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Esthetic and surgical treatment using diode laser

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Laser systems and their application in dentistry and especially oral surgery are rapidly improving today. The diode laser was introduced in dentistry and oral surgery in the mid-90s . The diode laser devices have specifications such as relatively small size, portable and lower cost that attract the dental practitioners and oral surgeons for use in various surgical indications in comparison to other laser equipment. Diode laser with wavelengths ranging from 810 to 980 nm in a continuous or pulsed mode was used as a possible modality for soft tissue surgery in the oral cavity. Based on the photothermal effect of the diode laser, the lesions of the oral mucosa are removed with an excision technique, or by ablation/vaporization procedures. Applications of lasers in dentistry are soft tissue surgery and ablation of lesions and The excision of exophytic lesions is one of this utilization. Provided correct selection and application of diode lasers in soft tissue oral surgery, for example frenectomy, epulisfissuratum, fibroma, facial pigmentation and vascular lesions. The advantages of laser application are relatively bloodless surgery, minimal swelling, scarring and coagulation, no need for suturing, reduction in surgical time and less or no post surgical pain. Also, the laser instantly disinfects the surgical wound as well as allowing a noncontact type of operative procedure and therefore no mechanical trauma to the tissue. The disadvantages reported in researches on diode laser application were somehow similar to other lasers, like, delayed repair which is prominent in larger lesions and charring tissue in smaller lesions compared to the application of conventional scalpel surgical procedures and laser plume in excision of exophytic lesions produced by human papilloma virus and may be creates similar lesions in upper respiratory tract of laser operator. The demand for aesthetic dentistry has had a major impact not only on treatment planning but also on the choice of materials, techniques, and equipment. It is this demand that has married the use of lasers with aesthetic dentistry. Today Diode lasers are used in many applications in Esthetic Dentistry like Gingival Depigmentation, Crown lengthening and Gingival Contouring. Gingival Hyper Pigmentation: Melanin, a brown pigment, is the most common cause of endogenous pigmentation of gingiva and is the most predominant pigmentation of mucosa. Gingival Hyperpigmentation is seen as a genetic trait in some populations and is more appropriately termed physiologic or racial gingival pigmentation. Gingival Depigmentation is a periodontal plastic surgical procedure whereby the gingival hyperpigmentation is removed or reduced by various techniques. The first and foremost indication for depigmentation is patient demand for improved esthetics. Laser Depigmentation has become widely used recently and is even preferred over scalpel technique by many clinicians. The advantages of lasers in periodontal surgery include less bleeding and reduced postoperative pain. Accelerated wound healing with laser. Gingival Contouring: Excessive gingival display is one of the major concerns for a large number of patients. Although several techniques are currently in use, the scalpel technique is still the most widely employed. Lasers offer less postoperative pain. It is a minimally invasive treatment option for the elimination of unesthetic excessive gingival tissues. The external bevel gingivectomy combined offers a practical technique to dramatically improving Gingival Shape and Contour, Lengthening Crowns, Idealizing Tooth Proportionality, Resolving Crown/Height Asymmetries. Soft tissue Diode lasers allow dentists to perform current clinical procedures in amore efficient and less traumatic and invasive manner,such technological innovations present opportunities to provide flexible treatment options to patients while enable clinicians to expand their skill level in cosmetic dentistry particularly where soft tissue techniques are concerned. Furthermore, these procedures can be performed with minimal postoperative challenges.

Biography

Mohannad El Akabawi has completed his Fellowship in Laser Dentistry from Genoa University in Italy and the Restorative and Esthetic Fellowship from Genoa University in Italy. He has completed the German Board in Implantology. Presently he is working as a Laser and Implant Trainer in Misr University for Science and Technology in collaboration with Genoa University in Italy and studying Master's degree in Restorative and Esthetic Dentistry in Cairo University since 2012.

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