

Partial Ankyloglossia : A Case Report with Mini Review

Dr. Rajesh Kumar¹, Dr. Sanjeev Laller², Dr. Mamta Malik³, Dr. Pooja⁴

PG Student¹, Reader^{2,3}, Dental Officer⁴, Department of Oral Medicine & Radiology^{1,2,3}, PDM Dental College & Research Institute^{1,2,3}, Bahadurgarh (Haryana), Kiriburu General Hospital⁴, Jharkhand

Abstract

Partial ankyloglossia also called as tongue tie is a rare congenital anomaly of tongue characterized by fusion between the tongue and floor of the mouth. Tongue tie produces difficulty in speech and affects speech, breast-feeding and oral hygiene. Sounds like “t,” “d,” “l,” “th,” and “s” are pronounced inaccurately by affected persons. Blanching of soft tissue during tongue protrusion of tongue and restricted tongue movements are common manifestations of tongue tie. Ankyloglossia can also be a part of certain rare syndromes. Commonly followed treatment modality of ankyloglossia is surgical correction of the lingual frenum or frenectomy. Ankyloglossia in children poses a diagnostic challenge for dentists. So this paper is written with the aim to present a case of tongue tie in 3 year old male with description of clinical significance and management.

Keywords: Partial ankyloglossia, Tongue tie, Ankyloglossia, Frenectomy

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Introduction

Tongue is one amongst the important muscular organ present in oral cavity with its one end attached and the other end free, which affects speech, position of the teeth, periodontal tissue, nutrition, and swallowing. Partial ankyloglossia, ankyloglossia or tongue tie is derived from greek word agkylos-“crooked”, glossia- “tongue”. Ankyloglossia can be divided into partial or complete ankyloglossia. It is congenital rare anomaly of tongue with male predilection characterized by partial or complete fusion of the tongue with the floor of the mouth or the lingual gingiva due to an abnormally short, mid-line lingual frenulum, resulting in restricted tongue movement, difficult speech and mastication. The prevalence of ankyloglossia in a new born is approximately 4%–5% with 3:1 male-to-female predilection. Syndromes associated with ankyloglossia includes Smith-Lemli-Opitz syndrome, orofacial digital syndrome, Beck with Weid man syndrome, Simpson-GolabiBehmel syndrome, and X-linked cleft palate with autosomal dominant or recessive trait.^{1,2,3,4}

The most common clinical presentation includes difficulty in pronunciation of the “s” sound off the incisal edge of the lower incisor instead of behind the incisive papilla. Other sounds that are difficult to produce includes “t,” “d,” “l,” and “n.” restricted tongue movements especially inability to raise tongue properly encourage infantile swallowing which produces an open bite. Gingival recession on the lingual surfaces of mandibular anterior with lower incisor deformity and malocclusion is commonly associated. Tongue tie was best classified or commonly followed classification was given by Kotlow's who classified ankyloglossia into four types depending on clinically available free tongue (protrusion of tongue). Clinically acceptable normal range of free tongue is greater than 16 mm.^{5,6,7}

Kotlow's	Classification	Tongue Protrusion
Class I	Mild ankyloglossia	(12-16 mm)
Class II	Moderate ankyloglossia	(8-11 mm)
Class III	Severe ankyloglossia	(3-7 mm)
Class IV	Complete ankyloglossia	(<3 mm).

Timely and appropriate surgical intervention and speech therapy gives best results in lesser time and is the treatment of choice. Surgical techniques routinely followed are Frenotomy (simple cutting of frenum), frenectomy (whole frenum is excised) and Frenuloplasty (various methods to release the ankylo glossia and correct the anatomic situation). The techniques can be practiced with scalpel, electro cautery and LASER. The correction of ankylo glossia at an early age reduces the risk of latent complications.^{7,8}

The purpose of this paper is to describe ankyloglossia, its clinical significance, and report a case of partial ankylo glossia in a 3 year old male child.

Case Report

A threeyear old male patient reported to department of Oral medicine and radiology with the chief complaint of difficulty in speech. Parents also reported of restricted tongue movements by child. Extra-oral examination revealed nothing significant and no facial asymmetry was observed. On intra-oral examination it was found that that patient had ankylo glossia with short and thick frenum (Figure-1), restricted tongue movements like protrusion, and lifting of the tip of the tongue and a bifid or heart shape of the anterior tip of the tongue (Figure-2) was observed during tongue protrusion. Clinical assessment of case was done for classifying the type of ankyloglossia and Kotlow's class-II type was made for the present case. Medical and family history was non-contributory. On the basis of

history and clinical examination a provisional diagnosis of partial ankylo glossia or tongue tie was made. After diagnosis the patient's parents were informed educated regarding the nature of the lesion, oral manifestations and various surgical approaches available for management. Blood examination of the patient was found within normal limits and patient was recalled next day for frenectomy, but did not returned back for surgical intervention.



Figure-1: Short and thick lingual frenum.



Figure-2: Bifid or heart shape anterior tip of tongue

Discussion

Ankyloglossia is defined as a congenital anomaly characterized by an abnormally short and thick lingual frenum, which may restrict tongue tip movements and thus affects tongue functions like speech, mastication and deglutition. This results in failure in cellular degeneration leading to longer anchorage between tongue and floor of the mouth. Partial or complete ankylo glossia does not prevent or delay the onset of speech, but interferes with articulation which is seen in present case also. Patients with ankylo glossia are unable to

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pronounce the word starting with the letters- “t”, “d”, “l”, “th” and “s”. It was seen in our reported case. Ankylo glossia can be partial or complete. Complete ankylo glossia is a condition in which there is extensive fusion of the tongue to the floor of the mouth with no or minimal tongue movements which is extremely rare. Kotlow's classified ankyloglossia into four types depending upon the clinically available free tongue (protrusion of tongue). According to Kotlow's classification present case falls under class-II category.^{9,10}

Literature revealed that frenotomy followed by speech therapy is safe and effective early intervention to ankylo glossia as it is a simple “snip” with a blunt ended scissors is usually needed with minimal bleeding. Introduction of lasers in treating ankylo glossia has multiple advantages over convention surgery as lasers use is safe, minimally invasive blood less bactericidal procedure which does not require suturing. Laser surgery has no significant postsurgical complications. Post-operative tongue exercises are important to avoid reunion and to develop new muscle movements particularly those involving tongue tip elevation and protrusion, inside and outside of the mouth. Common tongue exercises done after surgery are (1) stretch the tongue up toward then ose, then down toward the chin and repeat, (2) open the mouth widely and touch the big front teeth with the tongue with mouth still open. It is important to educate parents by giving accurate information about nature and prognosis of tongue tie cases.^{3,10,11}

Conclusion

Tongue is an important muscular organ which is crucial for speech and

mastication. Diagnosis of ankyloglossia should be made after thorough history and clinical examination. There is no place for 'wait and see' policies when the frenum has been identified and diagnosed as abnormal, and early intervention is the optimal management for fast and pleasant results.

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Events Talk

<div style="background-color: red; color: white; padding: 5px; text-align: center; font-weight: bold;">11-14</div> <p>16th Istanbul Dental Equipment & Material Exhibition Idex, Istanbul</p> <div style="background-color: red; color: white; padding: 2px 5px; text-align: center; font-weight: bold;">April 2019</div>	<div style="background-color: red; color: white; padding: 5px; text-align: center; font-weight: bold;">15-16</div> <p>Dental Mahotsav Indira Gandhi Pratishthan, Gomtinagar, Lucknow</p> <div style="background-color: red; color: white; padding: 2px 5px; text-align: center; font-weight: bold;">June 2019</div>
<div style="background-color: red; color: white; padding: 5px; text-align: center; font-weight: bold;">13-14</div> <p>3rd International Dental Lab Expo & Conference Hyderabad, India</p> <div style="background-color: red; color: white; padding: 2px 5px; text-align: center; font-weight: bold;">April 2019</div>	<div style="background-color: red; color: white; padding: 5px; text-align: center; font-weight: bold;">13-14</div> <p>Delhi Dental Show Pragati Maidan, New Delhi</p> <div style="background-color: red; color: white; padding: 2px 5px; text-align: center; font-weight: bold;">July 2019</div>
<div style="background-color: red; color: white; padding: 5px; text-align: center; font-weight: bold;">19-21</div> <p>4th International Dental Show Sunway Pyramid Convention Centre, Malaysia</p> <div style="background-color: red; color: white; padding: 2px 5px; text-align: center; font-weight: bold;">April 2019</div>	<div style="background-color: red; color: white; padding: 5px; text-align: center; font-weight: bold;">13-15</div> <p>11th International Congress of Academy of Oral Implantology Le Meridien Hotel New Delhi</p> <div style="background-color: red; color: white; padding: 2px 5px; text-align: center; font-weight: bold;">September 2019</div>
<p>International Exhibition for Medicine Bulmedica, Buldental</p> <div style="background-color: red; color: white; padding: 5px; text-align: center; font-weight: bold;">15-17</div> <div style="background-color: red; color: white; padding: 2px 5px; text-align: center; font-weight: bold;">May 2019</div>	<p>73rd Indian Dental Conference Kovalam, Thiruvananthapuram, Kerela</p> <div style="background-color: red; color: white; padding: 5px; text-align: center; font-weight: bold;">24-26</div> <div style="background-color: red; color: white; padding: 2px 5px; text-align: center; font-weight: bold;">January 2020</div>
<div style="background-color: red; color: white; padding: 5px; text-align: center; font-weight: bold;">01-02</div> <p>Karnataka Dental Jaya Mahal Palace Hotel Bengaluru</p> <div style="background-color: red; color: white; padding: 2px 5px; text-align: center; font-weight: bold;">June 2019</div>	<div style="background-color: red; color: white; padding: 5px; text-align: center; font-weight: bold;">24-26</div> <p>74th Indian Dental Conference Biswa Bangla Convention Centre, Kolkata</p> <div style="background-color: red; color: white; padding: 2px 5px; text-align: center; font-weight: bold;">December 2020</div>
<div style="background-color: red; color: white; padding: 5px; text-align: center; font-weight: bold;">07-09</div> <p>Famdent Show Mumbai Bombay Exhibition Centre, Goregaon</p> <div style="background-color: red; color: white; padding: 2px 5px; text-align: center; font-weight: bold;">June 2019</div>	<div style="background-color: red; color: white; padding: 5px; text-align: center; font-weight: bold;">09-13</div> <p>38th International Dental Show Cologne</p> <div style="background-color: red; color: white; padding: 2px 5px; text-align: center; font-weight: bold;">March 2021</div>