

## Ankyloglossia or tongue tie- A case report

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**Abstract:** Ankyloglossia or tongue tie is a ongoing controversy among professionals as well as speciality groups. It is characterized by short lingual frenum or abnormal attachment of lingual frenum. It causes restricted tongue mobility which in turn causes feeding difficulties and speech problems. Here we present a case report of ankyloglossia in a 11 year old male child.

**Keywords:** Ankyloglossia, lingual frenum, surgery

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### I. Introduction

The term ankyloglossia is derived from greek word agkylos- “crooked”, glossia- “tongue”. Partial ankyloglossia also called as tongue tie is a condition caused by abnormally short frenum of the tongue or the frenum is attached too close to the tip of the tongue<sup>1</sup>. The other category is total ankyloglossia which is rare and occurs when the tongue is completely fused to the floor of the mouth. The incidence of tongue tie varies from 0.2%-5%, with a male child predilection. It also occurs as a clinical feature with syndromes such as Smith-Lemliopitz syndrome, Orofacial digital syndrome, Beckwith Weidman syndrome, Simpson-Golabi-Behmel syndrome and X-linked cleft palate<sup>2</sup>.

Ankyloglossia or Tongue tie affects speech, feeding, oral hygiene as well as social environment also. It causes blanching of soft tissue during tongue retrusion and also exerts force on mandibular anteriors<sup>2</sup>. We report a case of partial ankyloglossia in a 11 year old male child which has been treated and followed up without any post operative consequences and recurrence.

### II. Case report

An 11 year old male patient came with the chief complaint of difficulty in speaking and difficulty during the intake of food. He also complained regarding the restricted tongue movement. On extraoral examination there were no significant findings noted. On intra oral examination there was restricted tongue movement due to the presence of fusion of lingual frenum to the tongue with tongue protrusion measuring 10mm only (Fig. 1). On taking family history there was no such case reported in patient’s family members. A complete hemogram has been done with all the values within normal limits. On taking consent with patient’s parents an treatment plan of partial frenectomy with LASER guided instrument has been made (Fig. 2).

During surgery frenotomy has been performed with the removal of partial lingual frenum with the purpose to make the tongue freely movable. After performing partial frenectomy there is an immediate tongue protrusion of 20mm which was comfortable with the patient (Fig.3). The phonetics of the patient was improved and was kept on antimicrobials along with NSAIDS to relieve pain for 15 days with instructions to move the tongue slowly to avoid recurrence. The patient was followed up for 5 months with no recurrence and difficulty in phonetics and during intake of food (Fig.4).

### III. Discussion

Ankyloglossia is a rare congenital anomaly characterized by the attachment of tongue to the floor of the mouth. It occurs due to failure in cellular degeneration leading to longer anchorage between tongue and floor of the mouth<sup>2</sup>. According to Kotlow’s classification tongue tie is classified as Class I (Mild Ankyloglossia: 12-16mm), Class II (Moderate Ankyloglossia: 8-11mm), Class III (Severe Ankyloglossia: 3-7mm) and Class IV (Complete Ankyloglossia: Less than 3mm)<sup>3</sup>. According to this classification our case was of Class II Moderate Ankyloglossia with tongue protrusion of 10mm.

Ankyloglossia, Partial or Complete causes specific speech disorders in certain individuals. It does not prevent or delay the onset of speech, but interferes with articulation which is consistent with our case. A simple speech articulation test has been suggested in which if the elevation of the tongue tip is restricted, the articulation of l or more of the tongue sounds- such as “t”, “d”, “l”, “th” and “s” will not be accurate<sup>4</sup>. In our case also the patient was unable to pronounce the word starting with these letters.

Lalakea recommended measuring lingual mobility and tongue elevation to document and define the degree of restriction and ankyloglossia. Mobility is measured in millimeters the tip of the tongue extended past

the lower dentition, while elevation is measured by recording interincisal distance with the tongue tip maximally elevated and in contact with the upper teeth. If there is ankyloglossia the protrusion and elevation values of 15mm or less will be recorded and 20 to 2mm for normal individuals<sup>4</sup>, which is applicable for our case also.

Several studies have considered the effectiveness of treating ankyloglossia with frenotomy without any serious complications post operatively. It has been acknowledged that frenotomy could be of great use as a safe and effective early intervention for problems attributed to ankyloglossia<sup>5</sup>. It is a simple “snip” with a blunt ended scissors is usually needed and bleeding is minimal. It is less traumatic than ear piercing and much less invasive and painful than circumcision. Only rarely is a general anesthesia needed when a frenuloplasty (transverse cutting and vertical repair) is needed rather than a simple anterior to posterior snip (frenotomy)<sup>6</sup>.

The use of lasers in the treatment of ankyloglossia makes it safe and minimally invasive procedure. It has advantage over conventional treatment as it is bactericidal, provide a bloodless operating field and do not require sutures or anesthesia. Moreover, it is fast and safe without significant post surgical complications. The settings used for lasers in infants and children should be lower than normally used in adult patients due to differences in thickness of the tissue. The oral tissue in infants and children are less fibrotic and thinner compared with the oral tissues of adult patients<sup>7</sup>. In our case laser has been opted for the removal of tissue. Some patients get benefit from surgical intervention frenotomy, frenectomy, or frenuloplasty for tongue tie. They should be educated regarding the long term effects of ankyloglossia so that they can make choice regarding possible therapy for ankyloglossia<sup>8</sup>.

The purpose of post operative exercise after surgery is to develop new muscle movements particularly those involving tongue tip elevation and protrusion, inside and outside of the mouth. It also increases aesthetic awareness of the full range of movements the tongue and lips can perform. Moreover, it encourages the tongue movements related to cleaning of oral cavity including sweeping the insides of the cheeks, fronts and backs of the teeth and licking around both lips<sup>9,10,11</sup>. The patient treated in our case also has been advised to perform oral exercises so as to avoid reunion and free movement of tongue.

#### **IV. Conclusion**

Tongue tie or ankyloglossia affects quite a number of infants and children. It causes improper chewing and swallowing of food which in turn increases the gastric distress and bloating, snoring and bed wetting at sleep. Dental caries can occur due to restricted tongue’s sweeping action on the teeth and spreading of saliva. Malocclusion like open bite due to thrust created by tongue tie spreading of lower incisors and tooth mobility due to long term tongue thrust. Therefore it is important that accurate information and guidance should be given to the parents so that appropriate revision could be done for infants and children.

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Fig.1 showing tongue protrusion of 10mm



Fig.2 showing LASER guided instrument



Fig.3 showing post operative tongue protrusion of 20mm



Fig. 4 showing follows up with tongue protrusion