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Mini Review

Ankyloglossia is to be Treated Properly and in Time

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Introduction

The medical term for tongue-tie is Ankyloglossia, The piece of skin joining the tongue to the base of the mouth is called the frenulum. This is known as the lingual frenulum in medical terminology Frenulum is a general term for a small fold of integument (skin) or mucous membrane that limits the movements of an organ or part. The lingual frenulum is a tag of either skin or mucosal tissue which is attached to the inferior surface of the tongue to the floor of mouth. Ankyloglossia (tongue-tie) is the general clinical term for the short frenulum which limits the range of movement of the tongue; there is still no accurate classification for this condition [1]. Although Tongue tie is of varied degree in severity but for all practical purposes clinically it can be divided into four types, this depends on how close the frenulum is attached to the tip of the tongue

Type I Attachment of the frenulum is to the tip of the tongue, just in front of the alveolar ridge

Type II Attachment is of two or three or four mm behind the tongue tip and on the alveolar ridge.

Type III Attachment is to the mid-tongue and the middle of the floor of the mouth.

Type IV Attachment is to the base of the tongue and is thick.

The lingual frenulum length (short) and position of insertion (anterior) can lead to speech disorders and may affect postnatal feeding [2].

Tongue-tie is a birth defect that affects 3-10% of newborn babies. Incidence varies widely with associated syndromes like Opitz syndrome, orofacial digital syndrome, Beckwith-Wiedemann syndrome etc. with no racial predilection it is more common in boys than girls with male preponderance ratios varying from 1.5 to 2.6 [3].

In tongue-tie, this lingual frenulum is unusually short, tight and thick, restricting the movements of tongue. This prevents the baby from feeding properly and also causes speech problems. Clinically tongue tie is the name given to the condition arising when the frenulum is unusually thick, tight and short. The lingual frenulum length (short) and position of insertion (anterior) can lead to speech disorders and may affect postnatal feeding [4]. Genetic factors are suspected, as tongue-tie is frequently familial [5].

The Gravity of the Problem

Tongue tie is a rare but definite congenital deformity.- Etiologycally during early development, the tongue is fused to the floor of the mouth. In the embryological development the tongue gets free, with the frenulum left as the only remnant of the initial attachment. Tongue-tie is the result of this short fibrous lingual frenulum and is often blamed for slow speech development. Child who have real limitation of movement as a result of tongue tie have a history of difficult milk feeding as well because it adds to the baby's difficulties in taking the breast with poor protractility and severe limitation of the tongue movement resulting in inability to suck. If the tongue-tied infant cannot maintain the tongue over the lower

gum during sucking, the "phasic bite reflex" (chewing) is triggered [6]. This chewing motion is sufficient to transfer milk from the bottle, but is clearly problematic at breast, because breastfeeding requires well-defined peristalsis from the front to the back of the tongue as well as tongue-palate synchronization. Some tongue-tied infants cannot even manage a bottle.

Ankyloglossia is a common congenital anomaly that is usually detected soon after birth. It is characterized by partial fusion or in rare cases, total fusion of the tongue to the floor of the mouth due to an abnormality of the lingual frenulum which connects a moveable part to a fixed part and stabilizes the part from undue movement it stabilizes the base of the tongue without interfering with the tongue tip movement. In ankyloglossia, this lingual frenum has an anterior attachment and may be unusually short causing virtual adhesion of the tongue tip to the floor of the mouth therefore it is a physical defect. Tongue is the main organ for speech. If this tissue short, its mobility is affected resulting in difficulty in speaking. This cord like tissue that extends from the mid-portion of the floor of the mouth to the midline of the inferior surface of the tongue blade. This tissue is considered important for speech as it is assumed to give mobility to the tongue. Tongue-tie or ankyloglossia refers to a condition where this tissue is short, thereby restricting tongue free movement Ankyloglossia (tongue-tie) limits the range of motion of the tongue, impairing the ability to fulfill its functions. But if a child can protrude his tongue beyond the lower lip and elevate his tongue to touch the upper lip with his mouth half open or the tip of the tongue is able to protrude outside the mouth without clefting then probably the child will have no difficulty in speaking Interestingly, it is the function not the shape that determines speech ability.

Current Trends in the Early Treatment of the Problem

Earlier tongue tie has been described as a myth of hoary antiquity but the condition is not entirely mythical although surrounded by an aura of superstition and old wives' tales". In the past practicing physicians were taught that treatment of tongue-tie, (ankyloglossia) is an outdated concept - a relic of times past but current trends is the early treatment of the problem to avoid complications such as feeding problems, refusal of breast feeding, speech difficulties such as inability of proper pronunciation of many alphabets, vowels, delay in speech or speech- usually sounding interdental because of the restricted movement of the tip. Tongue-tie has emerged as a recognized cause of breastfeeding difficulties and a very easily corrected one. Approximately 25% of newborns with ankyloglossia have feeding problems, as the child grows older, there may be difficulty in moving a bolus in the oral cavity and clearing food from the sulci and molars. This leads to chronic halitosis and dental decay or dentition- causes a pulling effect on the gingiva away from the teeth and even cosmetically it may look abnormal and tongue has a forked or serpent look.

Clinical Assessment

The clinician should first have inspection of the tongue and then evaluation of its functions inspection should include tongue's appearance when it is lifted as the infant cries or tries to extend the tongue. While lifting, the frenum should be palpated and its elasticity determined attachment of the frenum to the tongue should normally be approx. 1cm posterior to the tip. Tongue tie can vary widely depending on the length of attachment of the frenulum in some babies it extends to the tip of the tongue. The thickness and elasticity of the frenulum and its effect on tongue movements should be assessed because the dictum is to be able to speak properly with good pronunciation one must have a free tongue movement, the tip of the tongue should particularly be free enough to lift and touch the roof of mouth in pronouncing many alphabets especially vowels. Therefore any speech difficulties especially of any pronunciation in preschool age child should be evaluated.

The mother should be asked in particular about child's ability to breastfeed. Thorough evaluation should determine the adequacy of latch during feeding Assessment of range of motion of the tongue should include the degree of extension of the tongue beyond the lower dental ridge and lip, [7] elevation to palate with mouth wide open, and transverse movement from one corner of the lips to the other without twisting the tongue. Elevation seems to be the most important tongue movement for breastfeeding and should be weighted most heavily in the assessment [8].

FRENULOTOMY• Frenotomy, frenectomy, and frenuloplasty are the main surgical treatment options to release or remove an ankyloglossia.

Frenotomy is a simple procedure in which tongue-tie release only involves cutting the short, tight piece of skin that connects the underside of the tongue to the floor of the mouth but it should be carried out only by those who have been trained in the procedure since the orifices of submandibular and lingual salivary glands open under the tongue over the floor of the mouth, therefore the dividing of the freunim should be closer to the base of the tongue rather than the floor of the mouth. At times frenuloplasty is required which is transverse cutting of frenulum and its vertical repair. Care should be taken to avoid cutting the deep lingual vein just lateral to the midline otherwise significant venous bleeding could occur also injury to the more inferiorly placed submandibular ducts in the floor of the mouth should be taken care of Complications of frenotomy include infection, excessive bleeding and injury to the salivary ducts.

Conclusion

To conclude Tongue-tie is a significant clinical entity, which when symptomatic, should be treated timely and properly to minimize the later complications of difficulty in speech and difficulty in breast feeding. This simple procedure usually resolves feeding problems straight away and brings good quality of speech.

Acknowledgement

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Conflict of Interest

No conflict of interest.

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