

Laser applications for oral and maxillofacial surgery

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There is a growing acceptance of laser applications for their effectiveness in the management of dental conditions, with predictable and reproducible results. The experience to use lasers to cut, vaporize and coagulate with favorable biological responses is consistent from established energy parameters and techniques. Wound healing is within normal expectations, with reduced scarring and contractures. Also, there is no evidence of the risk of malignant transformation of treated tissues. Dysfunction is minimal as a result of reduced tissue manipulation and instrumentation. Laser therapy is suited for intra-oral mucosa lesions, including leukoplakia. Pre-prosthetic laser surgery provides better outcomes in broad-based mucosa lesions. Perio-endodontic applications are enhanced with histochemical and immunological changes. Immuno-modulation is promising for oral lichen planus. Overall cure rate for pre-malignant conditions is good and laser ablation for difficult oral cancers provide better aesthetic results. Photo-coagulation and photo-thermolysis by selective laser absorption benefit vascular and pigmented conditions. Minimally invasive facial procedures are on the rise with laser cosmetic therapy. Molecular and cellular changes with the current understanding of laser stimulation help improve the management of facial pain eg. trigeminal neuralgia, TMJ disorders, post-operation. There is a growing confidence of its scientific basis and higher energy levels for pain relief and cure prospects. The future is bright with improved instrumentation, lowered costs, new and combination systems.