Non-Surgical Management of Periodontal Diseases: The Mainstay of Dental Therapy

**Speaker:** Paul Levi, Jr., Associate Clinical Professor

**Course Details:**

A discussion of dental plaque and its etiologic effect on dental caries and periodontitis will initiate the Webinar, which will cover the following.

- How to motivate the dental patient to understand the importance of plaque removal on a daily basis
- Techniques for plaque removal by the patient and which are best for the specific patient
- The difference between scaling and root planing
- Instrument for scaling and root planing
- How to sharpen hand scalers
- How to establish an effective hygiene maintenance program

**Course Objectives:**

- The etiology of periodontal diseases
- Effective motivating techniques
- Techniques to teach patients brushing and flossing and other devices
- Scaling and root planing instruments
- An easy and effective method of hand instrument sharpening
- An effective maintenance program and an appropriate interval for the specific patient
CODA DH Standards Met:

2-8 The curriculum must include content in the following four areas: general education, biomedical sciences, dental sciences and dental hygiene science. This content must be integrated and of sufficient depth, scope, sequence of instruction, quality and emphasis to ensure achievement of the curriculum's defined competencies. A curriculum document must be submitted for each course included in the dental hygiene program for all four content areas.

2-8c Dental sciences content must include tooth morphology, head, neck and oral anatomy, oral embryology and histology, oral pathology, radiography, periodontology, pain management, and dental materials.

2-11 The dental hygiene program must have established mechanisms to ensure a sufficient number of patient experiences that afford all students the opportunity to achieve stated competencies.

2-14 Graduates must be competent in providing dental hygiene care for all types of classifications of periodontal disease including patients who exhibit moderate to severe periodontal disease.

2-15 Graduates must be competent in communicating and collaborating with other members of the health care team to support comprehensive patient care.

2-23 Graduates must be competent in problem solving strategies related to comprehensive patient care and patient management.

Canadian Competency:

• A3. Apply principles of risk reduction for client, colleague and practitioner safety, health and wellbeing.

• A7. Evaluate clients’ health and oral health status using determinants of health and risk assessment to make appropriate referral(s) to other health care professionals.

• A10. Design and implement services tailored to the unique needs of individuals, families, organizations and communities based on best practices.

• C5. Apply theoretical frameworks to the analysis of information to support practice decisions.

• C7. Apply evidence-based decision making approaches to the analysis of information and current practices.

• C14. Convert findings in a manner relevant to clients using the principles of health literacy.
• E8. Manage dental hygiene services individually and as part of a team.

• F2. Collect accurate and complete data on the general, oral, and psychosocial health status of clients.

• F9. Establish dental hygiene care plans based on clinical data, a client-centered approach and the best available resources.

• F11. Provide preventive, therapeutic and supportive clinical therapy that contributes to the clients’ oral and general health.

• F13. Evaluate the effectiveness of the implemented clinical therapy.

• G12. Provide health advice and assist clients in learning oral health skills by coaching them through the learning process.
Classroom Support Materials

Discussion questions:

1. Discuss the inflammatory process related to periodontal disease.
2. Discuss the significance of the supporting structures of the periodontium.
3. Using case studies discuss treatment planning and treatment options for various degrees of periodontal disease.
4. Using evidence based information, investigate and evaluate oral health products for recommendation for the patient with periodontal disease.
5. Identify the clinical and radiographic findings related to gingivitis, slight, moderate, and advanced periodontal disease.
6. Further define and discuss clinical attachment loss and the surgical interventions that may be needed to prevent further destruction.
7. List and discuss the impact that inflammatory systemic diseases have on oral health. Discuss how these findings impact the treatment and management of the patient's oral health.

Classroom activities for additional learning:

1. Students could work in groups to teach each other various brushing techniques, flossing, and the use of other therapeutic aids.
2. Have students role play how to educate a patient who has periodontal disease. Have them discuss assessment findings, dental hygiene diagnose and treatment plan.
3. Students could research topics in periodontics and present their findings.
Exam Questions:

1. Dental plaque is attached to a tooth by:

   A. a calcified byproduct of bacteria  
   B. a sticky glycocalyx secreted by the bacterial cells  
   C. an electrostatic attraction of the bacterial cells to the tooth surface  
   D. a fibrous attachment to the tooth

   Answer: B  
   Rationale: Dental plaque is a complex, organized dense film of microorganisms constrained in glycocalyx (sticky polysaccharide matrix produced) with other organic and inorganic products.

2. An intrasulcular technique of brushing that is effective

   A. utilizes a sweep motion of brushing from the gingiva to the tooth  
   B. utilizes a circular scrub motion of brushing  
   C. utilizes a hard toothbrush  
   D. maintains the bristles stationary in the gingival crevice

   Answer: D  
   Rationale: The stroke should be short ≤5 mm inserted into the gingival crevice and as much as possible interproximally so less is the tendency to scrub; the longer the stroke, the more pressure is needed in order to maintain the bristle tips stationary.

3. The primary purpose of root planning is to:

   A. eliminate porous cementum  
   B. to remove calculus supragingivally  
   C. to remove plaque subgingivally  
   D. to remove stain supragingivally

   Answer: A  
   Rationale: Cementum tends to be porous which helps to retain calculus. The purpose of subgingival scaling and root planing is to remove calculus and to smooth the cementum.
4. When sharpening a periodontal curette the grit of the sharpening tool

A. makes no difference to the tooth  
B. will determine the smoothness of the root being root planed  
C. will be determined by which edge of the instrument is to be sharpened  
D. will be determined by whether one is sharpening a curette or a scaler

**Answer:** B  
**Rationale:** Sharpening instruments is a fundamental skill that should be performed as this will provide the best clinical outcome.

5. When a patient has been diagnosed with rapidly progressive periodontitis, you would expect to see which of the following combinations of microorganisms?

A. F nucleatum, P. gingivalis, A. actinomycetemcomitans  
B. P. gingivalis, P. intermedia, A. actinomycetemcomitans  
C. B. forsythus, P. gingivalis, C. rectus  
D. Treponema ssp., E. corrodens, P. intermedia.

**Answer:** B  
**Rationale:** P. gingivalis, P. intermedia, A. actinomycetemcomitans

Matching

A. Healing by reattachment  
B. Healing by new attachment  
C. Healing by regeneration

1. A_____reunion of connective tissue and root that have been separated by incision or injury but not by disease.

2. C_____the biological process by which the architecture and function of the lost tissue is completely restored.

3. B_____the union of a pathologically exposed root with connective tissue or epithelium. This new attachment must occur in an area formerly damaged by disease.
**Case Study Patient:**

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<thead>
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<th>Case Study Patient:</th>
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<tbody>
<tr>
<td><strong>Age</strong></td>
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<td></td>
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<tr>
<td><strong>Sex</strong></td>
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<tr>
<td><strong>Scenario</strong></td>
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<tr>
<td><strong>Clinically:</strong></td>
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<td>Bleeding upon probing</td>
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<td>Generalized biofilm</td>
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<td>Moderate supra calculus on lower anterior teeth (lingual)</td>
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<tr>
<td>CAL: 0mm</td>
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<td></td>
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<tr>
<td>Probing: 3-5 mm generalized</td>
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<tr>
<td><strong>Weight</strong></td>
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<tr>
<td><strong>BP</strong></td>
<td>WNL</td>
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<tr>
<td><strong>Chief complaint</strong></td>
<td>Gums bleed when patient brushes and flosses</td>
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<tr>
<td><strong>Medical history</strong></td>
<td>WNL</td>
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<tr>
<td><strong>Current medications</strong></td>
<td>None</td>
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<tr>
<td><strong>Social history</strong></td>
<td>No contributing factors</td>
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1. How long does plaque have to be undisturbed before it elicits a bleeding response?

A. 2 days  
B. 4 days  
C. 3 weeks  
D. 3 months

Answer: B

2. The most significant feature of early/acute gingivitis?

A. Marginal redness  
B. Edema of gingival margins  
C. Bleeding in response to probing  
D. Loss of stippling

Answer: C

3. Gingivitis is a reversible process, and is diagnosed by radiographic bone loss.

A. The first statement is true; second statement is false.  
B. The first statement is false; second statement is true  
C. Both statements are true  
D. Both statements are false

Answer: A

4. Which inflammatory mediator is responsible for the breakdown of connective tissue?

A. Prostaglandins (PGE)  
B. Matrix metalloproteinases (MMP's)  
C. Cytokines  
D. Tumor necrosis factor

Answer: B
5. Which of the following best describes the epithelial lining of a diseased gingival sulcus?

A. Keratinized epithelium with rete pegs
B. Keratinized epithelium without rete pegs
C. Nonkeratinized epithelium with rete pegs
D. Nonkeratinized epithelium without rete pegs
E. Parakeratinized epithelium with rete pegs

**Answer:** C

6. Which of the following histologic changes in inflamed gingiva results in bleeding?

A. Vasodilation within the lamina propria
B. Ulceration of the crevicular lining
C. Extracellular fluid accumulation
D. Inflammatory cellular infiltrate
E. Alteration of fibroblast

**Answer:** B

7. How would one classify the type of periodontal pockets with a probe reading of a 5mm and CAL (clinical attachment level: 0):

A. Absolute pocket
B. Pseudopocket
C. Periodontal pocket
D. True pocket

**Answer:** B