

EDUCATIONAL ARTICLE

Ankyloglossia: Tongue Tie

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A pediatrician on routine checkup of a newborn first detects Ankyloglossia. It can cause difficulty in speech, breast-feeding and dentition. Many babies outgrow this problem without any intervention. This creates confusion amongst treating physician and parents. This anatomic defect has little relevance to the clinical presentation. Basically it is abnormally short lingual frenulum, which is congenital in origin. Management of this congenital defect has created lot of controversy.

Incidence: - Incidence varies from 1.7% to 4.8%. This wide range in incidence explains lack of definite criteria for the diagnosis of ankyloglossia. Male / Female ratio is 3: 1, with no racial predilection. Tongue-tie is less commonly seen in adults. This congenital defect is more commonly seen with certain syndromes such as Opitz syndrome, orodigitofacial syndrome, and in association with X-linked cleft palate. As compared to children, adults have very low incidence indicating natural spontaneous elongation of frenulum linguae probably due to stretching or thinning. (1)

Clinical Presentation: - Shortness of frenulum and its clinical presentation has little correlation. Many children may not face any problem (2) but some may face host of problems, such as feeding difficulty, speech disorder, and various mechanical and social issues relat-

ed to the inability of the tongue to protrude sufficiently. (3)

Feeding difficulty: - Problems related to breast-feeding are poor sucking mechanism, sore nipples, poor infant weight gain, and early weaning. (3) Mothers of affected infants frequently report a marked improvement in breast-feeding after tongue-tie operation. Infants with ankyloglossia do not have problem with bottle-feeding, nor with handling solid foods, but does not mean we should promote bottle-feeding in those babies. Immediate nipple pain relief after frenotomy operation have been reported in children suffering from tongue-tie, in a series of 25 patients studied. (4) Poor infant latch and maternal nipple pain are frequently associated with this finding. (5) In one of the studies 88% had difficulty latching, 77% of mothers experienced nipple trauma, and 72% had continuous feeding cycle. 64% of the babies shown good improvement after division of tongue-tie. (6) Tongue tie is a treatable cause of breast-feeding failure in infants (7)

Effect on speech: - In some children tongue-tie contributes to speech problems. Some children do develop compensatory mechanisms and others improve with speech therapy. Ankyloglossia per se is not a cause for speech delay. They have only articulation difficulties

for certain speech sounds. (8) When present, severity of articulation problem may vary in affected individuals. It may be severe to be noticed even in single words or it may be mild enough to be noticed in some sentences. Some children with ankyloglossia develop normal speech, and compensate for limited tongue-tip mobility without surgical repair or need for speech therapy. (9)

Mechanical and social effect: - Mechanical problem related to tongue may include difficulty in licking the lips, and sweeping the teeth free of food debris, local discomfort or cuts beneath the tongue, diastases between the lower central incisors due to pressure from tight frenulum. Other related problems are poor fit of denture in later part of life, playing a wind instrument, difficulty in kissing or licking an ice-cream cone. Almost 50% older children and adults with ankyloglossia report one or several of the above complaints. (8,10)

Diagnosis: - Diagnosis may be suggested by history and confirmed by physical examination. The frenulum may be thick and fibrous or thin and membranous, and is abnormally short, inserting at or near the tip. On protrusion the tongue may have a notch in the center or it may be heart shaped on protrusion. Tell patient to show the tongue and the mid portion of the tongue will protrude out. Child may not be able to lift the tip of tongue. Occasionally patient may have diastases or spacing of central lower incisors due to thrusting of frenulum. All the tongue movements are restricted to various degrees. Depending on the tongue movements Hazelbaker has designed a scoring system to assess the severity of ankyloglossia. (9)

Management: -When to intervene? Infants with associated breast-feeding problems, young children with characteristic articulation problems and older children and adults adversely affected by the mechanical and social manifestations of this condition. The optimal timing for surgery has not been determined. But considering the minor nature of surgery and the significant potential for speech difficulties and later social and mechanical problem, it may be appropriate to consider surgery for those children with significant ankyloglossia at any age. For young child with minimal symptoms, wait- and- watch approach along with a trial of speech therapy may be considered. (10)

Surgery: - Frenotomy or simple release of frenulum, and frenuloplasty that is release with plastic repair are the procedures commonly used. Frenotomy or simple clipping of frenulum is preferred for infants. It is a bedside procedure performed under local anesthesia. Frenuloplasty is preferred for children who are older than 1 to 2 years of age. It allows for complete release of tongue-tie. Most of the patients require brief general anesthesia. Surgical outcome is always good with proper indications. After frenuloplasty patients tongue movements are greatly improved. Child can lick his lips, can lick ice cream cone, tongue can sweep the teeth for cleaning, and child can play with wind instruments. Occasionally infection, excessive bleeding, or recurrence of ankyloglossia can complicate the frenuloplasty. (11) Careful assessment of lingual func-

tion, followed by frenuloplasty when indicated, seems to be a successful approach to the facilitation of breast-feeding in the presence of significant ankyloglossia. (12)

References:

1. Messner AH, Lalakea ML, Aby J, et al. Ankyloglossia: Incidence & associated feeding difficulties. Arch Otolaryngol. Head Neck Surg. 2000; 126: 36-9.
2. Paradise JL. Evaluation and treatment of ankyloglossia. JAMA 1990; 262: 2371.
3. Marmet C, Shell E, Marmet R et al. Neonatal frenotomy may be necessary to correct breast-feeding problems. J Hum Lact 1990; 6:117-21.
4. Dollberg S, Botzer E, Grunis E, Mimouni FB. Immediate nipple pain relief after frenotomy in breast-fed infants with ankyloglossia. J. Pediatr Surg. 2006 Sep; 41(9): 1598-600.
5. Ballard JL, Auer CE, Khoury JC. Ankyloglossia: Assessment, incidence, and effect of frenuloplasty on the breast feeding dyad. Pediatrics. 2002 Nov; 110(5): e63.
6. Griffiths DM. Do tongue ties affect breast feeding? J. Hum. Lact. 2004 Nov; 20(4): 409-14.
7. Wallace H, Clarke S. Int J Pediatr. Otorhinolaryngol. 2006 Jul; 70(7): 1257-61. Tongue-tie division in infants with breast-feeding difficulties. Int J Pediatr Otorhinolaryngol. 2006 Jul; 70(7): 1257-61.
8. Fleiss PM, Burger M, Ram Kumar H, et al. Ankyloglossia: a cause of breast-feeding problem? J Hum Lact 1996; 12: 229-32.
9. Lauren Lalakea M, Messner Anna H. Ankyloglossia: does it matter? Pediatr Clin N Am 50(2003) 381-397
10. Wright JE. Tongue-Tie. J Pediatr Child Health 1995; 31: 276-8.
11. Fletcher SG, Meldrum JR. Lingual function and relative length of lingual frenulum. J Speech Lang Hear Res 1968; 2:382-90.
12. Amir LH, James JP, Beatty J. Review of Tongue-tie - release at a tertiary maternity hospital. J. Pediatr. Child Health 2005; 41(5-6): 243-5.

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