INTRODUCTION

The frenulum of tongue (or lingual frenulum) is a small fold of mucous membrane extending from the floor of mouth to the midline of underside of the tongue.\(^1\) This usually consists of mucosa, dense fibrous connective tissue, and occasionally, superior fibers of the genioglossus muscle.\(^2\)

Initially the frenum is attached close to the tip of the tongue. As the tongue continues to develop, frenulum cells undergo apoptosis, retracting away from the tip of the tongue, and increasing the tongue’s mobility. During early gestation (as early as 4 weeks) the lingual frenulum serves as a guide for forward growth of the tongue. After birth, the tip of the tongue continues to elongate, giving the impression that the frenum of some previously tongue-tied infants stretch with age and growth. In reality the tongue often just grows beyond the frenulum, although some do also stretch and/or rupture after mild accidents. Many others continue to cause problems throughout life, unless corrected.\(^1\)

Normally, ankyloglossia occurs in approximately 1.7% of all neonates without preference for either gender and is reported to be transitory. With growth the frenum lengthens and normal function is established.\(^3\)

Persisting ankyloglossia associated with the absence of the inferior labial and lingual frenulum was found to be associated with classical and hypermobility types of Ehlers-Danlos syndrome.\(^1\)

An abnormally short lingual frenum results in speech difficulties, development of recession, and interferes with the stability of mandibular denture.\(^4\)

In the anterior lingual region many prosthodontists extend the flange of the lower denture to the sublingual folds and utilize the inherent elastic recoil of the soft tissues in the area to develop positive retention upon the anterior part of the denture base. The presence of a short lingual frenum may render impossible this use of the anterior

ABSTRACT:

Ankyloglossia, or tongue-tie as it is more commonly known, is said to exist when the inferior frenulum attaches to the bottom of the tongue and subsequently restricts free movement of the tongue. The implication of an abnormal frenum is that it could indirectly produce malpositioning of the teeth, cause abnormalities in speech, lead to periodontal problems such as recession and interfere with the construction of the mandibular denture. Such cases necessitate lingual frenectomy as a pre-prosthetic procedure.

The lingual frenum is interposed between a highly mobile tongue, a richly vascular floor of mouth and ducts of the submandibular glands. Therefore, certain precautions need to be taken while performing a lingual frenectomy. This article emphasizes on the finer aspects of lingual frenectomy procedure.

This is a case report describing the procedure of lingual frenectomy to aid in prosthetic rehabilitation of a 65 year old, edentulous, male patient, with an abnormal lingual frenum attachment.

Key words: Ankyloglossia, tongue - tie, edentulous patient, pre-prosthetic procedure, lingual frenectomy.
lingual region for prosthetic purposes. Movement of the tongue can easily unseat the denture if the frenum attachment to the lingual aspect of the mandible is close to the crest. This can occur even with a frenum of relatively normal length. A frenectomy is indicated when tension is seen in the frenum as the patient attempts to touch the incisive papilla with the tip of the tongue while the mouth is partially open.

**Case Report**

A 65 year old male patient came to the Department of Prosthodontics, KLE VK Institute of Dental Sciences, Belgaum, wanting to get his missing teeth replaced. Clinical examination revealed edentulous maxillary and mandibular arches; and a high lingual frenum. The patient was referred to the Department of Periodontics to relieve this lingual frenum as it would interfere with the mandibular denture retention.

The treatment options included frenotomy and frenectomy. Frenectomy is complete removal of the frenum, while frenotomy is incision of the frenum. Frenectomy was chosen over simple incision due to the following reasons:

1. In a classic paper in 1954, Gottsegen discussed the need for a broader intervention than a simple incision detaching the frenum in four situations. Two of these criteria were fulfilled in this case:
   - “Cases where a shallow vestibule exists when the reflected folds of mucosa making up the frenum spread widely from its edge so that the mucobuccal fold on either side of the frenum approaches the gingival side”
   - “Cases where muscle is present in the frenum and/or adjacent attachments.”

2. Schuller and Schleuning, 1994, found that simple incision of frenulum may result in the development of scar tissue and further restrict tongue movement.

**Surgical procedure**

Bilateral local infiltration was given in the lingual mucosa. An infiltration was also given into the substance of the tongue at the tip of the tongue.

A traction suture was placed at the tip of the tongue with which the tongue was firmly retracted.

The first line of horizontal mattress sutures, using 3-0 silk suture, was placed just below the ventral surface of the tongue. Three sutures were placed extending from the origin to the insertion of the frenum on the ventral surface of the tongue. A second line of sutures was placed several millimeters below the first one. This second line of sutures was placed loosely and superficially through the mucosa.

The frenum was held with a hemostat. A #15 blade was used to sever the frenal attachment by a transverse incision above and below the area held by the hemostat.

As the area was pre-sutured there was minimal bleeding. No dressing was placed. The patient was put on analgesics and antibiotics to manage pain and prevent infection.

Sutures were removed after 1 week, at which time healing was almost complete. Patient was referred back to the Department of Prosthodontics, following complete healing after 1 month, for the construction of complete dentures.

**Discussion**

The diagnosis of ankyloglossia is given based upon the observation of lingual mobility; no current specific indications for surgery are emphasized in either the dental or the medical literature reviewed. Hence, the indication of lingual frenectomy in dentulous patients is not clear cut. However, after the loss of teeth, this frenal attachment interferes with denture stability. Each time the tongue is moved, the frenal attachment is tensed and the denture is dislodged. Therefore, in these patients lingual frenectomy is clearly indicated.

According to Laskin, the area can be anesthetized by giving bilateral lingual nerve block plus infiltration for hemostasis or local infiltration alone. Hence, the area was anesthetized by local infiltration prior to surgery. A traction suture was placed through the tip so that the tongue could be elevated to tense the frenum.

Suturing was done prior to the incision for the following reasons:

- Post operative suturing is difficult along the ventral border of the tongue due to the presence of the muscles of the tongue and at the floor of the
the mouth due to the presence of loose connective tissue which opens up exposing a large wound.

2. To achieve adequate hemostasis.
3. To mark the area of incision to avoid injury to the submandibular ducts and the blood vessels in the floor of the mouth.

The second line of sutures was placed loosely to prevent hematoma formation; and superficially to prevent constriction of the Wharton's ducts. Silk sutures were used as they have the best handling properties; and knot easily and securely. The advantage of a transverse incision over a vertical incision is that the resulting scar is situated on the undersurface of the tongue, well away from the area that concerns the prosthodontists.

Periodontal dressing was not placed due to the following reasons:
1. Poor retention of the dressing at the site.
2. Loe and Silness, 1961, showed that a dressing has little influence on healing provided the area is kept clean.
3. Greensmith and Wade, 1974, found that the use of a periodontal dressing caused more pain and swelling.

CONCLUSION

Pre-prosthetic surgery is indicated in various situations such as inadequate vestibular depth, defects in ridge morphology and abnormal frenal attachment.

Lingual frenectomy procedures pose a special challenge when compared to labial frenectomy procedures due to the hypermobility of the tongue; and the proximity to the submandibular ducts and the richly vascular mucosa of the floor of the mouth. However, an adequately relieved lingual frenum greatly aids in mandibular denture construction.

REFERENCES