

Laser Therapy in Modern Dentistry: Simple and Precise

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SUMMARY

Objective: To evaluate the clinical effect of Er:YAG laser and Nd:YAG laser and explore appropriate applications in oral soft-tissue surgery.

A total of 37 patients undergoing oral soft-tissue surgery were enrolled in this study. Among them: labial (lingual) frenectomy in 9 cases, excision of mucocele in 6 cases, ablation of epulis in 5 cases, excision of papilloma in 7 cases, titanium implant exposure surgery in 4 cases and treatment of hemangioma and vascular malformation in 6 cases. The patients were treated with Er:YAG laser or Nd:YAG laser under local anesthesia or without anesthesia. The degree of intraoperative pain, bleeding, postoperative swelling and wound healing were observed, and the therapeutic effect was evaluated. All the patients underwent a postoperative discomfort evaluation with the NRS (Numerical Rating Scale) method to explore the pain they felt during intervention.

Er:YAG laser and Nd:YAG laser obtained good pain control during operations. The mean value of intraoperative NRS and postoperative NRS of the 37 patients did not exceed 3. There was no bleeding except one epulis patient with a history of hypertension. One patient with mucocele was slightly swollen one day after the treatment and was irradiated with Nd:YAG laser in LLLT mode to relieve the swelling. The other patients healed well one week after treatment without swelling or inflammation.

Both Er:YAG and Nd:YAG laser may be effective in the treatment of benign lesions of the oral soft tissue. Er:YAG laser and Nd:YAG laser have a number of advantages for oral soft-tissue surgery such as minimal or no anesthesia needed, less timing, more precise and visible cuts, good surgical visualization, hemostasis, less postoperative swelling and pain, and no suturing. Laser application also makes it possible to reduce fear in pediatric and geriatric patients. It is an efficient, safe and comfortable technique. Er:YAG laser has high cutting efficiency and produces smaller thermal damage, while Nd:YAG laser has a good hemostatic effect. The combined application of the

two lasers in soft tissue surgery can improve efficiency and achieve a good therapeutic results. In addition, the laser's LLLT mode, with the effect of biological stimulation, has anti-inflammatory ability and can reduce pain, swelling, and promote tissue healing..

Laser Treatment Of Potentially Malignant Oral Disorders

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SUMMARY

Oral leukoplakia (OL) is the most classic, potentially malignant oral disorder (OPMD) and is defined as “a white plaque of questionable risk having excluded (other) known diseases or disorders that carry no increased risk for cancer“. Considering the potentially malignant transformation of these lesions, their treatment has been advised by several authors. Several surgical modalities for the treatment of OL are reported, including conventional cold scalpel excision, cryosurgery, laser excision or laser vaporization, and photodynamic therapy. The use of laser in the treatment of OL has been proposed not only because of the several advantages inherent to lasers, but also because of the possibility for the treatment of extensive lesions, or lesions localized in unfavorable oral sub-sites. Several lasers have been used to treat OL including CO₂ laser, Nd:YAG laser, KTP laser and Er:YAG laser.

In this lecture we will discuss the treatment of OPMD with several laser wavelengths. Although there are few reports on the use of Er:YAG (2940 nm) laser in the treatment of OL, this may be a very promising option that is highly effective when compared with the use of the traditional scalpel.

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