

CASE REPORT

Diode Laser: A Perfect Option for Ankyloglossia Management

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ABSTRACT

Ankyloglossia or tongue tie is a developmental anomaly of tongue characterized by an abnormally short, thick lingual frenum resulting in limitation of tongue movement. Ankyloglossia can adversely affect feeding, speech articulation, and oral hygiene maintenance. This case reports of a 22-year-old male with tongue tie who complained of difficulty in speech following which he underwent lingual frenectomy procedure with laser, without any complications. Diode lasers are compact and portable in design with efficient and reliable benefits for use in soft-tissue oral surgical procedure.

Keywords: Ankyloglossia, Lasers, Tongue tie, Frenectomy.

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INTRODUCTION

The lingual frenum is a mucosal fold that attaches the bottom of the body of the tongue to the floor of the mouth and to the mandibular bone. When the frenum is thick and very tight and/or its place of insertion limits the mobility of the tongue, it can result in ankyloglossia. Ankyloglossia is an embryological anatomical malformation that usually affects males more than females in a 3:1 ratio. Ankyloglossia has also been associated with problems with breast feeding among neonates, malocclusion, gingival recession

and speech difficulties. The ankyloglossia can be classified into four classes based on Kotlow's assessment as follows: Class I, mild ankyloglossia 12 to 16 mm; class II, moderate ankyloglossia 8 to 11 mm; class III, severe ankyloglossia 3 to 7 mm; and class IV, complete ankyloglossia <3 mm.¹

CASE REPORT

A 22-year-old male reported in the Department of Periodontics, Rural Dental College, Pravara Institute of Medical Sciences, Loni, Maharashtra, India, with a complaint of difficulty in speech since birth. On intraoral examination, it was found that the individual had partial ankyloglossia (Fig. 1) and was able to protrude the tongue up to the lower lip.

Lingual frenectomy by soft-tissue laser was planned for the patient after informed consent was taken from him. A semiconductor diode surgical laser unit (Biolase) with wavelength 800 to 940 nm was selected for the procedure. No local anesthesia was given to the patient; only topical lignocaine spray was used. After stripping the fiber-optic wire tip, the tip was initiated by firing it into a piece of cork at 1.4 W in a continuous mode. An initiated tip of 300 µm was used with an average power of 4.00 W in a pulsed mode (Fig. 2). The diode laser was applied in a contact mode with focused beam for excision of the tissue (Fig. 3).

The tip of the laser was moved from the apex of the frenum to the base in a brushing stroke cutting the frenum. The ablated tissue was continuously mopped using wet gauze piece. This takes care of the charred tissue and prevents excessive thermal damage to the underlying soft tissue.

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Fig. 1: Preoperative view



Fig. 2: Laser unit



Fig. 3: Diode laser in active application



Fig. 4: Postoperative follow-up

Protrusive tongue movement was checked. No suturing was done, and the patient was prescribed with analgesics and mouth rinse. Patient was reviewed after 1 week and healing was satisfactory. Patient was again examined after 1 and 3 months, he reported increase in tongue mobility following surgery and healing was satisfactory (Fig. 4). Patient's acceptance of the procedure was good and provided a satisfactory feedback in terms of his speech clearance.

DISCUSSION

Diode lasers are compact and portable in design, with efficient and reliable benefits for use in soft-tissue oral surgical procedure. Laser light is monochromatic, coherent, and collimated; therefore, it delivers a precise burst of

energy to the targeted area. Histologically, laser wounds have been found to contain significantly lower number of myofibroblasts.² This results in less wound contraction and scarring, and ultimately improved healing. Laser-assisted frenectomy provides better postoperative perception of pain and function than with the scalpel technique.³ Though the choice of procedure (surgical or laser) will depend upon the operator's choice, however there are many advantages of laser technique over the conventional surgical procedures. The various advantages include dry and bloodless surgery, instant sterilization of surgical site, reduced bacteremia, reduced trauma, minimal postoperative swelling, less healing time and minimal postoperative pain.⁴ However, selection of technique should be based upon the operator's choice and clinical experience.

REFERENCES

1. Kotlow L. Ankyloglossia (tongue tie): A diagnostic and treatment quandary. *Quintessence Int* 1999;30:259-262.
2. Zeinoun T, Nammour S, Dourov N, Aftimos G, Luomanen M. Myofibroblasts in healing laser excision wounds. *Lasers Surg Med* 2001;28(1):74-79.
3. Haytac M, Ozcelik O. Evaluation of patient perceptions after frenectomy operations: Comparison of carbon dioxide laser and scalpel techniques. *J Periodontol* 2006;77(11):1815-1819.
4. Saini R, Pazinato FB, Radnai M. Diode laser: an ideal option for treatment of gingival hyperpigmentation. *Int J Experiment Dent Sci* 2013;2(2):139-140.