

Tongue Tie-A Treatment Dilemma : A Case Report & A Brief Review

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Abstract

It is no longer generally accepted that only those ties severe enough to cause undernourishment, or to prevent pronunciation of tongue tip sounds, are significant. Every child has a right to do the things as other children of their age group do. So, by not doing the treatment of tongue tie, we are creating a sort of differentiation in them and psychological defects in the child.

For many years, the subject of ankyloglossia has been controversial, with practitioners of many specialties having widely different views regarding its treatment significance. In the past, there was little besides observation or anecdotal evidence to guide us towards a decision about whether to intervene. Now, both diagnosis and assessment of a tongue tie can be made by informed and qualified professionals.

In many children, ankyloglossia is asymptomatic in the way that the child may learn to compensate adequately for their decreased lingual mobility. Children, however, benefit from early surgical intervention for their tongue-tie. There are no complications as such. By doing the treatment we can prevent psychological deficit in the child. Parents should be educated about the possible long-term effects of tongue-tie to prevent the psychological deficits developing in their child.

In this article, we present a case report of eight year old female child with tongue tie and low self esteem. She underwent frenectomy under local anesthesia without any post operative complications.

Key Words: Ankyloglossia, tongue tie, frenuloplasty, failure to thrive, low self esteem, difficulty in speech

Introduction

Congenital oral adhesions may pose esthetic, functional, social and psychological disturbing diseases in child. Most of these are curable and can be treated, as soon as it is diagnosed, in the dental office.¹ Ankyloglossia, commonly known as tongue tie, is derived from the Greek word 'agkilos' for crooked and 'glossa' for tongue. It is a congenital oral anomaly characterized by the persistence of the lingual frenulum as an anatomical abnormality.

The tongue being an important oral structure affects speech, position of teeth, periodontal tissue, swallowing and nutrition.² The tongue is made up of muscle tissues that help the child during feeding, swallowing, and talking. It is connected to the floor of the mouth through a thin piece of tissue called the frenulum. The frenulum is attached to the middle part of the tongue, allowing the front

part to move freely. With ankyloglossia, the child's frenulum may be shorter, thicker, or tighter than it should be. His tongue is held tighter to the floor of his mouth, reducing movement. Its severity can range from a slight abnormality with no clinical significance to a tongue completely fixed to the floor of the mouth. It may also be an isolated finding, or can be found as a part of certain malformation syndromes like Pierre Robin Syndrome, Opitz Syndrome and Orodigitofacial syndrome.³

Incidence and Epidemiology

Published information largely consists of case series and observational studies^{4,5}. Depending upon the study population, the reported prevalence varies from less than 1% to 10.7%.⁵⁻¹⁴ The variation in reported incidence may be attributed in part to the lack of a uniform definition and objective grading for tongue tie¹⁵. The prevalence is reported at around 3-4% of babies and shows a male preponderance, with ratios varying from 1.5:1 to 2.6:1.^{5,11}

Most of the cases reported in the literature shows ankyloglossia associated with difficulty in breastfeeding.

Presented here is a case report with ankyloglossia associated with speech difficulty and social depression.

Case Report

An eight year old girl presented to the department with a chief complaint of inability to speak clearly. Children used to tease her and so she was sad and depressed. She used to have problems doing what other children can easily do. These included licking an ice cream cone, sticking her tongue out completely, playing wind instruments such as the flute or even speaking clearly. Hence, she was separated from the society.

On intra oral examination it was found that she had shortened lingual frenum (Fig. 1). Frenuloplasty was planned and done under local anesthesia without any complications. For that, after lifting the tongue tight, release incision was given and suturing done by 2-0 silk sutures. (Fig. 2, 3) Healing was uneventful.

Discussion

Several methods have been proposed to classify the severity of ankyloglossia according to either anatomical or functional criteria. (Table 1).^{2,7,9-11,16-24} However, at present, a unified classification system is still lacking.

Etiology & Pathogenesis

Little is known about the underlying pathogenesis of ankyloglossia. Ankyloglossia is a congenital condition, which means that the child is born with it. It may run

in families, and is more common in males than in females. Mothers with history of cocaine abuse have a higher risk of having a child with tongue tie. It is also seen in children with certain genetic problems. Studies in animal models have shown that, during embryonic development, the tongue is formed from the foregut endoderm, and by E13, the distal end of the tongue is freed from the floor of the mouth.

Programmed cell death and resorption of the developing skeletal muscle in the ventral anterior region free the tongue, and, normally, a thin tissue band, the lingual frenulum, remains as the only attachment. Disturbances of this process result in an anteriorly extended and/or shortened frenulum, leading to the ankyloglossia phenotype.²⁵ It showed Autosomal Dominance Inheritance. It frequently accompanies X-linked cleft palate, hypodontia and is seen with mutations in the T-Box transcription factor TBX22^{26,27}.

Signs & Symptoms

Babies

- Babies may have problems with latching on to their mother's breast during breast-feeding or with bottle feeding.
- They may not get enough milk because of the condition.
- Breast-feed babies may suck even harder and this may cause breast pain in mothers.
- Sleep deprivation.
- When this happens, mothers may want to stop or limit breast-feeding with the babies being bottle fed instead.

Children

- With his mouth open, he cannot easily touch the roof of his mouth with the tip of his tongue.
- Is not able to extend his tongue much past his lower lip.
- Has a heart-shaped tip on the front of his tongue. This may be seen when he tries to extend his tongue out with his mouth open. This happens when the sides of the tongue move forward, but the tip is held back by the tight frenulum.
- Difficulty lifting the tongue to the upper dental alveolus.
- Inability to protrude the tongue more than 1 to 2 mm past the lower central incisors
- Impaired side-to-side movement of the tongue.
- Notched or heart shape of the tongue when it is protruded.

Difficulties Encountered

a) Oral & Dental

- Ankyloglossia may cause chronic halitosis (mouth odor) when food is not cleared and stays in the mouth.
- This can cause the bad smell and start

tooth decay.

b) Social & Behavioral

- He may be teased by other children and be sad, angry, or depressed.
- He may have problems doing what other children can easily do. These may include licking an ice cream cone or sticking his tongue out completely.
- He may also have problems playing wind instruments such as the flute.
- Loss of self confidence because they feel and sound differently.
- Strong, incorrect habits of compensation being acquired.

c) Speech

- Ankyloglossia will not prevent or delay the child's ability to talk. Having this condition may only cause problems in how he can say or pronounce some words.
 - Words with the tongue sounds D, L, N, T, TH, and S may be hard for him to say. Examples of words that will not sound right with tongue-tie.
- D: dad, drum, dead, deed, dance, Dracula, dumb, etc.
 L: lad, lady, light, ladder, laughter, etc.
 N: no, note, null, night, name, nintendo, goodnight, etc.
 T: to, tom, tic, that, this, thought, etc.
 S: son, sorrow, etc.

Management

Meanwhile, management of ankyloglossia in newborns or young infants is also the subject of ongoing controversy (Ballard et al., 2002¹¹; Messner and Lalakea, 2003¹⁵).

**New Born Babies⁴
Mild Ankyloglossia**

This may not be treated unless there are feeding problems. Watchful waiting may be all that is needed as his tongue grows. The inside of his mouth will change in size and

shape during the first 4 to 5 years of life. When his teeth start to erupt, his tongue grows and will narrow at the tip. Over time, his frenulum may grow, stretch, and even come loose on its own.

Severe Ankyloglossia

The frenulum is clipped with surgical scissors to release the front of the tongue. There is usually little discomfort and little bleeding when this is done. It may be done with or without local anesthesia medicine for pain. This procedure may improve your baby's ability to latch-on correctly to your breast during breast-feeding. This improvement is often seen right after doing the procedure.

Children: Your child may need to do tongue exercises or have speech therapy after any of the following:

Frenuloplasty/Frenectomy

- It is done if the frenulum is thick.
- He may be given local or general anesthesia to control pain during surgery.
- The frenulum is cut and removed.
- The wound is then closed with sutures (stitches).

There are different techniques of doing Frenectomy.

1. Use of Simple Scissors or Surgical Blade (Fig. 2) - Commonly available and can be performed even at Primary Health Centers.
2. Electrocautery^{1,28} - This requires equipment and is technique sensitive.
3. Lasers^{2,29} - This do not require anesthesia but it is technique sensitive and costly

Adverse Effects/Complications

- Bleeding
- Infection
- Ulceration
- Pain
- Damage to the tongue and sub

mandibular ducts

- Recurrence of the tongue-tie.

Conclusion

While the existence of Ankyloglossia has never been questioned, the decision on whether surgery is an appropriate treatment has been the subject of many debates. Even today, the literature available tends to focus on different aspects depending on whether the author is a dentist, lactation consultant, speech-language pathologist, surgeon or general practitioner.

Although there is little consensus of opinion, there is still an ingrained reluctance to recommend surgery. As a result, there are many children who undergo several years of speech therapy with little or no improvement until the tongue tie is detected (often, by chance) and remedied. In fact, the possibility of a tongue tie being the cause should be part of the differential diagnosis performed when a speech pathologist sees a new patient. Surgical treatment of the structural defect should be the next step to be considered.

God created the tongue without bones for a purpose, unrestricted mobility and flexibility. Freedom to produce sounds, sounds to make you laugh or sounds to make you cry or crazy.

A twist of the tongue can make peace or war, make Friendship or Fighting. Parents should consider that this surgery often yields more benefit than is obvious by restoring ease of speech and self-esteem in a child.

Figure Legends

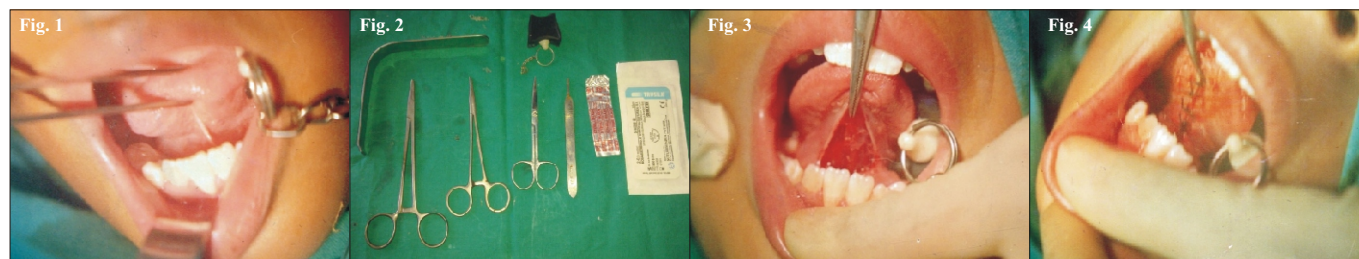
1. Intra oral view of the patient showing tongue tie.
2. Armentarium used and commonly present in all Primary Health Centres.
3. Release incision Given.
4. Suturing done

References

For a complete list of references are available on request, please mail us editor@healtalkht.com

Table-1

Author	Year	Criteria
Hogan M et al ⁹	2005	Frenulum extending along 25%-100% of tongue's total length
Ricke L et al ¹⁰	2005	Hazerbaker's assessment tool ¹⁶ for lingual frenulum function
Griffiths ¹⁷	2004	Frenulum thick; tongue heart shaped when protruded
Ballard et al ¹¹	2002	Hazerbaker's assessment tool for lingual frenulum function
Messner et al ¹⁸	2000	Frenulum abnormally short
Messner and Lalakea ⁷	2000	Frenulum abnormally short; decreased mobility of tongue tip
Kotlow L ²	1999	Distance between insertion of lingual frenum to the tip of tongue
Masaitis and Kaempf ⁹⁹	1996	Tongue heart shaped when protruded; inability to bring tongue over lower gum ridge; abnormally short, thick frenulum; maternal nipple trauma
Harris et al ²⁰	1992	Frenulum short, thick and fibrous; frenulum extends to the papillated surface of tongue
Marmet et al ²¹	1990	Inability to bring tongue over lower gum ridge; normal breastfeeding sucking motion inhibited; tongue heart shaped when protruded
Notestine ²²	1990	Frenulum < 1cm in length; tongue heart shaped when protruded; tight feeling when finger placed under tongue along midline; tongue cannot reach gum line when protruded
Fleiss et al ²³	1990	Tongue tip cannot reach top of the gums; tongue tip cannot swing from one corner of the mouth to other; tongue displays notching when protruded; tongue cannot be protruded beyond lower gum
Jorgenson et al ²⁴	1982	Frenulum prevents protrusion of tongue; frenulum extends to the papillated surface of tongue; frenulum fissures tongue tip during normal movements



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