

The Examiner

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- Periodontics and Dental Implants
- Comprehensive Treatment Planning with Team Approach to Dental and Implant Therapy

Multidisciplinary Dentistry Periodontics, Implants & Restorative Dentistry

The dental patients are increasingly aware of the ability of modern dentistry to improve their quality of life and appearance. The dentists today should position themselves to fulfill patients' desires for improved smiles by taking advantage of the many resources they have at their disposal. Understanding the patient's needs and expectations is the first step in managing and executing a successful treatment. The diagnostic phase should involve gathering information using digital photography, radiography, diagnostic models and wax up. In multidisciplinary dentistry, this information has to be communicated with the specialists prior to formulating a final treatment plan. In the following case, the restorative dentist and the periodontist work in complete harmony to give the patient the desired esthetic outcome.



Figure A-1: Initial Photograph at presentation

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Case Study:

Patient History: This patient presented to the office of her restorative dentist with a desire to improve her smile. She expressed her dislike of her existing veneers.

Clinical Findings: The clinical examination revealed the patient has bulky veneers on teeth # 7, 8, 9, 10 and retained primary tooth # H. Excessive gingival display is noted with short clinical crowns. The width to length ratio of the anterior teeth indicated the teeth were square. The midline has shifted to the right. (Figure A-1 and A-2).

Treatment Plan: After the periodontal consultation and the diagnostic wax-up, a complete multidisciplinary treatment plan was devel-

oped and included the following:

1. Cosmetic crown lengthening on teeth # 5–12.
2. Extraction of tooth # H.
3. Immediate implant placement at the site of # 11.
4. Healing time of eight weeks.
5. Veneers on teeth # 5–12
6. Implant crown on # 11

Treatment: The wax up was duplicated and a vacuum form was made (Figure A-3). The plastic matrix was trimmed at the gingival margins to become the surgical guide for the periodontist at the time of the crown lengthening. A surgical guide for the placement of the

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Figure A-2: Pre-op photograph. Excessive gingival display is noted with short clinical crowns. Deviation of the midline is also noted.

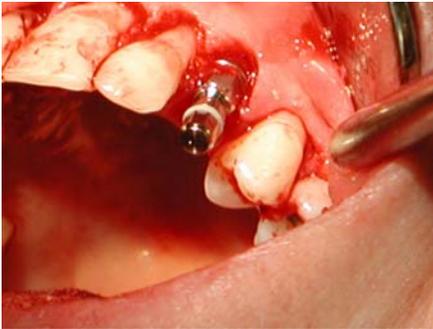


Figure A-4: ITI Straumann implant placed at the site of # 11 at the time of the cosmetic crown lengthening.



Figure A-6: Final results. Restorations performed by Dr. John Hamel. Glamour shot courtesy of Dr. John Hamel.

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implant was also made. The crown lengthening procedure was performed under local anesthesia and tooth # H was extracted. A Straumann® implant was placed at the site of # 11 (Figures A-4). An immediate removable acrylic partial for the replacement of tooth # 11 was inserted at the completion of the surgery (Figure A-5). The healing was uneventful. The restorative treatment was completed after eight weeks (Figures A-6 and A-7).



Figure A-3: Surgical guide for the cosmetic crown lengthening procedure. The guide is based on a diagnostic wax up. Note the correction of the midline to the left.



Figure A-5: The flap sutured and an immediate removable temporary partial inserted. Note the shift in the midline at the gingival margins of # 8 and 9.



Figure A-7: Final restorations including 7 porcelain veneers on teeth # 5, 6, 7, 8, 9, 10 and 12 and an implant crown on # 11.



Figure B-1 : A smile picture with the removable partial denture replacing teeth # 2-5 and 12-14.



Figure B-2: Two implants with locators abutments on the sites of # 5 and 12.



Figure B-3: The removable partial denture on the maxilla.

Dental Implants & Removable Prosthesis

The use of removable partial dentures is still a viable approach for the treatment of partially edentulous patients. One of the challenges of removable partials is the placement of the clasps that can be unaesthetic on the anterior teeth. They also place significant torques on the natural dentition that can be detrimental to periodontally compromised teeth. The use of dental implants with Locators[®] offers a simple and economical solution to this dilemma.

Case Study: This patient presented to my office for the treatment of generalized severe chronic periodontitis. Several teeth were extracted during the course of the treatment leaving her with teeth # 6-11. A removable partial denture was planned and two Straumann[®] implants were placed at the sites of # 5 and 12. Locators[®] abutments were used to provide retention for the removable partial denture eliminating the need for clasps and giving the patient the esthetic results she desired.



Figure B-4: The removable partial denture with locators.

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Lasers in Periodontics: A Review of the Literature

The American Academy of Periodontology periodically commissions reviews of topics that are important to the dental profession. This review published in the *Journal of Periodontology* and written by Dr. Charles M. Cobb* examines the use of Lasers in periodontics. There is still a controversy amongst clinicians on the use of lasers for the treatment of chronic periodontitis. This review analyzed the peer-reviewed research literature to determine the state of the science concerning the application of lasers to common oral soft tissue problems, root surface detoxification, and the treatment of chronic periodontitis.

Methods: A comprehensive computer-based search combined several databases into one search including Medline. This search also used key words. In addition, hand searches were done for several journals not cataloged in the databases, and the reference lists from published articles were checked. All articles were considered individually to eliminate non-peer-reviewed articles, those dealing with commercial laser technology, and those considered by the author to be purely opinion articles, leaving 278 possible articles.

Results: There is a considerable conflict in results for both laboratory studies and clinical trials, even when using the same laser wavelength. A meaningful comparison between various clinical studies or between laser and conventional therapy is difficult at best and likely impossible at the present time. Reasons for this dilemma are several, such as different laser wavelengths; wide variations in laser parameters; insufficient reporting of parameters that, in turn, does not allow calculation of energy density; differences in experimental design, lack of proper controls, and differences in severity of disease and treatment protocols; and measurement of different clinical endpoints. However, the studies showed that the healing of bone regardless of instrumentations following ostectomy, osteoplasty or implant site preparation is complex involving local and systemic responses. Exposure to heating at levels ± 47 C is reported which induce cellular damage leading to osseous resorption, and temperature levels of ± 60 C resulting in tissue necrosis. On the other hand, the effect of lasers at reducing the subgingival bacterial levels is only proved in vitro. Lasers of different types have a charring effect on the root surface especially the CO₂ lasers. Other types require significant amounts of coolants that may not be attained subgingivally.

Conclusions: Based on this review of the literature, there is a great need to develop an evidence-based approach to the use of lasers for the treatment of chronic periodontitis. Simply put, there is insufficient evidence to suggest that any specific wavelength of laser is superior to the traditional modalities of therapy. Current evidence does suggest that use of the Nd:YAG or Er:YAG wavelengths for treatment of chronic Periodontitis may be equivalent to scaling and root planing (SRP) with respect to reduction in probing depth and subgingival bacterial populations. However, if gain in clinical attachment level is considered the gold standard for non-surgical periodontal therapy, then the evidence supporting laser-mediated periodontal treatment over traditional therapy is minimal at best. Lastly, there is limited evidence suggesting that lasers used in an adjunctive capacity to SRP may provide some additional benefit.

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