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1. Cementum in health and disease
2. NSAIDs; role in host modulation
3. Factors affecting bleeding & clotting time.

ANSWERS :-

- ① Cementum is an avascular mesenchymal tissue, ectomesenchymal in origin.
 - It was 1st described by two pupils of Puskings.
 - Formation of Cementum is called Cementogenesis.
 - Acellular Cementogenesis: The fibroblasts they migrate towards the developing root surface and lay down a thin layer of fibrin. This layer of fibrin will become dense & eventually mineralize. Once the 1st layer is mineralized; the subsequent layers will also get mineralized.

- Cellular Cementogenesis: They are divided in two stage
 - Pre-functional stage
 - functional development stage.

Sruje

II. Depending on presence of fibres.

- (a) fibrillar cementum
- (b) afibrillar cementum

III. This classification was 1st proposed by Owens et al; which was later modified by Schroeder & his colleague.

- (a) Acellular afibrillar cementum
- (b) Acellular extrinsic fiber cementum
- (c) Mixed cellular fiber cementum
- (d) Cellular intrinsic fiber cementum.
- (e) Intermediate cementum

(a) Acellular Afibrillar cementum

- 30-230 microns thickness
- no cells
- no fibers
- seen in cervical area of root

(b) Acellular extrinsic fiber cementum

- Sharpey's fibers are present
- No cells present

(c) Mixed cellular fiber cementum

- laid by osteoblasts, cementoblast, fibroblasts.

* Cemento enamel Junction → The portion ⁽³⁾ of tooth where cementum meets enamel is CEJ.

Three variants are seen.

- ① Cementum overlaps enamel
- ② Cementum meets enamel at a point
- ③ Don't meet.

* CEMENTUM IN DISEASE

- In periodontitis; the root surface of the tooth will be rough because of presence of subgingival calculus and rough cementum.
- Root Planing is a procedure where subgingival deposits & necrotic cementum is removed resulting in a smooth, polished surface.
- In a chronic periodontitis patient; there will be presence of pockets.
- Long standing pockets can cause root surface changes.
- 2 different root surface changes seen are
 - ① structural
 - ② cytotoxic
 - ③ chemical

- ④
- Different studies has been done where it is concluded that laser is an effective treatment option for periodontitis.
 - Bone grafts / ATR.
 - Use of bone grafts like demineralized freeze dried bone allograft has been found to effective for periodontal regeneration.
 - PDGF + bone grafts, ATR, different bone grafts, endo gain, growth factors like PRF, PRP etc has been found to be effective when used alone or in combination.
 - Systemic diseases such as Paget's disease, periodontal dysplasia, acromegaly, etc have defective cementum.
 - In scleroderma; there is generalized widening of PDL spaces.
 - Hypercementosis is observed in Paget's disease.

→ Traditional NSAIDs can be divided into

- Salicylate derivative → ^{Aspirin} ~~Paracetamol~~
- Pyrazolone derivative → Phenylbutazone
Oxyphenbutazone
- Enolic acid derivative → Tenoxicam,
Piroxicam
- Acetic acid derivative → Ketorolac

→ Mechanism of action

(*) Role of PAs.

Membrane phospholipids



Arachidonic acid



PAEs & LTs.



Inflammⁿ & fever.
Pain.

(*) NSAIDs inhibit the cyclooxygenase enzyme & thus prevent production of PAs.

* Review of literature.

6

→ Animal Studies

① Marilyn et al in 1982 ^{did a} study on ~~rabbits~~ rabbits where she evaluated if NSAIDs had any effect on bone loss - It was concluded that when Indomethacin was administered, the amount of bone loss was reduced.

② Xin et al in 2014 did a study where he used ③ groups to evaluate osseointegration of dental implants in rabbits.

- ① placebo
 - ② diclofenac sodium
 - ③ Piroxicam
- } 3 groups

→ It was concluded that neither piroxicam or diclofenac have any role in osseointegration.

→ Human studies

③ Wilson et al → administered Ibuprofen in chronic periodontitis patients. He observed that in test group; the patients had reduced bone loss.

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