The 980 nm diode laser: A good modality for the treatment of prominent frenulum

Authors: Merita Bardhoshi, DDS; Esat Bardhoshi, DDS, MSc; and Ina Thereska, DDS, MSc

Labial frenectomy is a common surgical procedure in the field of oral surgery. Labial frenectomy is a procedure generally used for orthodontic and prostodontic reasons. A diode laser is portable, compact, efficient and has good bactericidal and coagulation properties.

A diode laser has a wavelength between 810 and 980 nm. They can be used in the continuous as well as pulsed mode with a contact or non-contact handpiece. The aim of this study was to present the efficacy of using a diode laser 940 nm for treatment of prominent labial and lingual frenulum and to demonstrate the healing characteristics after laser surgery.

Materials and methods

Ten patients with prominent labial and lingual frenulum are included in this report (Figs. 1, 2). All patients were treated with a 940 nm diode laser at the Dental University School in Tirana, Albania.

The technique of frenectomy was used under local anesthesia (lidocaine 2 percent, 1 cc). Informed consent was obtained from all patients.

Laser settings were: fiber optic 300 micrometer, cw, 4 W. The laser fiber was applied vertically and laterally to the frenulum, initially causing disruption of the mucosa continuity. This easily allowed performing a deeper cut of the frenulum in a horizontal dimension.

The design of the frenectomy was rhomboid and the whole procedures were performed in about four to five minutes. No sutures were required in any cases. In addition, ice was applied to avoid the increase of tissue temperature and control necrosis in the tissue.

All clinical participants were examined one week, three weeks and three months after surgery. Postoperative complications, such as pain, bleeding, swelling, scar formation and wound healing characteristics were evaluated.

Fig. 1: Prominent frenulum of the tongue. (Photo/Provided by Dr. Merita Bardhoshi)

Fig. 2: Prominent labial frenulum.
_Results_

No bleeding was observed either during treatment or during the healing period (Figs. 3–5). One week after surgery a superficial layer of bibrine was observed in all clinical cases. No postoperative pain and swelling were recorded. Three weeks after surgery oral mucosa was completely healthy.

No scar tissue formation was observed in any case. In long-term follow-up, the oral mucosa in all clinical cases looked normal in color and consistence (Figs. 6, 7).

_Discussion_

Frenectomy is a common procedure in the field of oral surgery. The advantages of laser surgery include higher precision, less pain, bleeding, swelling and scarring. The procedure is quick, safe, easy to perform in an outpatient setting and no sutures are required.

All patients were satisfied with the treatment and the results obtained.

The diode laser has beneficial aspects, such as its small and compact size, and its portability allows it to move easily from operatory to operatory.

_Conclusion_

The technique of frenectomy is easy, fast and safe to be performed with a 940 nm diode laser. It could be done in outpatient clinic with local anesthesia, with good degree of acceptance by the patients and perfect results._

Merita Bardhoshi, DDS, is an oral surgeon at the Dental University School in Tirane, Albania.

You may contact her at meritabardhoshi@yahoo.com

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