Cases Report

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Case Report 1

“Preprosthetic Esthetic Crown Lengthening”
1. Personal Data:
   - 35 years old female
   - Clerk at a dressing store

2. Reason for dental consultation:
   - “Improve the aesthetic appearance of their anterior crowns”
3. Personal history:

- No drug allergies or relevant medical history.
- No smoking
- Current medication: None
4. Dental examination:

- Good periodontal health

Panoramic Rx findings:

- Several old treatments to change it.
Treatment planning
Treatment planning

Change old crowns by provisional.

Determination for Biological Width.

Esthetic Crown Lengthening.

Surgical procedure by Er,Cr: YSGG laser.

Gingival and osseous contour.

Temporary crowns adapt to the new situation.

New crowns at least 3 months later.
Biological width

2 mm to bone

2 mm to gingival margin 1.1

Ostectomy 3 mm.
Gingivectomy and osseous resection using Er,Cr:YSGG laser.
Gingivectomy: 2 watts / 20hz / 10% W / 30% A
600 µm fiber tip
Measurement of peak bone
Surgical procedure (III)

- Ostectomy: 4 watts / 20hz / 40% W / 10% A
- Osseous recontouring with a curette
- Biological width conserved
Surgical procedure
Surgical procedure (IV)

- Review margins of anterior teeth
- Setting provisionals to the new situation
Clinical Course
Clinical Course (I)

- Waiting for 3 months
- Review the tissue margins
- Start a new fixed prosthesis
Clinical Course (II)

Test biscuit to check the final aspect

Crowns cimentation
Final result

Aesthetic harmony restored

Maintenance of tissues at the time
Discussion
Er, Cr: YSGG laser

Ability to perform coronary surgical lengthening of a minimally invasive way to avoid having to raise a mucoperiosteal flap approach (flapless technique)

Lightweight thermal effects on soft tissue. Absence of bleeding.

Er,Cr: YSGG laser

No charring of bone tissue occurs when performing the ostectomy.

Histologically, the appearance of bone is the same as that of the surgical drill.

Er,Cr: YSGG laser

CO$_2$ and diode lasers can be used only for soft tissue preparation. However, only the Er family of lasers can be used for osseous preparation.

Er, Cr:YSGG lasers represents an excellent alternative to the classical technique because it causes less postoperative morbidity, the tissue healing is faster and the wound showed less gingival retraction.

Case Report 2

“Gingival Epulis”
Anamnesis (I)

1. Personal Data:
   - 45 years old female
   - Lawyer

2. Reason for dental consultation:
   - “Remove the lesion on the gingiva that had relapsed after 2 years of having eliminated”
3. Personal history:

- No drug allergies or relevant medical history.
- No smoking
- Current medication: None
4. Dental examination:

- Severe malocclusion and multiple gingival recession
- Panoramic Rx: normal
Treatment planning
Gingival Epulis removal.
Surgical procedure by diode 810 nm laser.
Surgical Procedure
Surgical Procedure (I)

Power settings:

- 1-1.5W in continuous mode
- Activated fiber 400µm (lateral position)
Surgical Procedure (II)

Debridement of granulation tissue to avoid complete excision and future recession.

Completed treatment with SRP
Debridement of granulation tissue to avoid complete excision and future recession.

Completed treatment with SRP.
Debridement of granulation tissue to avoid complete excision and future recession.

Completed treatment with SRP.
Clinical Course
Clinical Course (I)

Immediate postoperative period with persistent lesion.

At one-week postoperative the lesion has completely disappeared without any recession sign.
Clinical Course (II)

3 months postoperative period there is a tissue stability
Final result

Gingival epulis eliminated without gingival recession secondary
Discussion
The treatment of choice of gingival epulis is the elimination to cause difficulty in periodontal maintaining.

The complete removal of the lesion is the appropriate treatment, but may cause side effects such as the recession and hypersensitivity.


Debridement periodontal pocket is the key to a reestablishment of the periodontal attachment.

Diode laser has high capacity to treat periodontal disease and with the Nd:YAG are lasers most commonly used for such treatments.


The use of laser diode appear to be more effective in terms of granulation tissue removal and decontamination of the periodontal pocket.

The removal of benign tumors of the oral mucosa with lasers, especially diode, Nd:YAG and CO₂ seems to preclude no recurrence of the lesion.


Case Report 3

“Gingival Depigmentation”
Anamnesis
1. Personal Data:
   - 25 years old-female
   - Administrative.

2. Reason for dental consultation:
   - “Removal of gingival hyperpigmentation after orthodontic and bleaching treatment”
3. Personal history:

- No drug allergies or relevant medical history.
- Smoker of 10-15 cigarettes a day.
- Current medication: None
4. Dental examination:

- Good periodontal healthy

Panoramic Rx findings:

- Aggressive periodontitis in maintenance.
Treatment planning
Hyperpigmentation removal.

Surgical procedure by Er,Cr: YSGG laser.
Surgical Procedure
Surgical Procedure (I)

Power settings:

1.75 W, 20 Hz, 10% W- 30% A
Surgical Procedure (II)

Topical anesthesia or infiltrative anesthesia if necessary
Surgical Procedure (III)

Tip selected: 600 µm
Surgical Procedure (IV)

Remove of melanin stains with sweeping motions in contact mode
Remove tissue debris with sterile gauze and review the deeper areas with traces of melanin.
Surgical procedure
Clinical Course
Clinical Course (I)

The immediate postoperative period shows an absence of bleeding.
Clinical Course (II)

One-week postoperative view showing complete healing and depigmentation
Clinical Course (III)

One-year postoperative after the bleaching treatment no repigmentation had occurred
Final result

Esthetic gingival restored and complete elimination of melanin staining
Discussion
### Discussion (I)

Different techniques employed for gingival depigmentation

<table>
<thead>
<tr>
<th>Masking procedures</th>
<th>Complication</th>
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</thead>
<tbody>
<tr>
<td>1. Free gingival grafts</td>
<td>1. Two-site procedure, pain, bleeding and colour different</td>
</tr>
<tr>
<td>2. Subepithelial connective tissue grafts</td>
<td>2. Two-site procedure, pain and bleeding</td>
</tr>
<tr>
<td>3. Acellular dermal matrix allografts</td>
<td>3. Pain, bleeding, and color difference</td>
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</tbody>
</table>


## Discussion (II)

Different techniques employed for gingival depigmentation

<table>
<thead>
<tr>
<th>Remove procedures</th>
<th>Complication</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Abrasion technique: using a large, round diamond bur</td>
<td>1. Difficult to control depth of deepithelialization, bleeding, and pain</td>
</tr>
<tr>
<td>2. Surgical methods of depigmentation</td>
<td>2A. Excessive bleeding, pain, and prolonged healing</td>
</tr>
<tr>
<td>A. Scalpel Surgical Technique</td>
<td>2B. Needs high skills</td>
</tr>
<tr>
<td>B. Cryosurgery</td>
<td></td>
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<tr>
<td>C. Electrosurgery</td>
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Different techniques employed for gingival depigmentation

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<th>Remove procedures</th>
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<tr>
<td>3. Chemical methods of depigmentation</td>
<td>3. Harmful to oral soft tissues</td>
</tr>
<tr>
<td>4. Lasers</td>
<td>4.1. Delayed wound healing</td>
</tr>
<tr>
<td>1. Carbone dioxide (CO₂) lasers</td>
<td>4.2. Deep thermal damage</td>
</tr>
<tr>
<td>2. Diode lasers</td>
<td>4.3. Deep thermal damage and deep penetration</td>
</tr>
<tr>
<td>3. Nd: YAG lasers</td>
<td></td>
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<tr>
<td>4. Er: YAG lasers</td>
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<td>5. Er, Cr: YSGG lasers</td>
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Er, Cr: YSGG lasers provides:

- A relatively bloodless surgical and post-surgical course
- The ability to coagulate, vaporize, or cut tissues
- Sterilization of the wound site
- Minimal swelling and scarring
