
ANKYLOGLOSSIA AND HIGH MAXILLARY LABIAL FRENUM: A CASE REPORT

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ABSTRACT:

Frenum is the thin mucous membrane fold connecting the lips and the tongue to the mucosa and periosteum. Ankyloglossia or tongue tie is often associated with short, thick lingual frenum resulting mainly in limited tongue movements along with other complications. Similarly, high maxillary labial frenum often pulls the gingival margin during the lip movements resulting in recession, recurrent gingival inflammation and other social and mechanical complications. This case report will highlight about the unique occurrence of high maxillary labial frenum and lingual ankyloglossia in the same patient and its surgical management to manage the complications.

Key words: Frenum, Labial frenum, Ankyloglossia.

INTRODUCTION:

Frenal attachments are thin mucous membrane folds with enclosed muscle fibers that attach the lips and/or tongue to the alveolar mucosa and underlying periosteum.^[1] Although, several frena are usually present within the oral cavity, the most notably are the maxillary and mandibular labial frenum, and the lingual frenum with their primary function of providing stability of the upper and lower lip and also the tongue.^[1-3] However, their role in mastication is still unknown. Abnormal or aberrant frenal attachments are also associated with a variety of syndromes.

A thick and high attached maxillary labial frenum is commonly regarded as contributing etiologic factor for several situation such as pulling of gingival margin

during lip movements, fostering dental plaque accumulation, increasing the rate of progression of periodontal recession, midline diastema, and also upper jaw delayed movement etc.^[1,3] Ankyloglossia or tongue tie is the congenital anomaly characterised by short thick lingual frenulum resulting in reduced mobility of the tongue.^[3] It has also been associated with problems in breastfeeding among neonates, dental caries, malocclusion, gingival recession, and restricted alveolar bone growth in growing children etc.^[3-5] In most of the reported cases tongue tie and high attached maxillary labial frenum were seen in separate patients except for syndromes. This paper will highlight about the occurrence of high maxillary labial frenum and lingual ankyloglossia in the same patient and its effective management to cope up with the complications.

CASE DETAIL:

A male patient aged 14 years reported to the outpatient department with chief complaint of difficulty in swallowing and tongue movements. The patient was accompanied by his mother and she reported that he also had difficulty in phonation of certain words since childhood. Patient's general history was found to be non-contributory by nature. On examination, patient's oral hygiene was found to be good with little overlapping of lower anterior teeth. The presence of short lingual frenum resulting in ankyloglossia with limited tongue movements and presence of V shaped notch at the tip of the tongue were noted within the oral cavity (Fig.1 & Fig.2). However, during the examination attachment of maxillary labial frenum was found to be high with positive frenum pull test (Fig.3). The need for surgical correction of ankyloglossia or tongue tie and the high upper labial frenal attachments for betterment were explained to the patient's family.

The ankyloglossia or short lingual frenum was surgically excised after achieving local anaesthesia with the help of scalpel and haemostat (Fig.4, Fig.5). The area was carefully sutured after achieving adequate haemostasis (Fig.6). The patient was advised to do the tongue movements on a regular basis. The patient was advised to follow up the proper post-operative instructions and was also referred to the speech therapist for better phonetics which were found to be improved on subsequent

visits with increased tongue movements (Fig.7, Fig.8).The upper labial frenum also was excised with the help of scalpel by following the proper surgical method and the area was sutured after achieving proper haemostasis (Fig.9).The patient showed improved results on post-operative visits(Fig.10 & Fig.11).

DISCUSSION:

Frenal attachments are basically the cords of mucosal tissue beneath the tongue and in the labial and buccal vestibules, which during the intrauterine development, apparently guide the growth of various structures of the oral apparatus.^[1] After birth, they are largely redundant although they seem to help in the positioning of primary teeth.^[1,3] Ankyloglossia is defined as a limitation of the possibilities of the protrusion and elevation of the tip of the tongue due to either the shortness of the frenulum or the genioglossus muscles or both.^[4] Although, it is a congenital anomaly with a prevalence of about 5% and male: female ratio 2:1, it could be seen in different ages with specific indications for treatment.^[3,5] Ankyloglossia may be syndrome associated, but commonly it has got a non-syndromic presentation. Maxillary labial frenum usually extends over the alveolar process in infants and forms a raphe that reaches the palatal papilla.^[1,3] Through the growth of alveolar process along with the teeth eruption, the attachment generally assumes the adult configuration.^[3] Failure of which results in abnormal mucosal attachment such as high maxillary labial frenum.

Although, the maxillary labial frenum presents with varied clinical attachments such as mucosal, gingival, papillary, papillary penetrating. A high frenal attachment usually causes tension during lip movements, pulling the gingival margin away from the tooth surface resulting in blanching of the gingival margin (positive frenum pull test). Abnormal or aberrant frenal attachments may also be associated with variety of clinical syndromes such as Ehlers Danols syndrome, Ellis van Creveld syndrome etc.^[1,2] Whereas, ankyloglossia is defined as a limitation of the possibilities of the protrusion and elevation of the tip of the tongue due to either the shortness of the frenulum or the genioglossus muscles or both.^[4] It may result due to failure in cellular degeneration leading to a much longer anchor between the floor of the mouth and tongue.^[6] Most of the patient's with ankyloglossia are clinically asymptomatic with limited tongue movements resulting in difficulty in breast feeding in neonates, dental caries, altered jaw development as well as difficulty in phonations of certain words such as s, z, t, d, l, j, zh, ch, th, dg etc.^[2,6] Most of the tongue-tie presents as partial ankyloglossia from tongue tip to the base of tongue with variable degrees of classification and classification of ankyloglossia based on the degree of limitation of lingual mobility due to the hypertrophic lingual frenulum.^[7,8] Both ankyloglossia and high labial frenum can be observed in various ages with varied clinical presentations and often require surgical

corrections. Simple surgical excision of frenum or frenectomy is the most effective way of management. However, a frenum with wide base might be effectively managed by simple modification of the technique such as Z plasty and a localized vestibuloplasty with secondary epithelization etc.^[1] Frenotomy or simple cutting of the frenulum and frenuloplasty i.e. various methods to release the tongue-tie and correct the anatomic situation also used by the clinician depending upon the situation but electro cautery and laser might also be used in effectively manage these situations. Speech therapy, orthodontic interventions, and proper muscular exercises are also effective in some cases to improve the phonetics and other complications such as reduced tongue movements, difficulty in placement of brush, cleaning of foods, malocclusion, reduced growth of the arch etc. Although, delay in language acquisition was also noticed in some cases after frenum excision, much motivation is required to boost progress toward developing proper oro-motor skills.^[3,5]

In this present case, a 14 year old male patient reported to the department with difficulty in swallowing, tongue movements and phonation of certain words. On examination, partial ankyloglossia or tongue-tie was detected along with a high maxillary labial frenum resulting in blanching of marginal gingiva of upper anterior teeth. After taking proper medical history, which was found to be non-contributory, surgical excision of both the

frenum were carried out under local anaesthesia with the help of scalpel. Patient was followed up post-operatively with no history of recurrence. The patient was advised for speech therapy to improve the phonetics. Although, most of reported cases present ankyloglossia and high labial frenum in separate patients, this case presents unique presentations of both ankyloglossia or tongue tie and high maxillary labial frenum in the same patient.

CONCLUSION:

Although, the high frenal attachments and tongue tie or ankyloglossia are usually incidental findings during routine dental examinations early detection and management is necessary to effectively manage the future complications. The further investigations regarding the genetic predisposition of the unique occurrence of high maxillary labial frenal attachment and tongue tie in the same patient will obviously enlighten more information in near future.

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FIGURES:



Fig.1.Short lingual frenum resulting in ankyloglossia or tongue -tie



Fig.4.Surgical excision of the frenum was carried out with the help of scalpel



Fig.2.Short lingual frenum resulting in reduced tongue movements



Fig.5.Increased tongue movements with V shaped notch noted at tongue tip



Fig.3.High maxillary labial frenum was also noted during examination



Fig.6.Suture given



Fig.9. Upper labial frenectomy was done



Fig.7.Post-op one week view



Fig.10.Post-op one week view



Fig.8.Post-op one month view



Fig.11.Post-op one month view