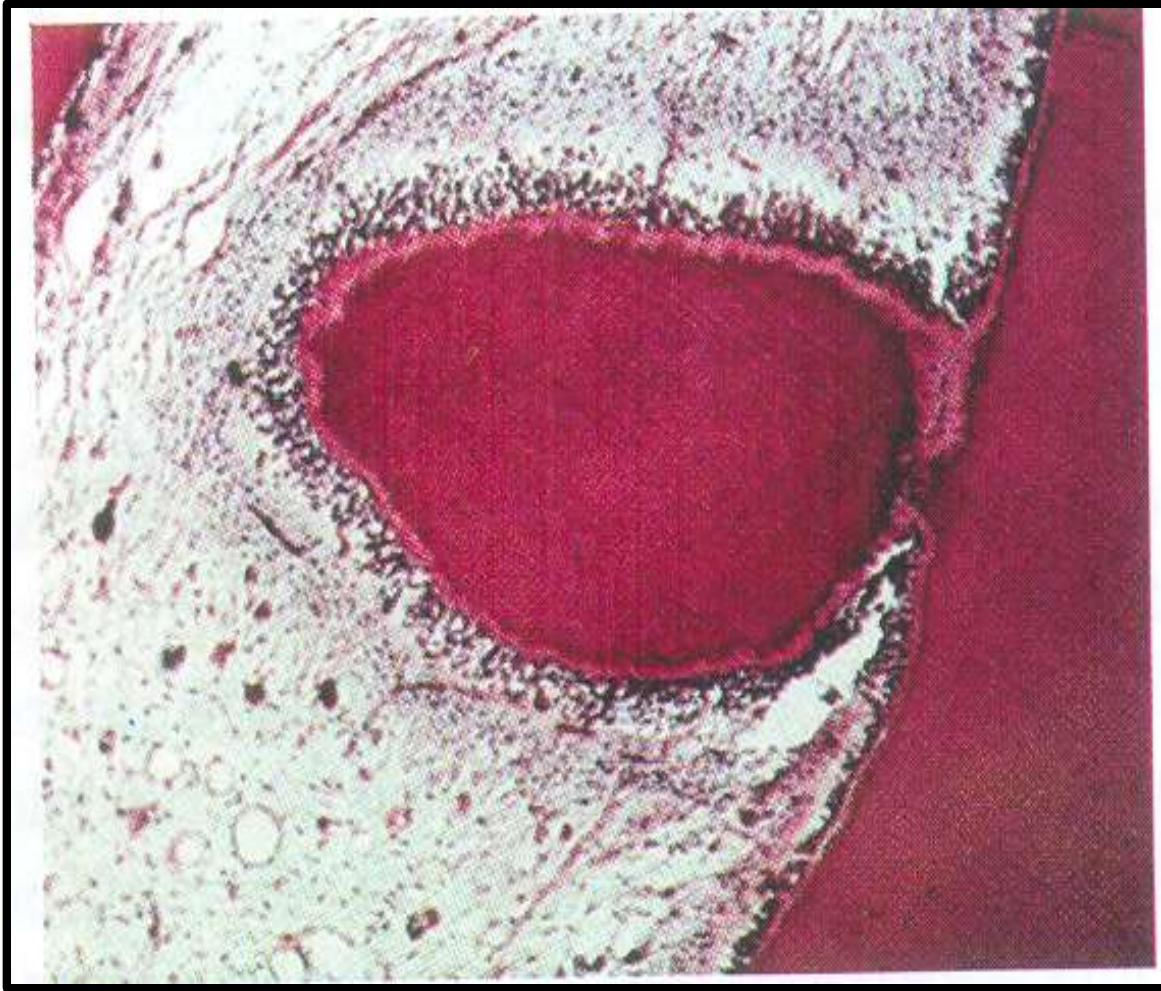


PULP STONES

- Resemblance to secondary dentin.
- More common in pulp chamber than in root canal.
- Two types;
- free & attached.



Attached pulp stone



PULP STONES

II) False denticles

- Do not resemble dentinal tubule.
- It is nodules of concentric layers, deposited around a central nidus.
- False are ;free and attached
- If this stone is in close approximation of dentinal wall & surrounded by secondary dentin ,c/as interstitial denticle.

False pulp stone



DIFFUSE CALCIFICATION

- ⊙ Most commonly in root canals.
- ⊙ Resemble calcification seen in other part of body, calcific degeneration.
- ⊙ **Etiology-**
 - Caries
 - Trauma.
- ⊙ **Local or systemic diseases** --Cholelithiasis, artherosclerosis, gout, acromegaly, osteitis deformans, hypercementosis, torus platinus.
 - Bacteria.
 - Cutting procedures and restorative materials.

Clinical features-

- Pain, pulpal neuralgia ,excruciating pain resembling tic douloureux.

Diffuse calcification



RESORPTION OF TEETH

1 External resorption

- a) Periapical inflammation
- b) Reimplantation of teeth.
- c) Tumors and cysts.
- d) Excessive mechanical or occlusal forces.
- e) Impaction of teeth.
- f) Idiopathic.

Resorption

- 2) Internal Resorption

- a) Idiopathic.

RESORPTION

INTERNAL RESORPTION

- ⦿ Chronic perforating hyperplasia of pulp, internal granuloma,
- ⦿ odontoclastoma, pink tooth of mummery.
- ⦿ Begins centrally within the pulp.
- ⦿ Inflammatory hyperplasia of the pulp.



RESORPTION

Clinical feature-

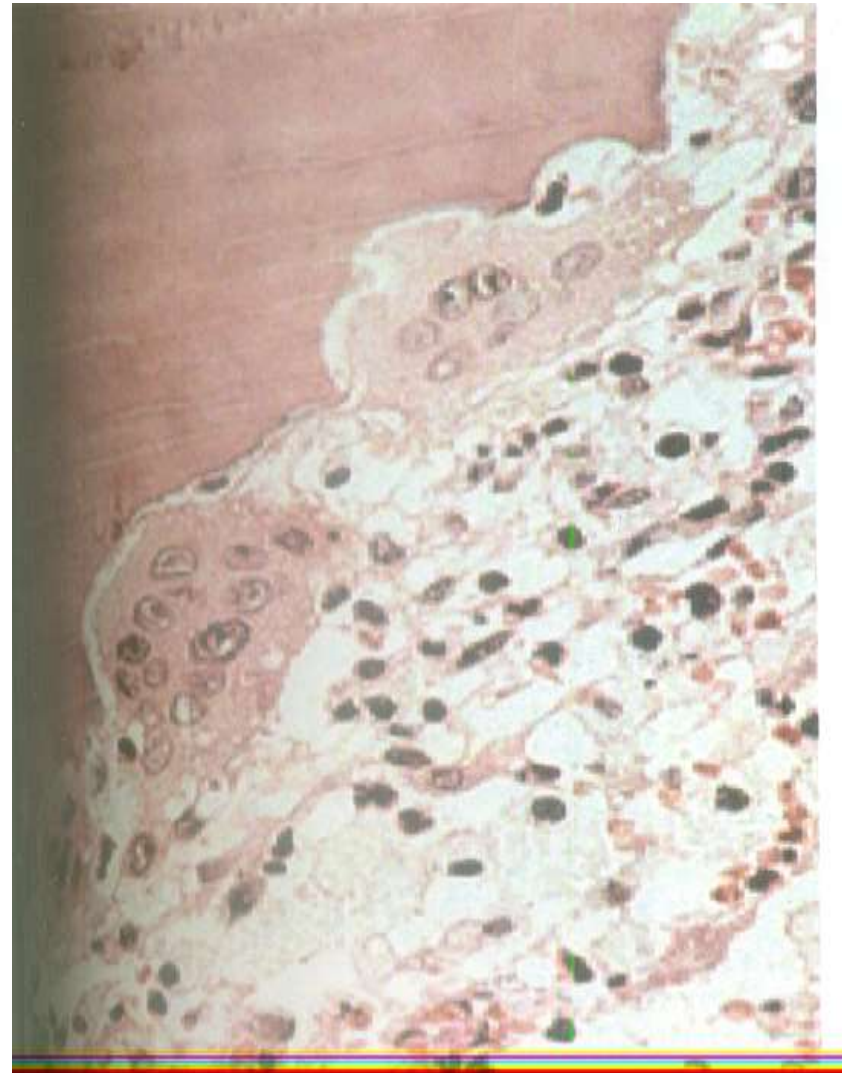
- Appearance of a pink –hue area on the crown of the tooth.
- Single tooth ,multiple tooth involvement.

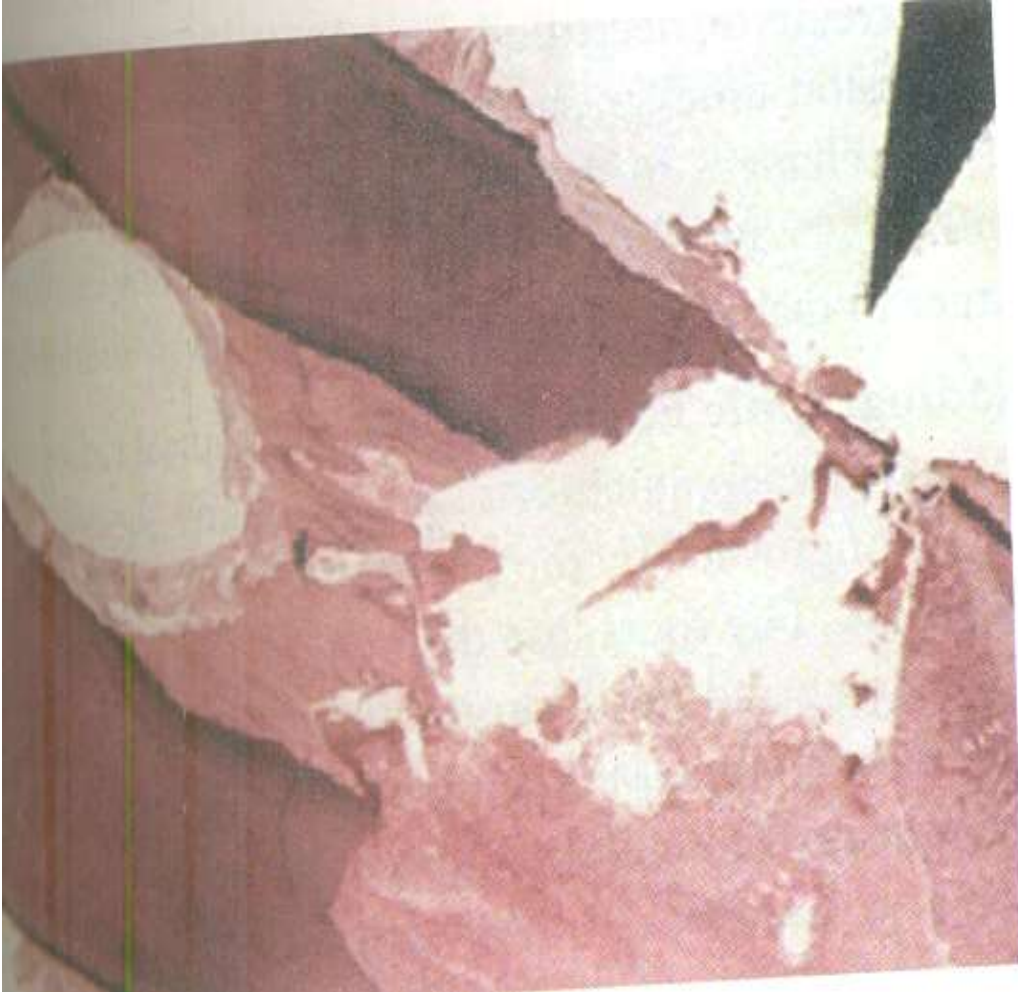
Radiographic Features-

- Round or ovoid radiolucent area in the central portion of the tooth.
- Perforation of tooth can occur.

RESORPTION

- Histologic Features-
- Irregular lacunar variety showing osteoclast or odontoclast.
- Chronic inflammatory reaction is evident.





HYPERCEMENTOSIS

- It is a non-neoplastic condition in which excessive cementum is deposited in continuation with the normal radicular cementum.
- It may be Focal or all over root surface.
- Etiology-
- Accelerated elongation of a tooth.
- Inflammation about a tooth.



HYPERCEMENTOSIS

- Tooth repair.
- Osteitis deformans ,or paget's disease of bone.
- Spike formation.

Clinical features-

No significant signs and symptoms present.

HYPERCEMENTOSIS

- Radiographic features-
- The roots lose their typical 'sharpened' and 'spiked' appearance and exhibit rounding of the apex.



HYPERCEMENTOSIS

- Histologic features-
- Excessive amount of secondary or cellular cementum is deposited directly over the typically thin layer of primary acellular cementum.

The secondary cementum has been term osteocementum because of its cellular nature and its resemblance to bone.

Treatment- no t/t is indicated

CEMENTICLES

- Cementicles are small foci of calcified tissue ,which lie free in the periodontal ligament of the lateral and apical root areas.
- 1)Develop by calcification of nest of epithelial cells as a result of degenerative changes.
- 2)It arise from focal calcification of connective tissue between Sharpey's bundles with no apperent nidus.

CEMENTICLES

- 3) cemental tears or
- 4) fragments of bone detached from alveolar bone may resemble cementicles.
- 5) Also arise through calcification of thrombosed capillaries in the periodontal ligament.
- If clusters of cementicles fuse ,form cementoma at the apex of root.