ANKYLOGLOSSIA: A CASE REPORT

Abstract

Ankyloglossia is not a newly discovered condition and about 3% of infants are born with a tongue-tie. A patient with Kotlow's class I Ankyloglossia was treated with a soft tissue diode laser. Laser-assisted lingual frenectomy is reliable as it provides benefit of good accuracy, less trauma, minimal or no bleeding and quicker healing with reduced post-operative bleeding and oedema.

Keywords :Ankyloglossia, Soft tissue diode laser

INTRODUCTION

Tongue-tie refers to quite merely stumbling over your words. It is a real oral condition that has ramifications starting from breastfeeding to airway health, speech to dental health.[1] Tongue is defined as a muscle of the mouth that aids in deglutition, talking and tasting of food. The tongue is a multifunctional organ and when it becomes hooked (ankyloglossia), certain functions are restricted. Ankyloglossia is commonly termed as tongue tie and is a condition where an individual is not unable to extend the tonguebeyond the mandibular incisors without discomfort.

'Ankyloglossia' originated from Greek words 'agkilos' for crooked or loop (not straight) and 'glossa' for tongue. Any abnormality of the tongue that restricts the anterior free movement and prevents it from contacting with anterior palate will obstruct the event of adult swallow and cause an open bite deformity.[2]

Kotlow's classification

Class I: Mild ankyloglossia 12–16 mm
Class II: Moderate ankyloglossia 8–11 mm
Class III: Severe ankyloglossia 3–7 mm
Class IV: Complete ankyloglossia

The treatment modalities of ankyloglossia include Frenotomy and Frenectomy. The choice of treatment depends on the thickness of lingual frenulum. The procedure can be performed with various tools like scalpels, cautery tools,lasers and cryotherapy.[3] Early ankyloglossia correction lowers the possibility of latent problems. Therefore, focussing on the patient's history of mechanical or social issues, such as speech or feeding, surgery should be taken into account at any age.[4]

CASE REPORT

An adolescent male patient reported in the month of December 2021 to the department of Periodontology, Manav Rachna Dental College, Faridabad, Haryana, presenting chief complaint of difficulty in free movement of the tongue since childhood. Patient gave the history of inability to maneuver the tongue freely, is also not able to feel the palate with the tongue and the speech is not clear. History of the patient revealed no sign of any systemic disease or familial history.Intra-oral examination showed lingual frenum that is short and anterior portion of the tongue attached at the base.The patient was identified as a case of class I ankyloglossia in keeping with Kotlow's classification. (Fig 1 and 2)

After obtaining the consent from the patient and also the hematological investigations, excision of the frrenulum was performed under local anaesthesia (local infilteration) containing 2% lignocaine and 1:80000 adrenaline with a soft

tissue diode laser (Biolase-USA) at 940 nm wavelength, output energy of 0.8W in contact mode. (Fig 3)

The diode laser was set at required specifications and the tip of the laser was activated with a cork. All the safety protocols associated with laser were followed and the patient was scrubbed with povidone iodine pre-operatively.

The patient was instructed to elevate the tongue and the frenum was grasped with a tissue forcep. The fiberoptic tip was placed at most anterior part of lingual frenum gradually excising the attachment till the patient is able to touch the cervical portion of the maxillary incisors with the anterior part of the tongue. Tissue tags were excised and post operative instructions were imposed. (Fig 4) Analgesics were prescribed and the patient was informed to take the medications if the pain persisted.

Patient was recalled after 1 week to judge the healing which was uneventful and the patient was able to move his tongue without any discomfort. (Fig 5) The patient was recalled for Post-operative evaluations at every 1 month interval and the recurrence of ankyloglossia was monitored.

DISCUSSION

Anatomical definition of ankyloglossia includes descriptions and estimations. Estimations comprise of the range of lingual frenulum as soon as the tongue stretches and the free length of the tongue.[5]

Ankyloglossia is commonly asymptomatic in children and therefore the condition may go away on its own or the affected child may understand the way to accept the reduced lingual movability. Children with congenital anomaly generally benefit from surgery. So as for parents to create an informed decision about potential therapy, they have to learn about the lifelong repercussions of abnormal tongue attachment. [4]

For adequate care competent clinical instructions are compulsory. The standard

extent of tongue movement, which is measured using Kotlow's criteria[2], is the most crucial factor in ankyloglossia.The incidence of ankyloglossia in the newborn well-baby population is 4.8%. In indian population, prevalence of ankyloglossia 4% - 10%. [5]

The anterior part of tongue should distend from the jaws without dividing and scrub the upper and lower lips easily in absence of any straining of tongue.[6] When the tongue is retracted, tissues lingual to the anterior teeth should not be blanched, and there should be no additional pressure applied to the area of the lower teeth. The lingual frenum must not cause a diastema between the mandibular central incisorand also not block an infant from touching to the mother's nipple during nursing.[4]

Tongue tie patients have an inconvenience in pronouncing words that sound from the tongue tip like s, n, t, d, j, zh, ch, th, dg, and l.[7] Referral to a therapist is essential for speech evaluation if incorrect pattern is identified during surgical wound healing. For improved tongue movements, the patient should be instructed on post-operative muscle training of tongue such pressing the hard palate with the anterior part and lateral motions.[8] Barot VJ et al conducted a similar case where soft tissue diode laser was used for moderate Ankyloglossia and had promising results.[9]

When compared to traditional surgical procedures using scalpels,electrocautery, cryo-therapy etc, diode lasers offer a number of benefits. They are designed to be small and portable and offer effective advantages for applications in soft tissue oral surgery.[10] Laser-assisted lingual frenectomy is reliable as it provides benefit of good accuracy, less trauma, minimal or no bleeding and quicker healing with reduced post-operative bleeding and oedema because of the packing of capillaries by protein denaturation and stimulation of clotting factor VII production. Patel et al. reported significantly less intraoperative bleeding with LASER-assisted frenectomy. It can be due to the coagulation of soft tissue proteins at high temperature of tissue ablation.[11]

CONCLUSION

Due to communication difficulties and limited tongue mobility, tongue-tie becomes challenging for the patient. Tongue ties are regularly evaluated by dental surgeons and lot of of them have performed frenectomies to provide the patient a movable tongue, allowing them to keep up effective oral hygiene.[5] The patient was satisfied after the frenectomy procedure and had gained proper speech and confidence without any post-operative pain and discomfort.

Consent

As per international standard or university standard, patient(s) written consent has been collected and preserved by the author(s).

Ethical Approval:

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

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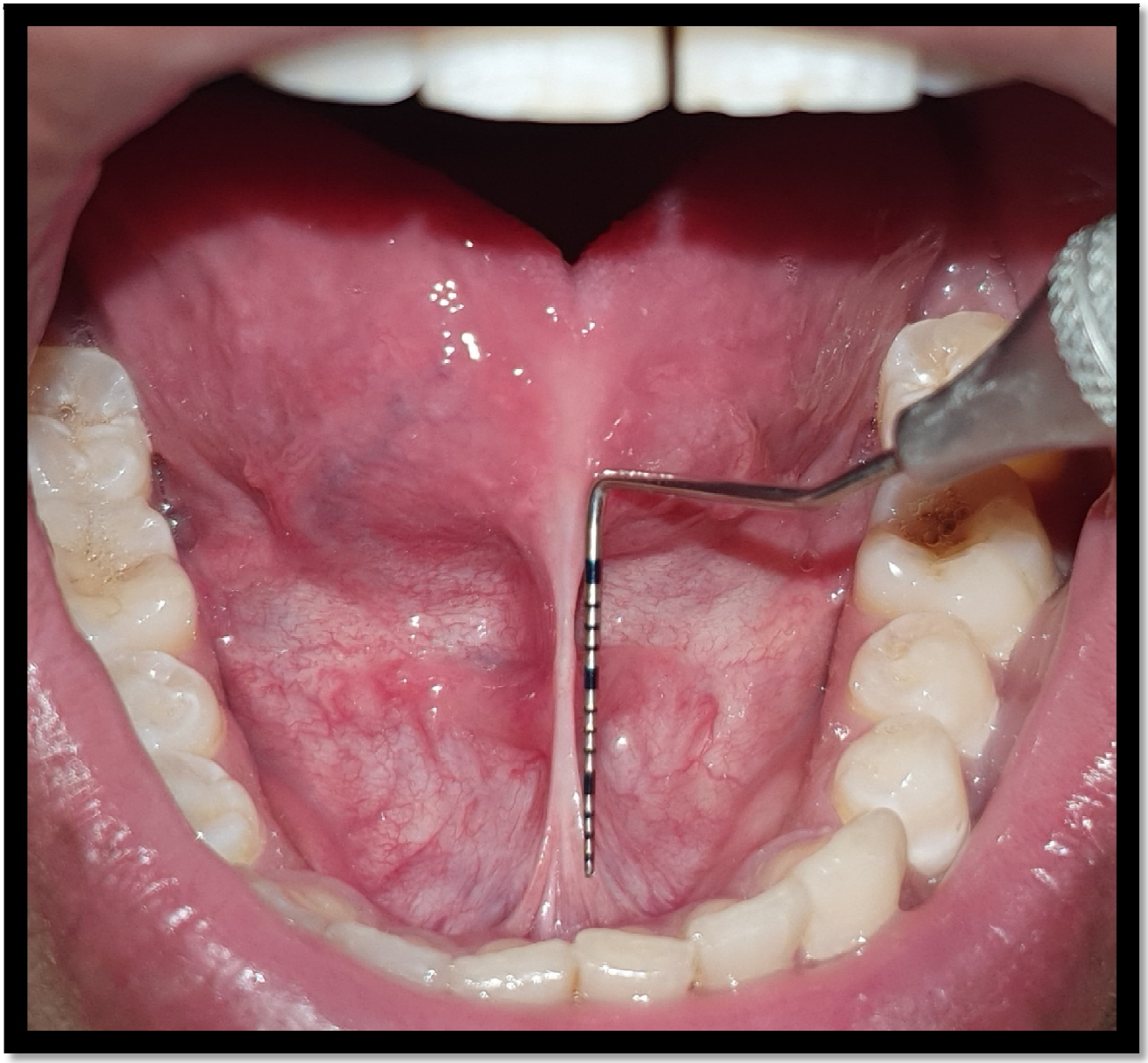

Fig 1- PRE-OPERATIVE- KOTLOW'S CLASS I

Fig 2- Morphology of Tongue-tie (PRE-OPERATIVE)

Fig 3-LASER SETTINGS FOR THE PROCEDURE (BIOLASE)