

The Outcome of 810 nm Surgical Diode Laser in the Management of Oral Soft Tissue Lesions

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Abstract

Background	Surgical diode lasers have been used in oral surgical procedures with beneficial effects as compared to the conventional techniques.
Objective	To evaluate the efficacy and safety of 810 nm surgical diode laser in the field of oral and maxillofacial surgery.
Methods	Forty patients who had different oral lesions were attending consultation clinic of the Maxillofacial Surgery Department in the Al-Kadhimiya Teaching Hospital. The patients have been treated by 810 nm diode laser. The power of the diode laser was 2-5 Watts in continuous mode. Excisional biopsies were sent for histopathological examination. Intraoperative and postoperative clinical examinations were done.
Results	The clinical observations revealed no bleeding intraoperatively and postoperatively, no infection and minimal swelling was seen postoperatively.
Conclusion	The benefits of 810 nm diode laser application in oral and maxillofacial surgery have been justified based on its efficacy and safety. There is a good acceptance for this new modality of treatment by the patients.
Keywords	Surgical diode laser, soft tissue lesion, oral surgery

Introduction

The use of laser in dentistry has increased over the past few years. The first laser was introduced into the fields of medicine and dentistry during the 1960s^(1,2).

Unlike other light sources, the laser emits a coherent, collimated and monochromatic radiation. These characteristics render laser radiation with unique applications in the field of the medicine and surgery especially in the field of the oral and maxillofacial surgery. Different lasers have many advantages in oral surgery like haemostatic property, postoperative comfort to the patient and incision quality⁽³⁾.

In laser-tissue interaction, the factors that determine the initial tissue effect include laser

wavelength, laser power, laser mode (continuous, pulsed, and chopped beam), tissue optical properties, and tissue thermal properties⁽⁴⁾. The degree of absorption of the laser radiation inside the tissue components determines the type of interaction mechanism obtained by laser on soft tissue⁽⁵⁾. In the oral cavity, the pyogenic granuloma clinically presents as a sessile or pedunculated vascular mass with ulcerated surface, purplish-red in color, painless and soft lesion.

Fibrous epulis are most common soft tissue swellings of mouth. It presents near at the anterior part of the mouth and arises from interdental papilla on the gingiva between two teeth and it can also form on the buccal mucosa.