



PERIODONTAL REVIEW

DENTALELLE TUTORING

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Periodontics Questions

1. What is the periodontium composed of?
2. What type of mucosa is the gingiva composed of?
3. Is it normal to have melanin pigment in the gingiva?
4. What is the gingival margin?
5. What does the oral epithelium lie?
6. What is 'rete pegs'?
7. Is the sulcular epithelium keratinized?
8. What is the gingival connective tissue composed of?
9. What are gingival fibers composed of?
10. What are reticular fibers?
11. Discuss ALL fiber groups
12. What are gingival cells?
13. What is intravascular fluid?
14. How does the periodontal ligament provide a nutritive function?
15. What is 'acellular cementum'?
16. What are all types of cementum?
17. What is the alveolar process composed of?
18. How is alveolar bone different from alveolar process?
19. What is this image?



20. What is bone produced by?
21. What are Haversian systems?
22. What are periodontal diseases modified by systemic factors?
23. What is the difference between chronic and acute periodontitis?
24. What does NUG and NUP stand for?
25. How much percentage is localized periodontitis and how much of a percentage is generalized?
26. What is the plaque index?
27. What is the gingival index?
28. In mineral maturation, what is quiescence?
29. What are antimicrobials when delivered in the mouth?
30. What is tetracycline used for?
31. Can pus be present with an abscess?
32. What type of rods are in a periodontal abscess?
33. Can an abscess form without periodontal disease?

34. What are the common antibiotics used?

35. What if the client is allergic to penicillin?

Periodontics Questions and Answers

1. What is the periodontium composed of?

- Gingiva, cementum, alveolar bone, and periodontal ligament

2. What type of mucosa is the gingiva composed of?

- Masticatory mucosa

3. Is it normal to have melanin pigment in the gingiva?

- Yes! This is within normal limits and no need to be concerned

4. What is the gingival margin?

- The most coronal portion of the gingiva is the gingival margin. The term marginal gingiva refers to that portion of the gingiva that is located close to the gingival margin.

5. What does the oral epithelium lie?

- It is the stratified, squamous keratinizing epithelium that lines the vestibular and oral surfaces of the gingiva. It extends from the mucogingival junction to the gingival margin, except for the palatal surface where it blends with the palatal epithelium.

6. What is 'rete pegs'?

- The oral epithelium is connected to the underlying connective tissue of the lamina propria by an irregular interface. This interface consists of finger-like projections of connective tissue from the papillary layer extending into depressions on the undersurface of the epithelium. These depressions are located between the interconnected Rete ridges that form the undersurface of the epithelium. Cross-sections of these ridges, as seen in histological sections are sometimes referred to as Rete pegs.

7. Is the sulcular epithelium keratinized?

- It is the stratified, squamous epithelium, non-keratinized or para keratinized, that is continuous with the oral epithelium and lines the lateral surface of the sulcus.

8. What is the gingival connective tissue composed of?

- The gingival connective tissue is composed of gingival fibers, ground substance, and cells, including neural and vascular elements. Its major constituents are water, glycoproteins and proteoglycans. The ground substance permits the diffusion of biological substances between various structural elements.

9. What are gingival fibers composed of?

- Most of the fibers are composed of collagen, with minor contributions from elastic fibers and oxytalan fibers

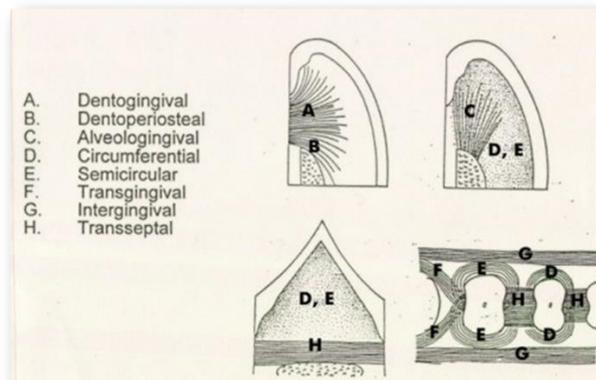
10. What are reticular fibers?

- Fibrils. Type I collagen fibrils are normally organized into bundles of fibrils, or fibers. They are found throughout the lamina propria. Type III collagen fibers are thinner than the type I fibers and tend to be found close to basal laminas of vascular channels and epithelial tissues. They stain readily with silver stains and probably account for most of the argyrophilic (silver stained) fibers seen in silver-stained sections. Type VII collagen is found as anchoring fibrils, located in intimate contact with epithelial basal laminas. In

addition to the fibrillar forms of collagen mentioned above, type IV collagen, an amorphous form of collagen, is found in the basal laminae of the epithelial lining and blood vessel walls, primarily in the lamina densa.

11. Discuss ALL fiber groups

- These are largely composed of collagenous fibers. The **dentogingival fibers (A)** insert into the supracrestal root cementum and fan out into the adjacent connective tissue. **The dentoperiosteal fibers (B)** insert into the supracrestal root cementum and blend with the periosteal covering of the adjacent alveolar process. **The alveologingival fibers (C)** insert into the alveolar crest and fan out into the adjacent gingival connective tissue. **The circumferential fibers (D)** follow a circular course around individual dental units.
- The **semicircular fibers (E)** insert on the approximal surfaces of a tooth and follow a semicircular course to insert on the opposite side of the same tooth. **The transgingival fibers (F)** insert into the approximal surface of a tooth and fan out toward the oral or vestibular surface. **The intergingival (G)** fibers course along the oral or vestibular surfaces of the dental arch. **The transseptal fibers (H)** course from one approximal tooth surface to the approximal surface of the adjacent tooth.



12. What are gingival cells?

- The major cellular elements in the gingival connective tissue include: Fibroblasts, macrophages, mast cells, osteoblasts and osteoblast precursor cells, cementoblasts and cementoblast precursor cells, osteoclasts and odontoclasts, assorted inflammatory cells, and cells that make up vascular channels and nerves. Inflammatory cells include polymorphonuclear leucocytes, lymphocytes and plasma cells.

13. What is intravascular fluid?

- Light forces are cushioned by intravascular fluid that is forced out of the blood vessels. Moderate forces are also absorbed by extravascular tissue fluid that is forced out of the periodontal ligament space into the adjacent marrow spaces. The heavier forces are taken up by the principal fibers.

14. How does the periodontal ligament provide a nutritive function?

- It maintains the vitality of its various cells. The ligament is well-vascularized, with the major blood supply originating from the dental arteries that enter the ligament through the fundus of the alveoli. Major anastomoses exist between blood vessels in the adjacent marrow spaces and the gingiva.

15. What is 'acellular cementum?'

- Cementum without any cells

16. What are all types of cementum?

- **Radicular cementum:** The cementum that is found on the root surface.
- **Coronal cementum:** The cementum that forms on the enamel covering the crown.
- **Cellular cementum:** Cementum containing cementocytes in lacunae within the cementum matrix.
- **Acellular cementum:** Cementum without any cells in its matrix.
- **Fibrillar cementum:** Cementum with a matrix that contains well-defined fibrils of type I collagen.
- **Afibrillar cementum:** Cementum that has a matrix devoid of detectable type I collagen fibrils. Instead, the matrix tends to have a fine, granular consistency.
- **Extrinsic fiber cementum:** Cementum that contains primarily extrinsic fibers, i.e. Sharpey's fibers that are continuous with the principal fibers of the periodontal ligament. Since the fibers were originally produced by periodontal ligament fibroblasts, they are considered "extrinsic" to the cementum. These fibers are orientated more or less perpendicularly to the cementum surface and play a major role in tooth anchorage.
- **Intrinsic fiber cementum:** Cementum that contains primarily intrinsic fibers, i.e. fibers produced by cementoblasts and that are orientated more or less parallel to the cementum surface. This form of cementum is located predominantly at sites undergoing repair, following surface resorption. It plays no role in tooth anchorage.
- **Mixed fiber cementum:** Cementum that contains a mixture of extrinsic and intrinsic fiber cementum.

17. What is the alveolar process composed of?

- The alveolar process is composed of an outer and inner cortical plate of compact bone that enclose the spongiosa, a compartment composed of spongy bone (also called trabecular or cancellous bone).

18. How is alveolar bone different from alveolar process?

- The alveolar bone proper lines the alveolus (or tooth housing) which is contained within the alveolar process. It is composed of a thin plate of cortical bone with numerous perforations (or cribriform plate) that allow the passage of blood vessels between the bone marrow spaces and the periodontal ligament.

19. What is this?



- Where roots are prominent and the overlying bone very thin, the bone may actually resorb locally, creating a window in the bone through which the root can be seen. This window-like defect in the bone is referred to as a fenestration.

20. What is bone produced by?

- Osteoblasts

21. What are Haversian systems?

- Cortical plate of compact bone in the mandible. The mandible is enveloped by a well-developed cortex of compact bone. The bulk of the compact bone consists of cylindrical units of bone, the osteons or Haversian systems (HS).

22. What are periodontal diseases modified by systemic factors?

- Diabetes, pregnancy and puberty

23. What is the difference between chronic and acute periodontitis?

- Chronic – over a longer period of time and Acute – quick onset

24. What does NUG and NUP stand for?

- Necrotizing ulcerative gingivitis (NUG)
- Necrotizing ulcerative periodontitis (NUP)

25. How much percentage is localized periodontitis and how much of a percentage is generalized?

- Extent can be characterized as Localized = $\leq 30\%$ of sites involved and Generalized = $> 30\%$ of sites involved.

26. What is the plaque index?

- The Plaque Index, published by Silness & L e in 1964, scores plaque deposits on a 0-3 scale where 0 indicates that plaque is absent, 1 indicates plaque detected by gingival marginal probing, 2 indicates visible plaque and 3 indicates a lot of plaque.

27. What is the gingival index?

- The Gingival Index, published by L e in 1967, scores a 0 for no visible signs of inflammation a 1 for slight change in color and texture, a 2 for noticeable inflammation and bleeding upon probing and a 3 for overt inflammation and spontaneous bleeding.

28. In mineral maturation, what is quiescence?

- During quiescence, some osteoblasts become lining cells which help regulate ongoing calcium release from the bones. Other osteoblasts become osteocytes which remain in bone, connected by long cell processes, which can sense functional stress on the bone.

29. What are antimicrobials when delivered in the mouth?

- Controlled clinical trials have consistently shown that locally-delivered sustained-release antimicrobials (pill or patch under the gums) along with scaling and root planing, have been shown to provide a clinically and statistically significant increase in the percentage of patients achieving predetermined periodontal benefits, than does scaling and root planing alone.

30. What is tetracycline used for?

- Tetracycline administered as an adjunct to scaling and root planing has shown a pocket reduction greater than scaling and root planing alone.

31. Can pus be present with an abscess?

- In the early stages, there is no fluctuation or pus discharge, but as the disease progresses, the pus and discharge from the gingival crevice become evident. Associated lymph node enlargement maybe present.

32. What type of rods are in a periodontal abscess?

- Streptococcus viridans is the most common isolate in the exudate of periodontal abscesses when aerobic techniques are used. It has been reported that the microorganisms that colonize the periodontal abscesses are primarily Gram negative anaerobic rods.

33. Can an abscess form without periodontal disease?

- Yes! Could happen from a foreign object in the sulcus or a cyst

34. What are the common antibiotics used?

- 1. Phenoxymethylepenicillin 250 -500 mg qid 5/7 days
- 2. Amoxycillin 250 - 500 mg tds 5-7 days
- 3. Metronidazole 200 - 400 mg tds 5-7 days

35. What if the client is allergic to penicillin?

- 1. Erythromycin 250 –500 mg qid 5-7 days
- 2. Doxycyline 100 mg bd 7-14 days
- 3. Clindamycin 150-300 mg qid 5-7 days