

# LINGUAL FRENULUM SURGERY IN THE TREATMENT OF ANKYLOGLOSSIA: CASE SERIES

ANKİLOGLOSSİ TEDAVİSİNDE LINGUAL FRENULUM  
CERRAHİSİ: OLGU SERİSİ  
Dil ve Konuşma Terapisi

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## Özet

Ankiloglossi, dil bağ olarak bilinen ve lingual frenulumun konjenital anomalisinden kaynaklanan, dil hareketlerinin kısıtlanmasıyla karakterize bir durumdur. Lingual frenulum, dilin alt yüzeyinin orta hattı boyunca uzanan ve dili ağız tabanının mukozasına bağlayan ince bir fibro-mukozal plika olup, dilin stabilitesinin sağlanması ve hareketlerinin sınırlandırılmasında önemli rol oynar. Ankiloglossinin temel klinik bulgusu, özellikle protrüzyon ve elevasyon yönlerinde belirgin olan dil hareket kısıtlılığıdır. Bu durum, konuşma, yutkunma ve oral hijyen gibi fonksiyonel aktivitelerde çeşitli zorluklara neden olabilir. Bu olgu serisinin amacı, ankiloglossi tanısı alan iki genç erişkin hastada gerçekleştirilen lingual frenektomi işleminin klinik sonuçlarını değerlendirmektir. Çalışmada, cerrahi müdahalenin konuşma yeteneği, dil hareketliliği ve genel ağız fonksiyonu üzerindeki etkileri incelenmiştir. Ayrıca, erken tanı ve uygun cerrahi yaklaşımın fonksiyonel iyileşme sürecindeki önemine dikkat çekilmesi hedeflenmiştir.

**Anahtar kelimeler:** Anormal frenulum, ankiloglossi lingual frenulektomi.

## Abstract

Ankyloglossia, commonly known as tongue-tie, is a condition characterized by restricted tongue movement resulting from a congenital anomaly of the lingual frenulum. The lingual frenulum is a thin fibro-mucosal fold that extends along the midline of the underside of the tongue and attaches it to the floor of the mouth, playing a crucial role in stabilizing and limiting tongue movement. The main clinical feature of ankyloglossia is restricted tongue mobility, particularly in protrusion and elevation. This limitation can lead to various functional difficulties, including speech, swallowing, and oral hygiene problems. The aim of this case series is to evaluate the clinical outcomes of lingual frenectomy performed in two young adult patients diagnosed with ankyloglossia. The study examines the effects of the surgical intervention on speech ability, tongue mobility, and overall oral function. Additionally, it aims to emphasize the importance of early diagnosis and an appropriate surgical approach in achieving optimal functional recovery.

**Keywords:** Abnormal frenulum, ankyloglossia lingual frenectomy

## Introduction

Ankyloglossia, commonly referred to as “tongue-tie,” is a congenital anomaly of the lingual frenulum characterized by restricted tongue function [1]. The lingual frenulum is a thin fibro-mucosal fold that extends along the midline of the underside of the tongue, attaching it to the mucosa of the floor of the mouth. This structure plays an important role in stabilizing the tongue and limiting its range of motion [2].

In some individuals, the lingual frenulum fibers extend to the tip of the tongue, significantly restricting its physiological movements. In such cases, individuals with ankyloglossia are unable to protrude their tongue beyond the incisal edge of the mandibular anterior teeth or touch the palatal vault [3]. Clinically, the most prominent finding is limited tongue mobility. However, ankyloglossia is often accompanied by various functional impairments, including feeding difficulties, weak sucking reflex in infants, orthodontic anomalies, periodontal problems related to tooth alignment, speech disorders, swallowing difficulties, and respiratory issues [4].

In a study conducted by Messner and Lalakea, the prevalence of ankyloglossia was reported to range between 2% and 4.8% [5]. Furthermore, this anomaly was found to occur more frequently in males than in females, although no significant racial predisposition was identified.

Treatment options for ankyloglossia include partial incision of the frenulum (frenotomy), repositioning (frenuloplasty), and complete excision (frenectomy). However, current literature provides insufficient scientific evidence to demonstrate the superiority of any particular technique over others in the surgical management of ankyloglossia [6].

Lingual frenectomy is generally performed using a scalpel, electrocautery, or soft-tissue laser. Although the procedure appears to be relatively simple on the surface, the lingual frenulum's rich neurovascular anatomy presents a potential risk for complications [7]. In this case report, two patients diagnosed with ankyloglossia who successfully underwent lingual frenectomy are presented.

## Case Report

### Case 1

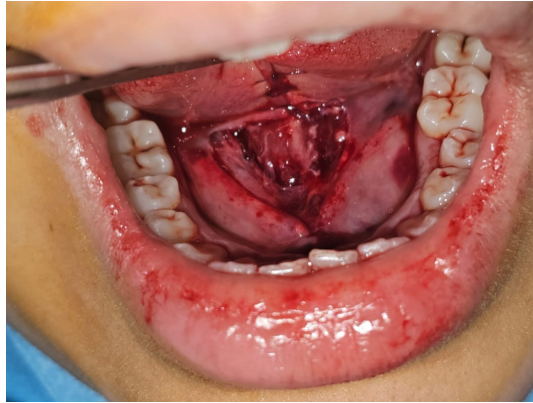
A 20-year-old female patient presented to the Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, Dicle University, with complaints of limited tongue movement and difficulty in pronouncing certain words and letters. A detailed medical history revealed no evidence of any systemic disease. Intraoral examination demonstrated a high lingual frenulum attachment, which prevented the patient from placing her tongue behind the mandibular incisors or protruding it beyond the oral cavity. Clinically, this anatomical condition was determined to contribute to an infantile swallowing pattern (Figure 1).



**Figure 1**

Intraoral view of high lingual frenulum attachment showing ankyloglossia.

Following a comprehensive examination, informed consent was obtained from the patient, and a lingual frenectomy was indicated. Prior to the procedure, bilateral lingual nerve block and local infiltrative anesthesia were administered. The frenulum was stabilized with a hemostat, and while carefully preserving the lingual nerve and its branches, two incisions were made along the upper and lower margins of the hemostat using a #15 scalpel blade to excise the frenulum (Figure 2).



**Figure 2**

View of the frenulum excised through two incisions made along the upper and lower margins of the hemostat.

Blunt dissection was then performed, and the wound edges were approximated without tension. The incisions were closed using a continuous simple suture technique with 4-0 Vicryl suture material (Figure 3).



**Figure 3**

Suturing of the wound using a simple continuous technique following blunt dissection.

## Case 2

A 35-year-old male patient presented to our department with complaints similar to those described in Case 1, including restricted tongue movement and difficulty in pronouncing certain sounds. The patient had no relevant systemic disease. Intraoral examination revealed a high lingual frenulum attachment consistent with ankyloglossia (Figure 4).



**Figure 4**

Intraoral view of high lingual frenulum attachment showing ankyloglossia.

Following clinical evaluation and informed consent, lingual frenectomy was indicated. The same surgical protocol and postoperative management used in Case 1 were applied in this case. Briefly, the frenulum was stabilized with a hemostat, excised through two incisions along its upper and lower margins, and the wound was released by blunt dissection. Closure was achieved with continuous simple sutures using 4-0 Vicryl (Figures 5–6).



**Figure 5**

View of the frenulum excised through two incisions made along the upper and lower margins of the hemostat.



**Figure 6**

Suturing of the wound using a simple continuous technique following blunt dissection.

Due to the strong muscular structure and high mobility of the tongue, a multifilament Vicryl suture material with high mechanical durability and knot security was preferred. During the surgical procedure, meticulous dissection was performed with careful attention to the branches of the lingual nerve, the regional vascular structures, and the ducts of the submandibular salivary glands.

In both patients, postoperative instructions were provided, advising them to protect the surgical site from trauma and to avoid activities that could cause bleeding. In the postoperative period, analgesic, anti-inflammatory, and antibiotic therapy was prescribed (Dexketoprofen 25 mg tablet and Amoxicillin/Clavulanic acid 1000 mg film tablet, twice daily for one week; additionally, 0.12% chlorhexidine gluconate mouth rinse for two weeks). The purpose of antibiotic therapy was to prevent surgical site infections associated with the high bacterial load of the oral cavity and to support optimal healing. The sutures were removed at the postoperative control visit, 10 days after surgery.

In both patients, no postoperative complications such as numbness, bleeding, or infection were observed. The patients reported a marked improvement in tongue mobility and noted clearer pronunciation of letters such as “t,” “d,” “r,” “n,” and “l.” No complications were detected during the postoperative and six-month follow-up examinations, and the healing process was observed to be successfully completed.

## Discussion

Ankyloglossia is a congenital anomaly characterized by difficulties in speech and swallowing functions [1]. Although some studies have suggested that ankyloglossia may have a hereditary component, the phenotypic effects and penetrance of the genetic factors associated with this condition have not yet been fully elucidated. Further molecular and clinical studies are needed to better understand the etiopathogenesis of ankyloglossia and to clarify its underlying genetic mechanisms [8].

It is generally accepted that ankyloglossia can negatively affect speech function by restricting tongue movement. Messner et al. [9] reported that 71% of children with ankyloglossia experienced speech difficulties associated with limited tongue mobility.

In both of our cases, speech difficulties and challenges in articulating certain sounds were observed, consistent with findings reported in the literature. Following frenectomy, a marked improvement in tongue mobility and speech clarity was achieved. The effectiveness of frenectomy in reducing speech and feeding problems associated with tongue-movement restriction due to ankyloglossia has been demonstrated in numerous studies [3].

Although lingual frenectomy is generally considered a simple surgical procedure, it remains susceptible to various intraoperative and postoperative complications due to the complex anatomical structure of the lingual frenulum and its close proximity to surrounding neural and vascular structures. In a review by Varadan et al. [7], complications associated with lingual frenectomy were reported to include hemorrhage, retention cyst, ranula formation, sublingual hematoma, infections of the sublingual and submandibular spaces, as well as numbness or paresthesia of the tongue and adjacent tissues. However, no complications were observed in either of our cases.

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