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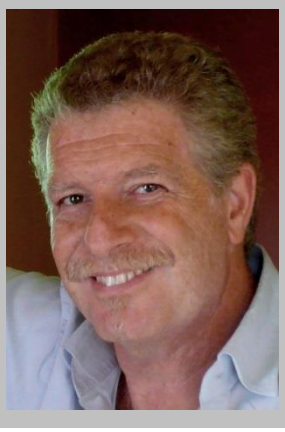

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TwinLight® Periodontal Treatment

Giovanni Olivi

Parameters:

	1st step: De-epithelization and decontamination	2nd step: Calculus removal and decontamination	3rd step: Clot formation
Laser source:	Nd:YAG, 1064 nm	Er:YAG, 2940 nm	Nd:YAG, 1064 nm
Pulse duration:	MSP	SSP	VLP
Power/ Energy:	2.0-2.5 W	30 mJ first, then 20 mJ	3.5-4.0 W
Frequency:	20 Hz	50 Hz first, then 40 Hz	20 Hz
Handpiece:	R21-C3 hand piece	H14 with Varian tip 600 micron	R21-C3 hand piece
Spray:	/	3/2 water/air	/

Treatment procedure:

Effective periodontal disease treatment is quite a challenge for dentists. Different treatment protocols with the help of different tools and medicaments are available, but all result in limited success with the removal of calcified concretions from the root surface, inflamed tissue removal from the periodontium and the bacterial load reduction inside the gingival pockets.

The TwinLight® procedure is a minimally invasive method for treating periodontal disease utilizing the Nd:YAG and Er:YAG laser energy of the LightWalker laser system (Fotona, Slovenia). Combining both wavelengths in a single laser allows the clinician to quickly switch between both wavelengths. Utilizing both wavelengths in a periodontal disease treatment protocol makes best use of the unique laser-tissue interaction characteristics of each wavelength.

The Nd:YAG R21-C3 and H14-C handpiece with Varian fiber tip were used for a TwinLight periodontal treatment. In the first step, the Nd:YAG fiber tip was constantly moved from side to side of the periodontal pocket for deepithelization and decontamination. In the second step, the Er:YAG laser with the Varian fiber tip was used for calculus removal. The fiber tip was moved up and down on the root surface. Then the setting was changed for effective debris removal from the bottom of the pockets, deeply in the furcations of the molars and premolars. In the third step, the Nd:YAG laser wavelength was used again, but in the VLP mode to produce a thermal effect for the formation of a clot. The laser was activated only while being withdrawn from the pocket. The fibrin clot temporarily prevented bacterial re-colonisation.

The TwinLight protocol ensured ultimate performance and patient comfort during the periodontal treatment, and also helped in promoting periodontal healing. Short-term healing without adverse effects on the dental and periodontal tissues was achieved. The decontamination step, repeated every three months to control the recolonization of the gingival pockets, promoted long-term healing as well.

Before treatment

The Nd:YAG laser

The Er:YAG laser

Two weeks after treatment