

Ankyloglossia and Quality of Life

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ABSTRACT

Ankyloglossia (AG) commonly known as tongue-tie. This congenital anomaly characterized by an abnormal short lingual frenulum attached to floor of mouth. Though the ankyloglossia is not a serious issue, but it may cause problems, like feeding difficulties, speech disorders, and hamper quality of life through affecting their social life and confidence. Hence, management of ankyloglossia should be considered at age, which should include surgical management as well as efforts should be made to improve the quality of life of the patient. The purposes of this report to describe about ankyloglossia, its management for the better clinical approach and improve the quality of life of the patient.

Keywords: Ankyloglossia, Lingual frenectomy, Speech, Social discomfort, Tongue-tie.

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INTRODUCTION

Ankyloglossia (AG) is Greek word, defined on the basis of inability to extend the tip of tongue beyond the vermilion border of the lips or a line joining the lip commissures along with speech impairment.¹ Its common name is 'tongue-tie'. Frenum being short, thick, muscular or fibrotic.²⁻⁵

Depending upon Free Tongue Length, Ankyloglossia can be classified as suggested by Kotlow's^{5,6}

- Normal range of free tongue > 16 mm
- 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 < 3 mm

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The incidence of AG ranges from 0.002 to 4.8%. It is common among male.^{2,5,7,8}

CAUSES

Ankyloglossia is a congenital anomaly characterized by an abnormally short lingual frenulum where tongue gets attached to the floor of the mouth.^{5,9} Studies have reported that there is three-fold increased risk of AG among maternal cocaine users.¹⁰

Ankyloglossia can be a part of syndromes, like X-linked cleft palate, Meckel syndrome, orofacial digital syndrome, van der Woude syndrome, Opitz syndrome, Beckwith-Wiedemann syndrome, Simpson-Golabi-Behmel syndrome and X-linked cleft palate.^{5,11-14}

Tongue-tie commonly causes breastfeeding difficulties (sore nipples, poor infant weight gain, early weaning), speech disorders (impaired articulation, consonants and diphthongs), problems with deglutition and dentition, oral-motor dysfunction and social issues related to the limited function of the tongue. Heart-shaped tongue when raised or protruded out and V-shaped notch at the tip of the tongue is seen. There is no consensus regarding the indications, timing or method of surgical repair for AG.¹⁵ There is much controversy regarding this condition. This paper reports surgical management of ankyloglossia in a young adult patient who had severe restriction of his tongue movements. It should be noted that some experts categorically state that frenotomy should not be performed before 4 to 5 years of age.^{3,5}

CASE REPORT

A young female patient aged 15 years came to the department with a chief complaint of difficulty in pronunciation of words and not able to put her tongue out. Medical history was noncontributory. On oral examination, the patient was found to have short lingual frenum with restricted tongue movements. It was observed that when the mouth was open, patient was unable to touch the palate.

TREATMENT

These features confirmed the patient to have AG, and surgical frenectomy of the lingual frenum was planned (Fig. 1). Patient was informed regarding treatment and its complication then consent was obtained. Procedure started with application of topical anesthetic to the





Fig. 1: Patient showing ankyloglossia



Fig. 2: Incision and removal of fibrous band

underside of the tongue and local anesthetic infiltration was administered into the frenum area. After anesthesia was found to be effective, a suture was used at the tip of the tongue to stabilize it. As the frenum became prominent, a hemostat was used to clamp it. Incision was given with a no. 15 BP blade. Triangular retracted portion of the frenum was removed (Fig. 2). After release of the lingual frenum, the margins of the incision were sutured with 3 to 0 silk suture (Fig. 3). Patient showed favorable outcome immediately and the extent of release could be assessed during the intervention itself (Fig. 4). Postsurgical instructions were given along with a course of nonsteroidal anti-inflammatory drugs for 3 days. The sutures were removed 1 week following the procedure. The postoperative period was uneventful (Figs 5 and 6). The following exercises, like stretching the tongue up toward the nose, then down toward the chin, opening the mouth widely and touch the big front teeth with the tongue with mouth still open, shut the mouth and poke it into left and right cheek to make a lump for 3 to 5 minutes bursts, once or twice daily for 3 or 4 weeks postoperatively were advised. The routine follow-up at 4 weeks showed an extremely happy patient with improved tongue protrusion (Fig. 6) and normal speech.



Fig. 3: Suturing

DISCUSSION

Ankyloglossia represents a typical interdisciplinary problem concerning different specialties in dentistry. Studies have shown the association between AG and gingival recession of lower anterior teeth.⁵

Ankyloglossia influences the mobility of the tongue (eating and speaking), as well as oral hygiene is also affected.^{5,16,17} Due to restricted movements, patients exhibit speech difficulties in pronunciation of certain consonants and diphthongs. Speech defects include defects in the letters T, D, N and L, in sounds and words, such as ta, te, time, water, cat, and general unintelligibility

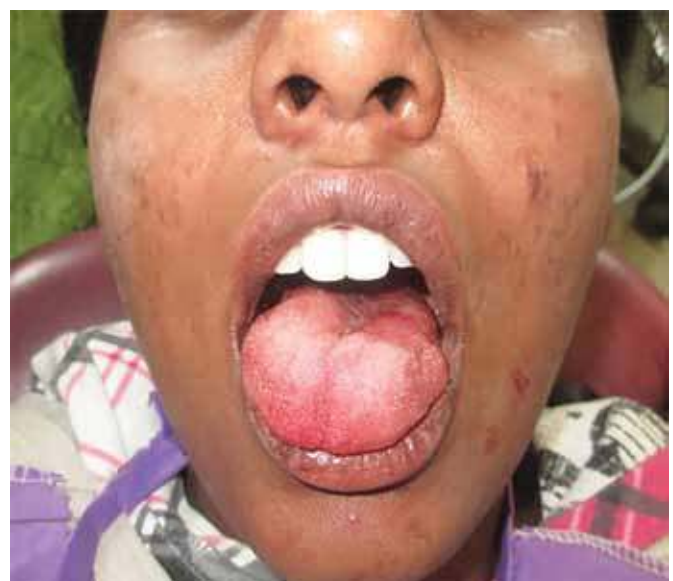


Fig. 4: Tongue protrusion postoperatively



Fig. 5: Tongue elevation during recall check-ups



Fig. 6: Tongue protrusion during recall visits

of speech.¹⁸ Ankyloglossia results in jaw deformities, such as mandibular prognathism,¹⁹ midline diastema,²⁰ oral motor dysfunction²¹ and gingival recession.^{7,5} Quality of life of the patient is affected due to difficulty in speaking or their anomaly, which further leads to psychological isolation.^{5,8}

Treatment Approaches for Ankyloglossia

1. Frenectomy under anesthesia and Z-plasty²²: Frenectomy is a complete removal of the frenum, including its attachment to the underlying bone, and may be required for correction of abnormal diastema between maxillary central incisors (Friedman 1957).

Techniques for frenectomy are as follows:

- Conventional technique
 - Using soft-tissue lasers
2. Observation, speech therapy, frenotomy without anesthesia²³: Frenotomy is the incision and relocation of the frenal attachment.

Indications are as follows:

 - Tension on the gingival margin (frenal-pull concomitant with or without gingival recession)
 - Facilitate orthodontic treatment
 - Facilitate home care
 3. Bipolar diathermy and lasers: Diode lasers have wavelengths ranging from 655 to 980 μm .²⁴

Complications

After frenectomy, there might be changes of infection, excessive bleeding, recurrence due to excessive scarring, new speech disorders developing postoperatively and glossoptosis (tongue 'swallowing') due to excessive tongue mobility.⁵

At the end of 4 weeks follow-up, the patient presented in this paper was very happy about the improvement in his tongue movement for his ability in easily swallowing the food, and especially pronouncing words containing letters, such as T, D and N, which he could not do till then with ease, which directly contributed for improvement of his self-esteem. Patient's quality of life improved by a simple surgical procedure so that the patient can maintain good oral hygiene and enjoy a life in society with confidence. To improve the quality of life of AG patient, a timely surgical management followed by speech therapy is very important.

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