Periodontal Disease and Pharmacotherapy – What a General Dentist Can Do.

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Epidemiology

  - 53.1% of dentate US adults ages 30-90 had $\geq$ 3mm attachment loss (56.2 million).
  - 30% had $\geq$ 4mm clinical attachment loss (CAL).

Albandar et al, 1999
The Development of Periodontitis
Etiology-Dental Plaque

• Periodontal diseases are infections caused by bacteria that colonize the tooth surface in structures called biofilms.
Biofilms- Microbial Colonies

- Stable nutrient supply.
- Environment conductive to proliferation.
- Environment with limited hazards.
Dental Plaque

Fig. 6. Histological section of human subgingival dental plaque stained with toluidine blue–methylene blue. The tooth surface is to the left and the epithelial lining of the periodontal pocket is to the right. Bacterial plaque attached to the tooth surface is evident towards the upper left of the section, while a second zone of organisms can be observed lining the periodontal pocket wall (courtesy of Max Listgarten, University of Pennsylvania).
Microbial Components of Biofilms

Fig. 1. Diagram of the association among subgingival species (adapted from Socransky et al., 1994). The data were derived from 13,321 subgingival plaque samples taken from the mesial aspect of each tooth in 185 adult subjects. Each sample was individually analyzed for the presence of 0 subgingival species using checkerboard DNA-DNA hybridization. Associations were sought among species using cluster analysis and community ordination techniques. The base of the pyramid is comprised of species thought to colonize the tooth surface and proliferate at an early stage. The orange complex becomes numerically more dominant later and is thought to bridge the early colonizers and the red complex species which become numerically more dominant at late stages in plaque development.

Socransky and Haffajee, 2002
Pathogenesis

Figure 1—1970 model of periodontitis.

Williams, 2002
Pathogenesis

Williams, 2002

Figure 4—Current model of periodontitis.
Removal of Plaque

• Mechanical
  - Manual
  - Sonic and/or ultrasonic
  - Non Surgical
  - Surgical

• Chemical
  - Systemic
  - Local
Mechanical

- Manual vs. Ultrasonic
  - Comparative studies show that they both achieve comparable clinical results, but the manual instrumentation takes longer. (Badersten et al studies, Loos et al, and more)
  - In furcation areas (II & III) ultrasonics remove more calculus than manuals. (Leon & Vogel 1987)
Mechanical

- **Probing Depth**
  - \( \leq 3 \text{mm} \) Good chance of removing all subgingival deposits.
  - 3-5mm the chance of failure becomes greater than that of success. Transition point 3.73mm (Stambaugh 1981)
  - \( \geq 5 \text{mm} \) the chance of failure becomes significantly dominant.

Waehaug 1978, Stambaugh et al 1981
Mechanical

- Long term studies show that mechanical non surgical therapy has comparable results to surgical therapy, providing the patients comply with maintenance care. (Pihlstrom 1983, 1984, Lindhe & Nyman 1984, Ramfjord et al. 1987, Kaldahl et al. 1996)
“Critical Mass”

- A major goal of periodontal therapy is to reduce the quantity (mass) of bacterial plaque to a level (critical) that results in an equilibrium between the residual microbes and the host response, i.e. no clinical disease.

WWP 1989
Control of Sub-gingival Plaque

- Another major goal is the reduction of pathogenic sub-gingival Gram-anerobes (p gingivalis, B Forsythus, T denticola), and allowing an increase in Gram+ microbe population (Actinomyces sp, streptococci sp, and others) which is associated with health.

Listgarten et al. 1978, Slots et al. 1979, Haffajee et al. 1997, Flores-de-Jacoby 2000, and more
Control of Sub-gingival Plaque

• This has been shown to occur after scaling and Root Planing (SRP). (Haffajee et al. 1997, Cugini et al. 2000).

• Anaerobes like P. gingivalis, Aa, appear more resistant to SRP. (Slot & Rosling 1983, and more)
Clinical Parameters

- Reduction of probing depths after SRP occurs as a result of a combination of gain in clinical attachment and recession.
- This reduction reaches its full extent only 3-4 weeks following SRP.

Hughes & Caffese 1978, Proye and Caton 1982
Bleeding on Probing

• Has been shown by Lang et al 1986, to have a weak correlation to future periodontal breakdown.

• Over a 60 month period, 29% of sites with a 75% frequency rate of BOP showed loss of CA, compared to 14% of all sites examined.
Bleeding on Probing

• BOP is a weak predictor for future CAL, but can be used as a criterion for stability, when it is absent.
Systemic Antibiotics

Objectives:

1. To reinforce mechanical periodontal treatment for bacterial elimination.

2. To support the host defense system by killing subgingival pathogens not affected by SRP.
Systemic Antibiotics

Commonly studied:

• Tetracyclines.
• Metronidazole.
• Amoxicillin + Metronidazole.
• Amoxicillin + Clavulanic Acid
Tetracyclines

Commonly studied dosages:

• Tetracycline 250mg qid for 14 days.
• Doxycycline 200mg the first day and 100mg each day thereafter for 14 days.
• Minocycline-HCL 100mg once daily for 14 days.

Slots & Ting 2002
Tetracyclines

- Have shown to be effective in the treatment of aggressive localized and generalized periodontitis.

Ciancio 2002, Slots & Ting 2002
Metronidazole

• Dosages: Metronidazole 200, 250mg or 500mg tid for 7 days.

• Has been shown to be effective in:
  – Severe chronic periodontitis, non Aa.
  – Generalized aggressive periodontitis.

Ciancio 2002, Slots & Ting 2002
Amoxicillin + Clavulinic Acid

Augmentin™

- Dosages: Amoxicillin 250mg or 500mg + Clavulinic acid 125mg, tid for 10 days.
- Has been shown to be effective in Generalized aggressive periodontitis.

Ciancio 2002, Slots & Ting 2002
Amoxicillin + Metronidazole

- Dosages: Amoxicillin 375mg or 500mg + Metronidazole 250mg tid. For 7 days.

- Shown to be effective in:
  - Aggressive generalized and localized periodontitis.
  - Generalized severe chronic periodontitis

Ciancio 2002, Slots & Ting 2002
Topical and Local Antimicrobials

- Rinses
- Irrigation
- Local delivery
Commonly Studied Rinses/Irrigants

- Chlorhexidine
- Povidone-Iodine
- Stannous fluoride
- Hydrogen peroxide
- Listerine™
Chlorhexidine

- Concentration in the US 0.12%.
- Mechanism of action: The cationic chlorhexidine molecule is attracted by the negatively charged bacterial cell surface. That causes an alteration in the bacterial cell membrane and a reversible leakage of bacterial low molecular-weight components at lower doses and severe membrane damage at higher doses.
Chlorhexidine

- Substantivity: binds to intraoral soft and hard tissue, supragingivally.
- Side effects: staining, altered taste sensation.
- Clinical findings: As an irrigant and/or rinse has no benefit on PD or CAL, does reduce plaque and gingivitis.

Drisko 96
Povidone-iodine

• Concentration: Varies, up to 10% or 1% free iodine.

• Mechanism of action: Oxidation of amino (NH), thio(SH) and phenolic hydroxy (OH) groups in amino acids and nucleotides and interaction with unsaturated fatty acids in cell walls and organelle membranes.
Povidone-iodine

- Microbicidal for Gram+, Gram- bacteria, fungi, mycobacteria, viruses, and protozoans.
- Side effects: short-lasting staining of teeth and tongue, and possible thyroid dysfunction.
- Clinical Findings: as a home irrigant was effective in reducing bleeding, and gingivitis. No effect on periodontitis.

Drisko 96
Stannous flouride

- Concentration: $1.64\% \text{ SnF}_2$
- Clinical findings: No added microbiological benefits or clinical benefits to SRP.

Drisko 96, Quirynen 2002.
Hydrogen Peroxide

• Concentration of 3% as a rinse or as a professionally applied sub gingival irrigation, did not differ from saline in its ability to alter bacterial microflora or reduce clinical indices.

Quirnen et al, 2002
Listerine™

• Active ingredients: a combination of plant essential oils including thymol (0.064%), menthol (0.042%), eucalyptol (0.092%), and methyl salicylate (0.060%).

• Among the inactive ingredients is alcohol 21.6%
Listerine™

- Clinical finding: as a rinse twice a day following toothbrushing, it has significantly reduced plaque from 20% to 34%, and gingivitis from 28% to 34%.

Wu & Savitt, 2002
Rinses

• Only Chlorhexidine 0.12% and Listerine have ADA approval for reduction of plaque and signs of gingivitis.
• Have no subgingival penetration ability.
Irrigation

• Self or Professionally applied have the ability to penetrate subgingivally, only when the cannula tip is placed 3mm subgingivally.

Hardy et al, 1982
Full mouth Disinfection

• Introduced by a group from Belgium led by Quirnen.

• Protocol: four quadrants of SRP (an hour for each) completed in a 24 hour period. In addition chlorhexidine (CHX) treatment was performed as follows:
Full Mouth Disinfection

1. Tongue brushing w/CHX 1% gel for 60 seconds.
2. Rinsing twice with CHX 0.2% for 1 minute. Last 10 sec gargoyle for disinfecting the tonsils.
3. Subgingival irrigation of all pockets 3 times within 10 minutes w/CHX 1% gel after both sessions of SRP.
4. Rinse twice daily with CHX for 14 days.
Full Mouth Disinfection

• Clinical findings:
  - Gain of CA was 3.7mm for the test group vs 1.9mm for the control, in PD ≥ 7mm.
  - Reduction of PD was greater in the test group, during the whole 8 months of the study.

Vandekerckhove et al, 1996
Local Delivery

• Actisite™
• Periochip™
• Atridox™
• Arestin™
Actisite™

- Tetracycline fiber
- Fiber: inert, non resorbable, plastic copolymer (ethylene and vinyl-acetate).
- 25% tetracycline hydrochloride powder.
- Remains in place for 7-12 days.
Figs. 17-7, 17-8 and 17-9. Tetracycline fiber is packed into the periodontal pocket (Figs. 17-7 and 17-8), secured with a thin layer of cyanoacrylate adhesive (Fig. 17-9), and left in place for 7-12 days.
Actisite™

• Clinical findings:
  - Goodson et al, 1991, found in a 4 quadrant design that TCN fiber was sig better than SRP alone. PD -0.31mm, CAL + 0.25mm, after 60 days.
  - Newman et al, 1994, found in a split mouth design that TCN/SRP was sig superior to SRP alone. PD -0.73mm, CAL +0.46mm, after 6 months.
Wilson et al, 1997, followed a subset of the Newman study for 5 years and found a slight advantage for the SRP/TCN quads over the SRP quads but that was non significant.

CI:
- Hypersensitivity to Tetracyclines.
- Pregnancy and children (due to teeth staining).
Perio-Chip™

- Chlorhexidine gluconate 2.5mg.
- Chip: Biodegradable matrix of hydrolyzed gelatin (cross-linked with glutaraldehyde).
- Slow constant release over 7-10 days.
- Up to 8 chips could be inserted in a single visit.
**Perio-Chip™**

**INSTRUCTIONS FOR INSERTION**

1. Open individual foil packet.

2. Grease PerioChip® at flat end with suitable forceps.

3. Insert PerioChip®, curved and first, into the periodontal pocket.

4. Press PerioChip® apically to the base of the pocket.

5. After proper insertion, PerioChip® should rest subgingivally at the base of the pocket.

Manufactured by: Perio Products Ltd., Jerusalem, Israel
Manufactured for:

ASTRA

Astra USA, Inc., Watertown, MA 02172
**Perio-Chip™**

- **Clinical findings:**
  - Soskolne et al, 1997, compared SRP/chip to SRP after 6 months, and found that SRP/chip was sig better (the chip was reinserted after 3 months in PD ≥5mm).
  - In PD≤5mm, the differences were 0.46mm for PD and 0.16mm for CAL.
  - In PD≤7mm the differences were 0.72mm for PD and 0.65mm for CAL.
Perio-Chip™

- In the multi-center clinical trial SRP/chip was found superior to SRP alone. The differences were 0.3mm for PD and 0.17mm for CAL. (Jeffcoat et al, 1998).
- Adverse reaction: the most significant is Toothache (including gingival discomfort) in 50.7% of the cases compared to 41.4% in the placebo chip.
Atridox™

- Doxycycline hyclate 10.0%, 42.5mg.
- Vehicle: Atrigel™ is a bioabsorbable, flowable, polymeric formulation composed of 36.7% poly(DL-lactide) (PLA) dissolved in 63.3% N-methyl-2-pyrrolidone (NMP).
- Atridox solidifies when it contacts the crevicular fluid, and allows controlled release of the drug for 7 days.
**NEW ATRIDOX™**
(doxycycline hyclate, 10.0%)
in the ATRIGEL® Delivery System
for controlled release in subgingival application

**Easy to prepare**

**Contents**
- 1 Syringe A with liquid polymer (purple stripe)
- 1 Syringe B with doxycycline hyclate powder
- 1 sterile blunt cannula

**Important**
When removing caps, hold syringes with the nozzles upright to avoid spilling before coupling.

**Step 1.**
Couple Syringe A containing liquid polymer with Syringe B containing doxycycline powder.

**Step 2.**
Inject contents of Syringe A into Syringe B and then push contents back into Syringe A. Mix syringes back and forth 100 times (about 1½ minutes). The contents will be in Syringe A (indicated by purple stripe) when finished.

**Step 3.**
Hold the coupled syringes vertically with Syringe A at bottom. Pull back on Syringe A plunger and allow contents to flow down the barrel for several seconds.

**Step 4.**
Uncouple the two syringes and attach blunt cannula to Syringe A.

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**ATRIDOX™** is a trademark of Block Drug Corporation.
**ATRIGEL®** is a registered trademark of Arix Laboratories, Inc.
NEW ATRIDOX® Easy to use at chairside

Antimicrobial action right where you want it™

Administration

Step 1.  ■ When removing caps, hold syringes with the nozzles upright to avoid spilling before coupling.
■ Couple syringes and follow package directions to prepare Atridox™ for administration.
■ Attach blunt cannula as directed.

Step 2.  ■ Bend cannula to resemble a periodontal probe.

Step 3.  ■ Keep cannula tip near pocket base.
■ Express product into pocket until gel reaches top of gingival margin.

Step 4.  ■ Withdraw cannula tip from pocket.
■ To separate Atridox™ from cannula, turn tip toward tooth, press tip against tooth surface, and pinch string of formulation against tooth to break off. (See Additional Recommendations below)

Step 5.  ■ Pack Atridox™ into pocket.
■ Dip edge of dental instrument in water before packing to help keep Atridox™ from sticking to instrument and speed coagulation of Atridox™.
■ Drip a few drops of water onto the surface of Atridox™ in the pocket to aid in coagulation.
■ If necessary, add more Atridox™ and pack into pocket until pocket is full.
■ Cover the pocket with periodontal dressing.

Additional Recommendations

Application
■ Atridox™ usually can be applied without chairside assistance
■ Insert cannula into base of pocket
■ Express slowly into pocket
■ Separate product from cannula by pressing tip against tooth
■ Use a wet cotton swab to hold product in while extracting cannula
■ Use a wet curette or a cord packing instrument to pack product into pocket

Retention
■ Most-retentive sites
- posterior interproximal sites
- in general, deeper sites, especially if there is an associated furcation
■ Least-retentive sites
- shallow pockets
- single-rooted teeth
■ Recommendations for least-retentive sites
- Overflow Atridox™ and pack into embrasure
- Cover with periodontal dressing

Home Care
■ Instruct patient not to brush or floss treated area for 7 days
■ Direct patients to avoid chewing around treated area if possible
■ Recommend swabbing or rinsing with an oral rinse, if desired
Atridox™

• Clinical findings:
  - In two four arm, 9 month (Readministration after 4 months) clinical trials (oral hygiene, vehicle, SRP, Atridox) SRP and Atridox were found superior to OH or vehicle.
  - Atridox demonstrated PD reduction of 1.1mm in the first and 1.3mm in the second study, SRP demonstrated 0.9mm and 1.3mm PD reductions.

Gerrett et al, 1999
Atridox™

• Clinical attachment gains for the Atridox arm were 0.8mm in both studies, and for the SRP arm they were 0.7mm 0.9mm.

• The results of both trials established equivalency between SRP and Atridox.

Gerrett et al, 1999
Atridox™

• Wennström et al, (2001) Compared Atridox with debridement (45 min full mouth) to SRP (4 hours full mouth), and found that the Atridox group had 0.6mm additional reduction in PD.
Atridox™

• Adverse reactions: no different from placebo, the vehicle may have to be removed after 2 weeks.

• CI:
  - hypersensitivity to tetracyclines.
  - pregnancy and children (due to teeth staining).
Arestin™

- Minocycline hydrochloride microspheres 1mg.
- Vehicle: A bioresorbable polymer, Poly (glycolide-co-dl-lactide) or PGLA.
- Dry powder, single dose cartridges.
- The microspheres hydrolyze and release the minocycline at therapeutic levels even after 14 days.
Figure 1.
Minocycline microspheres: unit-dose cartridge and handle.
• Study design (Williams et al, 2001):
  - Three arm study 1) control (SRP alone); 2) SRP+vehicle; 3) SRP+Arestin.
  - All PD≥5mm received Arestin or vehicle.
  - 9 months, Arestin readministered at 3 and 6 months.
Arestin™

- **Clinical findings:**
  - PD reduction after 9 months were 1.08mm for the SRP group, 1.00mm for the SRP+vehicle, and 1.32mm for SRP+Arestin, which was statistically significant.
  - Percentage of PD having reductions of 1mm and 2mm was significantly higher for the SRP+Arestin group.

  Williams et al, 2001
## Local Delivery Cost/Benefit

<table>
<thead>
<tr>
<th>Product</th>
<th>Cost</th>
<th>Treatment/unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetracycline fiber</td>
<td>$24.75/fiber</td>
<td>Two teeth</td>
</tr>
<tr>
<td>Chlorhexidine chip</td>
<td>$16.00/chip</td>
<td>One site</td>
</tr>
<tr>
<td>Doxycycline gel</td>
<td>$52.00/syringe</td>
<td>12 sites</td>
</tr>
<tr>
<td>Minocycline microspheres</td>
<td>$12.45/cartridge</td>
<td>One site</td>
</tr>
</tbody>
</table>
Host Modulation

- NSAIDs
- Periostat™
NSAI Ds

- The only study that showed significant clinical results by Williams et al, 1989.
- Flurbiprofen 50mg bid was taken for 2 years, SRP was done every 6 months.
- Rate of radiographic bone loss was significantly less for F users at 12 and 18 months compared to placebo.
Periostat™

- Doxycycline hyclate 20mg bid.
- Inhibits collagenase or Matrix Metalloproteinase (MMP) activity specifically MMP-8, MMP-9, MMP-13.
- Subantimicrobial dose.
Periostat™

• Clinical trial:
  - SRP/placebo vs SRP/Periostat.
  - Medication taken for 9 months.
  - PD, CAL taken at 3, 6, 9, 12 months.

Caton 1999
• Results:
  - PD and CAL improved after 3 months and remained stable up to 12 months.
  - For baseline PD 4-6mm, after 9 months:
    • SRP/Periostat sig better; PD by 0.26mm, CAL by 0.17mm.
  - For baseline PD $\geq$7mm:
    • SRP/periostat sig better; PD by 0.48mm, CAL by 0.38mm.

Caton 1999
Novak et al (2002), found that in patients with severe generalized periodontitis, the use of Periostat for 6 months combined with SRP, could further reduce $7\text{mm} \leq PD$ by 1.6mm, compared to placebo. This was measured 3 months after cessation of Periostat.
Genetic Predisposition

• Genetic traits for periodontal disease were found in twin studies, by Michalowicz et al (1991, 1994).
Genetic Predisposition

- Kornman et al in 1997, found that a specific polymorphism in the IL-1 gene complex is associated with severe periodontal disease.
- Population was Caucasian of north European heritage, Ages 40-60, non smokers.
- The PST (Periodontal Susceptibility Test) was developed.
PST

• Findings (Kornman et al, 1997):
  - Genotype prevalence is about 30%.
  - 78% of Genotype + had severe periodontitis.
  - Odds ratio of severe vs mild: 18.9

• PST+ multiplies the risk of tooth loss when you are a smoker. (McGuire and Nunn, 1999)
PST

• The genotype has no significance in African-Americans (Walker et al., 2000), and in Chinese (Armitage et al., 2000).
Periodontal Diseases

- Classification changed in 1999.
- Adult periodontitis $\rightarrow$ Chronic periodontitis.
- Early onset, juvenile, rapidly progressive periodontitis $\rightarrow$ Aggressive periodontitis.
Periodontitis
(Chronic or Aggressive)

- Mild or slight = 1-2mm Clinical Attachment Loss (CAL).
- Moderate = 3-4mm CAL.
- Severe = ≥ 5mm CAL.
- Localized = ≤ 30% of sites involved.
- Generalized = ≥ 30% of sites involved.

IWCPDC 1999
Treatment Outline

• Systemic phase
• Hygienic phase
• Corrective phase
• Maintenance phase

Based on Ramfjord 53
Systemic Phase

- Evaluate systemic conditions and their impact on periodontal status.
- Consult the physician.
- Blood dyscrasias, uncontrolled hypertension, cardiac disease and diabetes-treated.
- Medications: Calcium channel blockers, dilantin, cyclosporine (alternative)
- Smoking cessation.
- Need for antibiotic prophylaxis.

Pihlstrom 2001
Hygienic Phase

• Eliminate local causes: bacterial plaque, calculus, faulty restorations.
• Prevent discomfort: extraction of hopeless teeth, endodontics, SRP, antibiotic therapy.
• Education on the etiology of periodontal disease.
• Evaluate after 4 weeks.

Pihlstrom 2001
Corrective Phase

- A surgical phase.

Pihlstrom 2001
Maintenance Phase

- Key for any successful treatment outcome.
- Should be done every 3 months.
- Recall includes: medical Hx, soft and periodontal tissues examined. Signs of traumatic occlusion, Changes in PD or recession noted, oral hygiene reinforced, scaling even subgingivally with total plaque and calculus removal, topical fluoride if necessary.
- If needed, further tx should be scheduled.

Pihlstrom 2001
Periodontal Conditions

- Chronic Periodontitis, American Academy of Periodontology (AAP) case types II, III, and IV
- Age of onset: any
- Causes: Bacterial plaque, smoking, plaque retentive factors (calculus, faulty restorations)
- Signs and symptoms: slow progression, pockets, CAL, bone loss, generalized or localized.
Non Surgical Treatment Suggestions

- Plaque control.
- smoking cessation.
- SRP.
- correction of local plaque retentive factors.
- Antimicrobial chemotherapy (localized or systemic).
- Periostat™ (three month intervals).
Periodontal Conditions

• **Aggressive Periodontitis**

  • **Age of onset:** any
  
  • **Causes:** Bacterial plaque, smoking, superinfection with specific periodontal bacteria, possible impaired host response.

  • **Signs and symptoms:** Severe and rapid periodontal destruction, period of remission, generalized or localized.
Non Surgical Treatment Suggestions

- Specific antimicrobial therapy based on microbial analysis (MicroDenteX™).
- Smoking cessation.
- SRP with full mouth disinfection.
Periodontal Conditions

- **Refractory Periodontitis, AAP case type V.**
- **Age of onset:** any
- **Causes:** Bacterial plaque, smoking, superinfection with specific periodontal bacteria, possible impaired host response.
- **Signs and symptoms:** progression of disease despite good conventional therapy, oral hygiene, and maintenance.
Non Surgical Treatment Suggestions

- Specific antimicrobial therapy based on microbial analysis.
- Smoking cessation.
- SRP.
- Local delivery to resistant sites.
- Periostat™.
Periodontal Conditions

- **Periodontitis as a manifestation of systemic diseases.**
- **Age of onset:** any
- **Causes:** Associated with disorders of the blood or blood forming organs such as neutropenia, leukemia or genetic disorders.
- **Signs and symptoms:** Generalized and localized forms of severe destruction of bone and CT tooth support.
Non Surgical Treatment Suggestions

- Treatment of systemic disease.
- Atraumatic plaque control.
- Antimicrobial rinse.
Periodontal Conditions

• **Classic Juvenile Periodontitis**
  • **Age of onset**: Near or during puberty.
  • **Causes**: Probably major autosomal gene defect and infection with Aa.
  • **Signs and symptoms**: Localized typically loss of support in the first molars and incisors; Generalized throughout the dentition.
Non Surgical Treatment Suggestions

- SRP.
- Specific antimicrobial therapy based on microbial analysis.
Periodontal Conditions

- **Perio-endo lesion**
- **Age of onset:** any
- **Causes:** endodontic or periodontic origin.
- **Signs and symptoms:** periodontal pocket extending to the area of endodontic lesion.
Non Surgical Treatment Suggestions

- If primary endodontic origin: perform endodontic treatment alone.
- If primary periodontal origin: perform endodontic and periodontal therapy, or extraction might be necessary.
Periodontal Conditions

• **Periodontal abscess**
• **Age of onset:** any
• **Causes:** subgingival bacteria.
• **Signs and symptoms:** painful, acute swelling of periodontal tissues associated with deep periodontal pocket.
Non Surgical Treatment Suggestions

- Debridement and SRP.
- Broad spectrum antibiotic therapy.
Periodontal Conditions

- Acute necrotizing periodontitis.
- **Age of onset:** any
- **Causes:** immunocompromised, may be associated with HIV.
- **Signs and symptoms:** pain, rapid loss of bone support associated with gingival and bony necrosis.
Non Surgical Treatment Suggestions

- Debridement and SRP.
- Atraumatic plaque control.
- Analgesic medication.
- Antimicrobial rinse.
End Note

- Non surgical therapy vs surgical therapy
THANK YOU!