LASER THERAPY IN FULL MOUTH RECONSTRUCTION

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DISCLOSURE

I, Dr. Mario Guiang Jr. have no commercial relationships from any dental laser company and have not received funding/honoraria/industry project.

EDUCATIONAL OBJECTIVES

- Utilize a laser in procedures like gingivectomy/gingivoplasty, frenectomy, and soft tissue crown lengthening without violating the biologic with in full-mouth reconstruction.
- Utilize a laser as an adjunct therapy to lessen discomfort to the patient and increase ease of manipulation for the clinician, thereby providing a well controlled procedure.
- Emphasize the importance of laser therapy in treatment planning to preserve the esthetic value.
ELECTROSURGERY

• Cauterization is burning of a body part to remove or close off a part of it in a process called cautery which destroys some tissue.

• Because of the fast cutting potential of electrosurgery and the low tactile sense while cutting, overcutting of the tissue may be experienced.

• High heat production while cutting is contraindicated around implants. This can cause loss of osteointegration around implants.

LASER DIODE

• Light Amplification by Stimulated Emission of Radiation (LASER)

• There are many uses for the soft tissue diode laser. When treating patients with periodontal disease, the laser probe can be introduced into the pocket and provide a bactericidal and detoxifying effect.

• The soft tissue diode laser is ideal as a simultaneous cutting and coagulating instrument.

• In all cases you will be providing treatment with less trauma, increased healing, and faster patient recovery.

WHY LASER VS. CONVENTIONAL METHODS, INCLUDING ELECTROSURGERY

April 2007 Journal of Clinical Ortho article listed 13 benefits:

• Ability to seal blood vessels
• Ability to seal lymphatic vessels
• Ability to seal nerve fibers
• Less mechanical trauma
• Minimal scarring
• Precise surgical target
• Predictable post-treatment results (less shrinkage)
• Reduced need for suturing
• Dry operating field
• Minimal post-operative swelling
• Statistically-proven 90% clinical reduction in post-op pain
• Less damage to target tissue
• Reduced bacterial counts = effective in patients with bacteremia risks

PERIODONTAL PROBE

Figure 2: Left to right: Colgate PFP 12 Probe, PFP 15 GB (WHO) Screening Probe, PFP72 Color Coded Probe, PGON Color Coded Nabors Probe, 11 UNC Color Coded Probe (Hu Friedy, Mtg (Co Inc, Chicago).

BIOLGIC WIDTH

Average human biologic width: Connective tissue attachment 1 mm in height; junctional epithelial attachment 1 mm in height; sulcus depth of approximately 1 mm. The combined connective tissue attachment and junctional epithelial attachment, or biologic width, equals 2 mm.
Possible variations exist in biologic width. Connective tissue attachments and junctional epithelial attachments may be variable. In this example, the connective tissue attachment is 2 mm in height, the junctional epithelial attachment 1 mm in height, and the sulcus depth 1 mm, for a combined total tissue height above bone of 4 mm. However, the biologic width is 3 mm.

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**Syntasis of Patient History**
- Age: 43 y/o
- Sex: female
- Occupation: Physician

**Vital Signs**
- Blood pressure: 130/80 mmHg
- Pulse rate: 64 bpm
- Respiration rate: 22 cpm

1. Under Care of Physician? NO
2. Hospitalized within the last 5 years: NO
3. Has or had the following systemic conditions: NONE
4. Current medications: NONE
5. Smokes or uses tobacco products: NO
6. Is pregnant: NO

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**Dental History**
- Last dental visit was a year ago for scaling and polishing.
- Periodontal probing within normal limits.
- Consultation for TMD/TMJ treatment.
- Consultation for posterior open bite and splint construction.

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**Medical History**

- no known allergies
- no past medical history of any systemic diseases

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**Chief Complaint**

- “My jaw hurts every time I yawn and I have an open bite; I don't like my two front teeth.”
RADIOGRAPHIC EXAMINATION
PREOPERATIVE X-RAY

PREOPERATIVE INTRAORAL PICTURES

Frenectomy, crown lengthening and temporization

PREOPERATIVE INTRAORAL PICTURES
7 DAYS RECALL PICTURES AFTER SOFT TISSUE LASER

POSTOPERATIVE INTRAORAL PICTURES

POSTOPERATIVE/FINAL RADIOGRAPH

REFERENCES:
- Carranza’s Clinical Periodontology 11th Edition
- *AMD LASERS Operating Instructions Manual
- *Balkan Journal of Stomatology
- *McDavid VG, Cobb CM, Rapley JW, Glaros AG,
- Spencer P. Laser irradiation of bone: III. Long-term healing following treatment
- Dawson PE Functional Occlusion from TMJ to Smile Design 207
- Myotronics J5 Myomonitor TENS Unit Manual

KEEP LASERING…

THANK YOU!