Treatment of Inflammatory Fibrous Hyperplasia (Epulis fissuratum) with Er:YAG Caused by Dental Prosthesis

Ferraz, Pedro, MD

Introduction:

The fissured epulis is a pathology resulting from a hyperplastic reaction of the fibrous connective tissue, which develops in association with the edges of an ill-fitting total or partial prosthesis. It presents itself as hyperplastic tissue in the alveolar vestibule, with the same coloration as the mucosa. It is usually a firm, fibrous mass, although some lesions are erythematous and ulcerated. Its size can vary from 1 cm to larger lesions (which involve a larger part of the vestibular length. The LightWalker laser by Fotona is a useful tool for the total removal of the lesion. Thanks to the painless post-operative and accelerated healing due to the ablation of the Er:YAG laser, the treatment allows the patient to immediately place the new prosthesis adapted to the new vestibule.

Laser	Fotona EBD		
	Step 1	**Step 2**	**Step 3**
Wavelength	Er:YAG, 2940 nm	Er:YAG, 2940 nm	Nd: YAG, 1064 nm
Handpiece	H14 (cylindrical tip)	H14 (cylindrical tip)	GENOVA
Fluence	170 J/cm^2	130 J/cm^2	30 J (60 sec)
Mode	LP	VLP	MSP
Frequency	20 Hz	20 Hz	10 Hz
Sessions	9 sessions per week for 99 weeks		

Pedro Ferraz, M.D., is a graduate of the Faculty of Medicine at the Nova Medical School of Lisbon, Portugal. Since 2018, he has worked in the Stomatology department of Centro Hospitalar Universitário de Coimbra. In 2019, he established his own dental office practice focused primarily on laser-assisted oral surgery and implantology.

CLINICAL CASE:

In this case, a 55-year-old female patient came to the outpatient clinic due to the inability to use the upper acrylic prosthesis (see figures 1 and 3) because of pain. On objective examination, she presented a hyperplastic fibrotic lesion on the vestibular ridge of the second quadrant, with approximately 2.5 cm of larger diameter compatible with Epulis fissuratum (see figure 2).

After confirming the lesion was benign, the decision was made to remove the lesion using Er:YAG laser. Conventional techniques would include the use of a scalpel, which would have required stitching. This would have led to more post-operative discomfort as well as the need for a return visit to remove the stitches. The procedure was performed under local anesthesia. LP mode (step 1) was used to ablate the lesion to just above the adjacent tissue. Using the treatment parameters described, no bleeding occurred during the procedure.

Longer, VLP-mode pulses (step 2) were used to continue ablation down to the level of the adjacent tissue. The thermal effect of the VLP mode pulses coagulates the smaller blood vessels in the surrounding area, eliminating bleeding. The hemostasis provided by the laser reduces hematoma formation, thereby contributing to a more comfortable recovery (see figure 5). Finally (step 3), we used the option of low-level-laser energy via the Genova Nd:YAG handpiece to promote the acceleration of collagen formation as well as postoperative healing.

Shortly after the end of the surgery, the acrylic prosthesis was rebased (see figure 4), and the patient went home with her own prosthesis placed (see figure 6).

Figure 1: Prosthesis placed over the lesion

Figure 2: Image of lesion

Figure 3: Prosthesis before being rebased

Figure 4: Prosthesis after being rebased

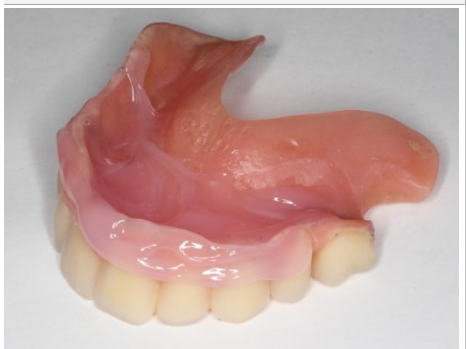

Figure 5: Image of the vestibule immediately after the excision of the lesion

Figure 6: Replacing the prosthesis released immediately after excision of the lesion with Er:YAG laser