

The Examiner

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- Periodontics and Dental Implants
- Comprehensive Treatment Planning with Team Approach to Dental and Implant Therapy
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Connective Tissue Grafts & Restorative Dentistry

Gingival recession is the loss of the gingival tissues causing exposure of the cementum. The recession is mainly found on the facial surfaces and can be associated with the loss of the interdental crestal bone. The width of the attached gingiva present on receded sites ranges from complete absence of the attached gingiva to normal width of more than 2 mm.

Clinical Implication:

1. Gingival recession is a progressive condition in most cases.
2. Patients with gingival recession often complain of sensitivity to cold and brushing.
3. The absence of keratinized gingiva will make the alveolar mucosa more susceptible to inflammation and further recession.
4. The root surfaces are susceptible to tooth brush abrasion even with the use of soft brushes.
5. Decay on exposed root surfaces is common.
6. The margins of dental restorations can become exposed leading to esthetic failure.

Connective Tissue Grafts:

The use of the Connective Tissue Graft is the most common and predictable approach for achieving *Root Coverage* and increasing the width and thickness of the attached gingiva. The Connective Tissue Graft is also used to

cover damaged root surfaces from tooth brush abrasion and root decay. Covering exposed margins of dental restorations can also be achieved by using the same technique.

Case Study 1:

This patient recently moved to the area and was referred to my office for the correction of gingival recession. Her chief complaint is her unhappiness with her smile. The restorative treatment plan includes crowns from teeth # 4 through 12.

The initial examination revealed advanced gingival recession ranging from 2-7 mm on teeth # 4- 12. Composite restorations were bonded to the exposed root surfaces (Figure A-1 and A-5). Connective tissue grafts on teeth # 4 -12 were completed to cover the exposed root surfaces, increase the width of the attached and keratinized gingiva, and shorten the length of the clinical crowns bringing them closer to the appropriate width to length ratio. The composite restorations were removed after flap reflection and the roots were planed to achieve flat and smooth surfaces. The final restorations were cemented after 15 weeks of healing (Figures A-4 and A-6).

Case Study 2:

This patient was referred to my office for the treatment of gingival recession on teeth # 8 and 9 (Figure B-1). The initial examination revealed two crowns were present with gingival recession exposing the crown margins. Recurrent decay at the margins of the crown on tooth # 8 was also noted. Connective tis-

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Figure A-1: Pre-operative photograph. Gingival recession noted on the maxillary teeth and composite restorations noted on the roots.



Figure A-2: Post-operative photo. The composite restorations were removed after flap reflection. Connective tissue grafts were placed on the maxillary teeth.



Figure A-3: Provisional crowns after 12 weeks of healing.



Figure A-4: Final restorations consisting of 9 porcelain crowns (Restorative treatment: Dr. Dennis Radcliff).



Figure A-5: Pre-operative photo of smile.



Figure A-6: Post-operative photo of smile.

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sue grafts were placed on teeth # 8 and 9. The decay on the facial of tooth # 8 was removed at the time of flap reflection and complete coverage of the crown margins was achieved (Figure B-2).

Case Study 3:

This patient was referred to my office for the evaluation of

gingival recession on the facial of teeth # 28 and 29 (Figure C-1). The examination revealed recurrent decay on the facial of tooth # 28 in addition to exposed crown margins on both teeth. Using a connective tissue graft procedure, the crown margins were covered and the width of the keratinized gingiva was increased. The decay on tooth # 28 was removed at the time of flap reflection (Figure C-2).

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Figure B-1: Pre-operative photo. Note the decay on tooth # 8 and the gingival recession on teeth # 8 and 9.



Figure B-2: Post-operative photo. Connective tissue grafts were placed on teeth # 8 and 9. The exposed crown margins were completely covered.



Figure C-1: Pre-operative photo. Cervical decay is present on teeth # 28 and 29.



Figure C-2: Post-operative photo. The cervical decay was removed and connective tissue grafts were placed on both teeth.

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Case Study 4:

This patient was referred to my office for the evaluation of gingival recession on his anterior maxillary teeth. The examination revealed old porcelain veneers on teeth # 6- 11 that were placed 10 years earlier. New veneers were planned. Connective tissue grafts were placed on teeth # 6-11 to increase the width of the attached gingiva, cover the exposed root surfaces and improve the biologic width to length ratio of the teeth.



Figure D 1 & 2: (Above): Pre-operative photos. Gingival recession and exposed margins of porcelain veneers are noted.



Figure D-3: (left): Post-operative photo. Complete coverage of root surfaces was achieved. The patient is ready for new veneers.

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The American Academy of Periodontology Publishes a Statement on Local Delivery of Sustained or Controlled Release Antimicrobials as Adjunctive Therapy in the Treatment of Periodontitis

The American Academy of Periodontology published a statement in May 2006 regarding the use of sustained or controlled release local delivery antimicrobial agents (LDAs) as an adjunct to scaling and root planning (SRP) in the treatment of periodontitis. The statement was developed under the direction of a Task Force to study local delivery of antibacterial agents and approved by the Board of Trustees of the American Academy of Periodontology. These agents are applied locally in the periodontal pockets after the completion of SRP. The purpose of these products is to reduce or eliminate subgingival bacterial flora and clinical signs of periodontitis. The use of LDAs however, does not correct anatomical deformities caused by the disease process such as intrabony defects or abnormal root surfaces. The presence of subgingival calculus is not affected by the placement of these agents. Use of LDAs can place a high concentration of the antimicrobial agent in the periodontal pocket, and the delivery vehicle facilitates prolonged drug delivery.

The Task Force conducted a review of the literature and reported that marginal additional probing depth (PD) reductions in the range of 0.25 mm to 0.5 mm were achieved when LDAs were used as an adjunct to SRP in pockets ± 5 mm.

The Task Force also concluded that those differences were only statistically significant, and the additional improvement in PD was marginally better to the reported mean 1.45 mm PD reduction achieved by SRP alone. The Task Force indicated that the effects on clinical attachment level gains were smaller and statistical significance less common. It also noted that in many studies, LDA applications were repeated several times and compared to a single episode of SRP.

The task force indicated that the antimicrobial agents for local delivery currently sold in the United States include: Arestin® (1 mg minocycline microspheres), Atridox® (10% doxycycline hyclate in a bioabsorbable polymer), and PerioChip® (2.5 mg chlorhexidine in gelatin matrix). The conclusion of the Task Force is at this time the existing data appear insufficient to determine that adjunctive sustained or controlled release LDA treatment can either reduce the need for periodontal surgery or improve long-term tooth retention, or is cost effective.

Their statement also noted that there are inadequate studies to support the use of LDAs in special sites (e.g., periodontal abscesses, furcations, peri-implantitis) and special populations (e.g., smokers, patients with aggressive periodontitis, or who are medically compromised). Additional studies are also needed to further define the therapeutic value of LDAs in different phases of treatment (active versus maintenance). They also noted that long-term benefits are unknown because most studies are limited to 9 months. The Task Force indicated that thorough SRP remains highly effective in the treatment of chronic periodontitis and is the standard approach to non-surgical periodontal therapy. Clinicians may consider the use of LDAs in chronic periodontitis patients as an adjunct to SRP:

- When localized recurrent and/or residual PD ± 5 mm with inflammation is still present following conventional therapies.

Therapies other than LDAs should be considered when:

- Multiple sites with PD ± 5 mm exist in the same quadrant.
- The use of LDAs has failed to control periodontitis (e.g., reduction of PD).
- Anatomical defects are present (e.g., intrabony defects).

The final recommendation of the Task Force is to make the clinician's decision to use LDA based upon a careful consideration of scientific evidence, clinical findings, the patient's dental and medical history, patient preferences, and advantages and disadvantages of alternative therapies.