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Case Report

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Ankyloglossia In Deciduous Dentition

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Abstract

Ankyloglossia is also known as tongue-tie. It is a relatively common finding in pediatric surgical outpatient clinics. It is a congenital condition that results when the inferior lingual frenulum is too short and attached to the tip of the tongue, limiting its normal movements.

Ankyloglossia limits the tongue movements upto varying degrees and thus can lead to a range of problems, such as difficulties in breastfeeding in infants, speech impediments, being embarrassed by peers during childhood and adolescence, and poor oral hygiene. Treatment of ankyloglossia can range from frenotomy to frenectomy to electrocautery to monopolar diathermy. The treatment choicse varies from case to case.

The present article describes the surgical management of a patient having ankyloglossia associated with restricted movement of tongue. The treatment involved surgical removal of the lingual frenum, which healed uneventfully and the patient showed improved movements of tongue when viewed 1 month postoperatively.

Key Words

Ankyloglossia, tongue-tie, Lingual frenum, Frenectomy

Introduction:

Ankyloglossia originates from the Greek words "agkilos" (curved) and "glossa" (tongue).[1] Ankyloglossia, commonly known as tongue tie, is a congenital oral anomaly which may decrease the mobility of the tongue tip and is caused by an unusually short, thick lingual frenulum which is a membrane connecting the underside of the tongue to the floor of the mouth. The first use of the term ankyloglossia in the medical literature dates back to the 1960s, when Wallacedefined tongue-tie as "a condition in which the tip of the tongue cannot be protruded beyond the lower incisor teeth because of a short frenulum linguae, often containing scar tissue." [2]

Ankyloglossia varies in degree of severity from mild cases, characterized by mucous membrane bands to complete ankyloglossia whereby the tongue is tethered to the floor of the mouth. Ankyloglossia, or tongue-tie, can be observed in neonates, children, or adults.[3]

Classification

Several classifications have been proposed, but none have been universally accepted. **(Table Classification)**

Case Report:

A six year old boy's parents reported to our clinic after noticing some abnormalities during speech and mastication of food. The chief complaint of the pt was difficulty in speaking and mastication.

Clinical examination revealed a thick fibrous lingual frenulum attachment causing restriction in tongue movement.**[Fig.1]** Provocation test showed restriction of protrusive and lateral movements of tongue. Patient showed inability to touch tip of the tongue over the palatal region.

Heamatological investigations were performed which showed no positive findings. Treatment plan was discussed with patient's parents and after taking consent of the parents frenectomy was planned. Under infiltration anesthesia, a horizontal incision through the frenum was made, the tongue being held upwards so that the frenum is stretched. The wound margins are gently undermined with curved scissors and the wound is transformed into a vertical one by suturing it from left to right.**[Fig.2]**

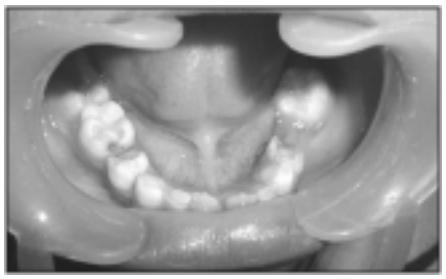

Figure 1 : Preoperative intraoral view

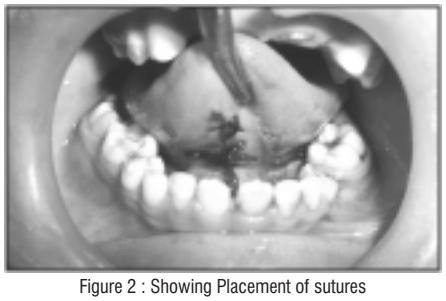

Figure 2 : Showing Placement of sutures

Discussion:

Ankyloglossia is a congenital anomaly characterized by an abnormally short lingual frenulum. The condition is the result of a failure in cellular degeneration leading to a much longer anchor between the floor of the mouth and the tongue.[8] Newborns with tongue tie are often

Classification Table

Investigators	Type Of Study	N	Method Of Assessment	Classification
Horton et al, 1969 [4]	Expert opinion And case series	102	Inspection	Mild : mucous membrane band Moderate: frenum and the genioglossus muscle are markedly fibrosed Complete: tongue fused to the floor of the mouth
Kotlow, 1999[5]	Case series	322	Measured length of the free tongue (length of tongue from the insertion of the lingual frenum into the base of the tongue to the tip of tongue)	Normal: >16 mm Mild (class 1): 12 to 16 mm Moderate(class 2): 8 to 11 mm Severe (class 3): 3 to 7 mm Complete (class 4): <3 mm
Garci´a Pola et al, 2002 [6]	Case series	N1- 962 (group A) N2-730 (group B)	Group A :Measured distance between the cuspids of an upper canine tooth and a lower homolateral canine tooth, in maximum opening (Mmax) and when the tip of the tongue is touching the palatal papilla (Mpal) Group B : Measured distance between the incisal margin of the upper central and lower homolateral incisor in Mmax and Mpal L(%) = Mpal/Mmax	LI: Lingual mobility 51% to 100% LII: Lingual mobility 31% to 50% LIII: Lingual mobility <30%
Ruffoli et al, 2005 [7]	Case series	200	Measurements in maximal possible opening, when the tip of the tongue is touching the palatal papilla Method A (direct): length of frenulum Method B (indirect): distance between the incisal margin of the upper central and lower homolateral incisor	Method A: Normal :≥ 2 cm Mild : 1.6 to 1.9 cm Moderate: 0.8 to 1.5 cm Severe : ≤ 0.7 cm Method B: Normal: 3 2.3 cm Mild: 1.7 to 2.2 cm Moderate: 0.4 to 1.6 cm Severe: ≤ 0.3 cm

diagnosed and treated by paediatricians [9],[10].

Congenital oral adhesions may pose both esthetic and functional disturbing ailments to children. Most of them are benign, easily cured and may be treated as soon as possible in the dental office.[11]

The pathogenesis of ankyloglossia is not known. Ankyloglossia can be a part of certain rare syndromes such as X-linked cleft palate and van der Woude syndrome. Most often ankyloglossia is seen as an isolated finding in an otherwise normal child. Maternal cocaine use is reported to increase the risk of ankyloglossia three times. [12]

A significant association between frenal involvement and gingival recession has been reported in the literature.[13]

For many years, the subject of ankyloglossia has been controversial with practitioners of many specialties having widely different views regarding its significance and management. In many individuals, ankyloglossia is asymptomatic; the condition may resolve spontaneously or affected individuals may learn to compensate adequately for their decreased lingual mobility. Some individuals, however, benefit from surgical intervention for their tongue-tie. [14],[15]

Surgical techniques for the therapy of tongue-ties can be through three procedures. 1) Frenotomy is a simple cutting of the frenulum (of neonates). 2) Frenectomy is defined as complete excision, i.e., removal of the whole frenulum (at or after 6 months of age). 3) Frenuloplasty involves various methods to release the tongue-tie and correct the anatomic situation. Along with surgical intervention, revision of the frenum by LASER[16] and revision by electrocautery[17] using a local anesthetic have also been described in literature.

The case presented in this paper was treated with frenectomy and postoperatively significant improvement was noticed during speech and mastication. **[Fig.3]**

Conclusion

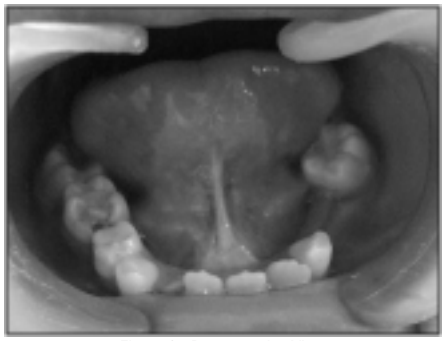

Figure 3 : Postoperative View

After surgery, the tongue could make wide range of movements including tip-elevation, grooving, and protrusion. Speech and masticatiory functions of the patient were also improved after frenectomy.

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