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Case Report

TREATMENT OF ANKYLOGLOSSIA USING DIODE LASER – A CASE REPORT

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Abstract :
Lingual frenulum is the vertical fold of mucous membrane under the tongue, attaching it to the floor of the mouth. This congenital anomaly could cause diastema, difficulties in the movement of the tongue, feeding difficulties, speech disorders and various mechanical and social issues. Conventional frenectomy techniques would include the use of a scalpel, which often requires at least one suture and leads to some degree of post-operative discomfort as well as the need for a return visit to remove the suture. The main advantages of using thediode laser are that there is no bleeding; less of operative pain, no need of anesthesia, and suturing is not required, minimizing post-operative discomfort for the patient, and reducing procedure time for the practitioner.

Keywords : Ankyloglossia, tongue dysfunction, diode laser.

Introduction:

Lingual frenulum is the vertical fold of mucous membrane under the tongue, attaching it to the floor of the mouth; called also frenulum linguae. Ankyloglossiais a congenital anomaly in which there is an abnormally short lingual frenulum, which restricts mobility of the tongue tip.Ankyloglossia may lead to a host of problems like infant feeding difficulties, speech disorders, and various mechanical and social issues related to the inability of the tongue to protrude. Lingual frenectomy is advised for the management of Ankyloglossia. Based on the length of the free tongue, ankyloglossia can be classified as follows: [6]

Clinically acceptable: normal greater than 16 mm

Class I: mild ankyloglossia 12 to 16 mm

Class II: moderate ankyloglossia 8 to 11 mm

Class III: severe ankyloglossia 3 to 7 mm

Class IV: complete ankyloglossia: less than 3 mm

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Many methods have been used such as scalpel surgery, diathermy, and lasers have been long used. The advantages of laser include a bloodless operating field, no post operative infection or pain and no suturing required. The case report discusses one case of successful management of Ankyloglossia or tongue tie with diode laser.

A 30 year old male reported to the department of Periodontics, AB Shetty memorial institute of dental sciences. Patient had a complaint of difficulty in stretching his tongue completely outside the mouth and also had difficulty in touching the palate with his tongue since birth. Medical and dental history was taken. There was found to be no relevant medical and dental history. The ENT and physical examination was found to be normal. Verbal and written consent were taken from the patient. On intraoral examination it was found that the patient had ankyloglossia (tongue tie) and was classified to be class 1 ankyloglossia (cotlow classification 1999).There was no malocclussion and recession present lingual to the mandibular incisors. The patient was undertaken for a frenotomy procedure under local anaesthesia with 2 % lignocaine hydrochloride with 1: 80,000 adrenaline by

using laser method. Diode laser emitting 810 nm was used in pulsed contact mode at 1.1 joule / sec energy. Safety measures were taken for Dentist, assistant and patient by wearing the recommended protective goggles. The lingual frenal attachment was released in the anterior floor of the mouth. The entire procedure was painless and encountered no bleeding; pack was placed at the end of the procedure. Patient was recalled for follow up after ten days. Patient reported increase in tongue mobility following surgery and healing was satisfactory. Patient did not experience any pain during the healing period. The extension of the tongue outside the mouth had increased from preoperative. The speech articulation had improved after surgery; the patient was able to touch the palate with the tip of the tongue which improved the phonetics.

Pre operative images

Post operative images

Discussion :

Diode lasers can be used in continuous wave orgated-pulse modes in contact or out of contact with the tissue. The benefits of using laser in oral surgical procedures are significant, for the clinician as well as the patient. Laser light is monochromatic, coherent and collimated; therefore it delivers a precise burst of energy to the targeted area. There is more efficient incision of the tissues by laser when compared to scalpel, laser generates complete vaporization and coagulates the blood vessels. Laser has a hemostatic effect that eliminates excessive bleeding, which creates clean surgical field, allowing increased precision and accuracy and greatly improving visualization of surgical site. Laser wound causes less bleeding due to sealing of capillaries by protein denaturation and stimulation of clotting factor VII. The thermal effect of laser seals the capillaries and lymphaticwhich reduces the postoperative bleeding and edema [1].Number of myofibroblasts found after laser treatment are found to be less [2]. This helps in less wound contraction and scarring. Because of improved healing and hemostasis, laser wounds can often be left without sutures. Laser assisted frenectomy is believed to provide better postoperative perception of pain and function than with the scalpel technique[3].

Laser assisted lingual frenectomy is easy, showing excellent precision and less discomfort compared to conventional technique. Patient did not have any complaints related to pain and bleeding Patient was comfortable and there was less bleeding. The pulsed mode was used which provided time for the tissue to cool and prevented collateral tissue damage [4].High level of sterilization is maintained in diode

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treatment which reduces the need for post-operative care and antibiotics.

Conclusion :

Ankyloglossia or tongue-tie is a congenital condition and the treatment being simple and safe. In the present case report, lingual frenectomy was done by diode laser technique which provided the practical benefit to the patient by reducing bleeding, increasing asepsis, decreasing operative and postoperative pain, swelling and no requirement of suture.

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