

TwinLight Procedures in Oral Surgery

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SUMMARY

Laser energy use in various domains of oral and maxillofacial surgery is now a current topic of research among specialists. Various laser wavelengths have been introduced for use in soft and hard tissue since the late eighties of the 20th century. The most widely used laser wavelengths in dentistry are 1064 nm (Nd:YAG) and 2940 nm (Er:YAG). The Nd:YAG laser is mainly used for soft-tissues therapy, whereas the Er:YAG laser is used in therapy of both soft and hard tissues of the oral cavity (bone and teeth). Fotona's LightWalker AT and DT- S dental laser systems include these two most effective laser wavelengths: Er:YAG (2940 nm) and Nd:YAG (1064 nm). The combination of the two best wavelengths in one laser system enables practitioners to perform dual-wavelength treatments known as TwinLight procedures. Several modalities of the Nd:YAG laser ($\lambda = 1064$ nm) and Er:YAG laser ($\lambda = 2940$ nm) in surgery of the oral soft and hard tissues were analyzed in the present study on selected groups of patients. Clinical cases are presented using TwinLight procedures in oral surgery. The cases have clinically documented pre- and post-operative signs and postoperative patient comfort developments relating to the TwinLight procedures. Applications of the GENOVA handpiece for biomodulation in clinical and experimental situations are also presented.

Lasers in Periodontology

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SUMMARY

Different thermal levels created by Free Running Pulsed (FRP) lasers in combination with One-stage, Full Mouth Disinfection, for debridement of diseased periodontal hard and soft tissues, may explain significant differences in periodontal treatment outcomes. In an attempt to enhance the treatment outcomes of anti-infective periodontal therapy, the One-stage, Full-Mouth Disinfection therapy has been recognized as the most effective way of treating chronic periodontal disease. Besides the One-stage, Full-Mouth Disinfection procedures to eliminate cross-contamination, the thermal confinement created by the use of FRP lasers may play an important role in the outcome and resolution of periodontal issues, or be a good precondition prior to surgery. Different temperature levels each have specific interactions on the microbiological, structural and molecular levels. This phenomenon can lead to cost-effective procedures with more predictable results.

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