ejpmr, 2024, 11(3), 335-338

SJIF Impact Factor 7.065

EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.ejpmr.com

Case Study

ISSN 2394-3211

EJPMR

TONGUE TIE RELIEVED BY DIODE LASER – A CASE REPORT

***[1]Dr. Afroz Anjum Shafiq Ahmed BDS, MDS (Perio), [2]Dr. Maya Teresa Jacob BDS, MDS (Pedo), [3]Dr. Souheil Hussaini, BDS, MS, PhD**

[1]Student at International Oral Implantology Research Institute (Dubai).
[1]Student at SOLA(international society of laser affiliation, Vienna, Austria.
[2]Diplomat in Ortho (the city College of London)
[2]Student at SOLA(International Society of Laser Affilation, Vienna, Austria
[2]Ceo and Owner of Dr Maya Dental Center Motar City.
[3]President, Chairman of Scientific Committee -
Implant Dentistry – Study Consortium (ID-SC),
An affiliate Society of University of Toronto, Canada
Adjunct Instructor, Rutgers School of Dental Medicine, NJ, USA
Private Practice: Oral Implantology Medical Center
204 Al Wahda Building, Port Saeed Rd, Deira, P O Box 39695 Dubai, UAE.

***Corresponding Author: Dr. Afroz Anjum Shafiq Ahmed BDS, MDS (Perio)**
Student at International Oral Implantology Research Institute (Dubai).
Student at SOLA(international society of laser affiliation, Vienna, Austria.

Article Received on 22/01/2024 **Article Revised on 12/02/2024** **Article Accepted on 03/03/2024**

ABSTRACT

Background: Tongue tie also known as Anklyoglossia in medical terms this is the condition in which the movements of the tongue are restricted due to restrictive tissue under the tongue on the of the floor of the mouth, the treatment option available for this tissue to be removed is by, scalpel, LASER, electrocautery. **Material and Method:** In this case report we have reported an 11 years old boy having difficulty in pronouncing words, difficulty eating and swallowing food, which is effecting his personality and self confidence. **Result:** LASER is considered and effective methof to treat tongue tie. **Conclusion:** A developmental anomaly can distrupt normal functioning of tongue, which should e treated as early as possible to live a comfortable life.

KEYWORDS: Anklyoglossia, Frenectomy, Diode laser, Lingual frenectomy.

INTRODUCTION

Tongue tie {Ankyloglossia} is an ailment of altered and restricted tongue movement owing to the existence of thick fibrous tissue amid the undersurface of the tongue and the floor of mouth.[1] The term "ankyloglossia" has been derived from two foremost Greek words "agkilos" (curved) and "glossa" (tongue). It came into limelight in 1960, by Wallace who defined tongue-tie as "an ailment where the tip of the tongue cannot be protruded beyond the lower incisor teeth because of presence of a short frenulum linguae[2] "ankyloglossia" is an inherited disorder found in approx. 4%of new borns.[3]

Male: Female ratio is 3:1

Often containing scar tissue."[2] Ankyloglossia is an infrequent inherited disorder with a frequenc Table I.

Classification of ankyloglossia according to Kotlow (based on the "free tongue" length).

Normal, Clinically acceptable range of "free tongue" >16mm	
Class 1: mild ankyloglossia	12-16 mm
Class II: moderate ankyloglossia	8-11 mm
Class III: severe ankyloglossia	3-7 mm
Class IV: complete ankyloglossia	<3 mm

As the available literature gives a vision of the imperative role of tongue in numerous functions thus, the restricted mobility of the tongue muscle possibly may show negative affect as mouth breathing, snoring, dental clenching, and myofascial tension due to low tongue position or may lead to chronic stress on surrounding muscles maxillofacial region leading to speech impairment, midline diastema, oral motor dysfunction, and mandibular lingual gingival recession.[5] There are several treatment modalities including frenectomy or

frenotomy have been stated. In the current era, laser like DIODE [Nd:YAG], erbium:YAG) surgery have been preferred over conventional surgical approach as it is non- invasive, absence of intraoperative bleeding, reduction of postoperative edema, unnecessary stitches, and faster mucosal healing.[6]

Case Report

A 11 old boy patient reported to dr .maya dental clinic with the chief complaint of difficulty while speaking since childhood, mastication and constrained tongue movements with no relevant medical or drug history. On intraoral examination, it was found that the individual had ankyloglossia (tongue-tie) and was classified as Class III by utilizing Kotlow's assessment [Figure 1]. Tongue movement was minimal, and the patient had difficulty in pronouncing, words having "r" and "l."

Surgical Procedure his father didn't want any sutures or surgical blade to be used : Laser assisted frenectomy was chosen as the treatment of choice, because of the supervening advantages of rapid healing, less patient discomfort, zero apprehension of bleeding. No suturing.

After application of topical anaesthetic spray, 0.5ml of plain lignocaine was injected in the frenum. Diode laser (980 nm) was used for the frenectomy procedure, at a wattage of 0.7 W, in continuous wave form, and timer was set for 6 seconds on-off mode, along with controlled water from the syringe to allow for heat dissipation.

Protrusive tongue movement was checked to access the complete elimination of frenum. Then, the intervening frenum was removed, minimizing scar was seen tissue formation and healing was observed after 1 week itself.
Postoperative Care: Topical application of gingigel was prescribed, thrice daily on the undersurface of the tongue.

Patient was educated about tongue training exercises as

1. Extending her tongue to the nose and then sliding down.
2. Widely open her mouth, and give an attempt to touch the upper front teeth with mouth still wide open.
3. Licking of the upper lip from one side to other, and vice versa
4. Close the mouth and poke both the cheeks as far as you can.

Outcome: In a follow-up session after 1 month, it was observed that healing was uneventful, with adequate tongue display and function.

DISCUSSION

Ankyloglossia is an inherited oral variance associated with a few rare syndromes such as Kindler syndrome, Van der Woude syndrome, X-linked cleft palate syndrome, and Opitz syndrome.[7]

Kotlow postulates for the determination of surgical management of lingual frenulum[4]

1. If the tip of the tongue clefts during the act of protrusion
2. If the tip of the tongue cannot sweep the upper and lower lips easily, without straining
3. If retrusion of tongue blanches the tissue lingual to the anterior teeth
4. If the tongue places excessive forces on the mandibular anterior teeth
5. If the frenum interferes with normal deglutition process
6. If lingual frenum creates diastema between mandibular central incisors
7. If the child experiences speech difficulty due to limited tongue movements
8. If infants, it shows abrasion at the underside of the tongue, and Hence, considering some of the above criteria in our patient, criteria. Eventhough, there are many treatment modalities available as frenectomy, frenotomy, frenuloplasty both by conventional approach and by lasers.

Recently, Diode lasers are practiced for soft tissue oral surgical procedure for their beneficial aids as they are compact, competent and easily transportable.

Owing to its histological characteristic feature reduced number of myofibroblasts resulting in wound contraction and disfiguring, and eventually enhanced healing.[8] Laser assisted frenectomy delivers improved pain perception and function postoperatively on comparing with scalpel technique. Even though, the conventional surgical frenectomies yield upright consequences, yet have their own drawbacks as surgical handlings on the ventral surface of tongue may lead to the impairment of lingual nerve causing numbness on tip of the tongue and furthermore suturing may at times lead to blockage of Wharton's duct and on occasions may lead to Ludwig's Angina.

It is easier to accomplish laser assisted lingual frenectomy with maximum precision, minimal distress, less chair-side time, rapid healing time, less chances of transmissible of infection compared to the conventional technique.[9]

In the present case, we used pulsed mode which provides time for the tissue to cool and prevents collateral tissue damage could protrude the tongue more than 15 mm and buckling of tongue on protrusion was eliminated.[10]

Postoperatively, patient was released without any bleeding or sutures, no edema occurred in the post operative phase due to stimulation of clotting factor VII production and constriction of capillaries by protein denaturation due to its thermal effect.

Figure 1: Pre operative can't touch the upper front teeth.

Figure 2: Laser view with seetings.

Figure 3: Post operative laser view.

CONCLUSION

Early diagnosis and quick management of tongue tie ankyloglossia can save the patient from long term consequences. Laser medical procedure for lingual frenulectomy gives a gradual productive and comfortable treatment for both the patient and specialist.

REFERENCES

1. Fernando C. Tongue Tie—From Confusion to Clarity: A Guide to the Diagnosis and Treatment of Ankyloglossia. New York, NY, USA: Tandem Publications, 1998.
2. Wallace AF. Tongue tie. Lancet, 1963; 2: 377-8.
3. Friend GW, Harris EF, Mincer HH, Fong TL, Carruth KR: Oral anomalies in the neonate, by race and gender, in an urban setting. Pediatr Dent, 1990; 12: 157-161.
4. Lamba AK, Aggarwal K, Faraz F, Tandon S, Chawla K. Er, Cr: YSGG laser for the treatment of ankyloglossia. Indian J Dent, 2015; 6: 149-52.
5. Gross AM, Kellum GD, Hale ST, et al. Myofunctional and dentofacial relationships in second grade children. Angle Orthod, 1990; 60: 247–253.
6. Aras MH, Göregen M, Güngörmüş M, Akgül HM: Comparison of diode laser and Er: YAG lasers in the treatment of ankyloglossia. Photomed Laser Surg, 2010; 28: 173-177.
7. Kotlow LA. Ankyloglossia (tongue- tie): A diagnostic and treatment quandary. Quintessence Int, 1999; 30: 259-62.
8. Moore GE, Ivens A, Chambers J, Farrall M, Williamson R, Page DC, et al. Linkage of an X- chromosome cleft palate gene. Nature, 1987; 326: 912.

9. Zeinoun T, Nammour S, Dourov N, Aftimos G, Luomanen M. Myofibroblasts in healing laser excision wounds. Lasers Surg Med, 2001; 28: 74-9.
10. Giuliani M, Tumbarello M, Marino M, et al.: Dental hygienists behaviour towards HIV-positive patients in highly active antiretroviral therapy era: a pilot survey. Int J Dent Hyg, 2011; 9: 204-210.