Lingual frenectomy as treatment of ankyloglossia in Children A Case Report

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Case Report

Lingual Frenectomy as Treatment of Ankyloglossia in Children: A case report

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ABSTRACT

Background: *Ankyloglossia or tongue tie is a congenital condition that results when the inferior lingual fraenulum is too short and attached to the tip of the tongue, limiting its normal movements. It causes restricted tongue mobility which in turn causes feeding difficulties and speech problems.* ***Purpose :*** *The article was aimed to report the treatment of an eight years old boy who came with the chief complaint of difficulty in moving his tongue freely which causes speech difficulties.* ***Case Management :*** *The patient was treated for a lingual frenectomy procedure under local anaesthesia using one haemostat method. The haemostats were used to delimit the area to be excised as well as to guide the incisions. One haemostat used to clamp the upper aspect of the fraenulum may be helpful to guide the incision close to the ventral surface of the tongue. After the release of the tongue, care must be taken not to injury the submandibular ducts when making the second incision at the lower aspect of the fraenulum. After 1 to 2 weeks the incision was completely healed.* ***Discussion****: Ankyloglossia occurs due to failure in cellular degeneration leading to longer anchorage between tongue and floor of the mouth. Surgical intervention for treating ankyloglossia includes conventional technique with hemostats, electrocautery and laser. In this case, patient was undertaken surgical intervention using one hemostat method.* ***Conclusion:*** *The ankyloglossia case showed that the frenectomy gave good healing with no post operative complications in 8 years old boy.*

Keywords: *Ankyloglossia, lingual fraenum, frenectomy, children*

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INTRODUCTION

Lingual frenulum is a fold of mucous membrane which attaches the tongue to the floor of the mouth.[1] Ankyloglossia (AG), also known as tongue-tie, is a congenital oral condition characterized by a short, thickened, or abnormally tight lingual frenulum.[2] This anomaly can cause varying degrees of reduced tongue mobility, and has been associated with functional limitations including atypical swallowing, speech articulation problems, mechanical problems such as the inability to clean the oral cavity, and psychosocial stress.[3] Treatment options such as observation, speech therapy, lingual frenectomy have all been suggested in the literature.[4] The article was aimed to report the treatment of an eight years old boy who came with the chief complaint of difficulty in moving his tongue freely which causes speech difficulties.

CASE

An 8-year-old boy came with the chief complaint of difficulty in moving his tongue freely which causes speech difficulty in pronouncing certain words freely. Physical examination found that his frenulum was attached very close to the tip of the tongue, and such condition was able the ability to produce speech sounds that require rising or extending the tip of the tongue, including “s, z, t, d, l” and specially to roll an “r”. There were no feeding problems have been tracked down when he was born until now.

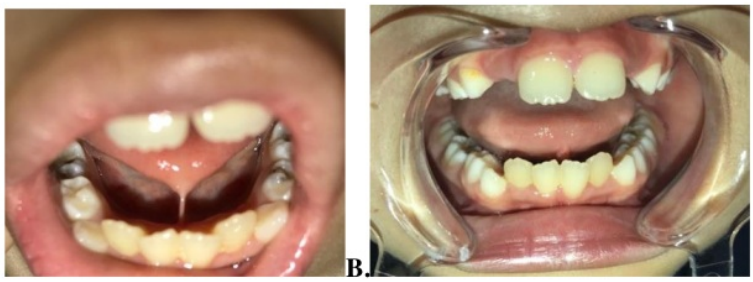

Figure 1: A) Pre-operative view showing thick band of lingual frenulum and restricted tongue movement **B)** Difficulty in moving his tongue freely

On taking family history, there was no such case reported in the patient's family members and no relevant medical history. On extra oral examination there were no significant findings noted. Intraoral examination revealed the restricted tongue movement due to the presence of fusion of lingual frenulum to the tongue with tongue protrusion measuring 3-7mm only (Figure 1). There was no abnormality found in the radiologic examination, the patient was scheduled for lingual frenectomy.

CASE MANAGEMENT

After obtaining informed consent, the following procedure was carried out. After intraoral antisepsis with povidone iodine, topical anesthetic was applied to the underside of the tongue following which bilateral lingual nerve block with 2% lignocaine was administered. The frenulum was held with a small curved hemostat with the convex curve facing the ventral surface of the tongue. Lingual frenectomy was performed with scalpel using blade no. 15. The first incision was made following the curvature of the hemostat, cutting through the upper aspect of the frenulum. The second incision was made at the lower aspect of the frenulum, fairly close to the floor of the mouth. The frenulum was then excised, leaving a diamond-shaped wound.

The wound margins were undermined with the tips of blunt-ended dissecting scissors. Following the excision of the muscle fibers, simple interrupted sutures were placed to close the surgically open site along with prescription of antibiotic regimen three a day and analgesic twice a day for five days. The sutures were removed 1 week following the day of surgery which showed excellent healing and the tongue movements were re-evaluated (Figure 2). The patient was also advised to visit a speech therapist for further improvement in his speech.

Figure 2. Suture placed

DISCUSSION

The tongue starts to develop at about 4 week's intra uterine. The tongue originates from the first, second, and third pharyngeal arches which induce the migration of muscles from the occipital myotomes. A U-shaped sulcus develops in front of and on both sides of the oral part of the tongue. This allows the tongue to be free and highly mobile, except at the region of the lingual frenulum, where it remains attached. Disturbances during this stage cause ankyloglossia[5].

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.[6] The incidence of ankyloglossia in various reports ranges from 0.02% to as high as 4.8% of term newborns. The pathogenesis of ankyloglossia is unknown. Ankyloglossia

can be a part of certain rare syndromes such as X-linked cleft palate (OMIM 303400) and van der Woude syndrome (OMIM 119300), Opitz syndrome, and Kindler syndrome. Ankyloglossia is commonly seen as an isolated finding in an otherwise normal child.[7]

Choice of management for ankyloglossia includes timely and appropriate surgical intervention, followed by speech therapy which delivers pleasing results, often in a less time than expected. Surgical intervention for treating ankyloglossia includes conventional technique with hemostats, electrocautery and laser.[8]

The laser has an advantage over other two methods as less pain, clear surgical field and comfort of the patient but it is not cost effective. The most expedient factor of electing scalpel over the other techniques was because of the fact that the complete excision of the lingual fraenulum muscle fibres could be achieved. But caution should be taken while preferring scalpel in order to minimize the trauma to the adjacent vital structures. For all these features, laser is well tolerated by children.[9]

In this case, patient was having ankyloglossia and he faced a lot of consequences of it. Consideration of such case for surgical management immediately is important. The patient was undertaken for a lingual frenectomy procedure under local anaesthesia with 2% septocaine by using one haemostat method. The haemostats were used to delimit the area to be excised as well as to guide the incisions. One haemostat used to clamp the upper aspect of the fraenulum may be helpful to guide the incision close to the ventral surface of the tongue. After the release of the tongue, care must be taken not to injury the submandibular ducts when making the second incision at the lower aspect of the fraenulum. The intervening fraenum was removed and left with a diamond-shaped wound. Then further dissection carried out with the help of the same haemostat to release the muscle fibers so as to achieve a good tension-free closure of the wound edges. The wound edges were approximated with (4-0) black braided silk sutures for the tissues to heal by primary intention thereby minimizing the scar tissue formation.

Patient was instructed to consume soft diet until healing of the lesion. Follow-up in 1 to 2 weeks should showed that the incision is completely healed (Figure 3). 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, improved speech and mastication. It also increases self aesthetic awareness of the full range of movements the tongue and lips can perform.

Figure 3: Four weeks post-surgical healing showing marked improvement in tongue protrusion

The treatments can be done at this time because his parents are only aware of the state of their children who begin to appear speech and eating disorders. The age of the child has also begun to concern the social environment. If the patient comes early, the treatment results will be better. This ankyloglossia case showed that the frenectomy gave good healing with no post operative complications in 8 years old boy.

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