Labial Frenotomy for Symptomatic Isolated Lip-tie

J. Benjamin McIntire MD[1], Ashley Halbert MSIV, Shawn D. Abreu MD, Harold Pine MD, FAAP, FACS[1]
[1]Department of Otolaryngology – University of Texas Medical Branch, Galveston, Texas

Abstract

Proper latching is crucial for successful breastfeeding. A thickened maxillary labial frenulum, or lip-tie, may impede an infant's ability to latch onto a mother's breast. This condition is quickly and easily corrected with labial frenotomy. We present a case series of infants with isolated lip-tie and breastfeeding difficulty that were treated with labial frenotomy. Subsequently, these infants demonstrated weight gain and improved breastfeeding. These findings may implicate lip-tie as an under-recognized cause of breastfeeding difficulty, and furthermore they suggest that labial frenotomy is an effective treatment in these patients.

Background

Lip-tie was first described by Griffith in 1904, and over the years it has gained acceptance for its contribution to breastfeeding difficulty [1,2]. With a lip-tie, the newborn's upper lip is prevented from flanging outwards, which may interfere with the normal infant sucking mechanism [2,3,4]. The diagnosis of lip-tie is made by physical examination. To better characterize this anomaly, Kotlow has created a lip-tie classification scale, with Class II-IV lip-ties being implicated in problematic breastfeeding. While frenotomy has been shown to improve feeding and decrease maternal pain with feeding in infants with tongue-tie and in infants with tongue-tie and lip-tie [4,5,6,7], there is little research in the extant literature to support the positive effects of isolated labial frenotomy.

Table 1. Kotlow lip-tie classification scale [3]

Class I	slightly thickened maxillary labial frenulum
Class II	frenulum that inserts at the junction of the free and attached gingival margins
Class III	frenulum that inserts between the areas where the maxillary central incisors will erupt
Class IV	frenulum that wraps around the superior alveolar ridge and inserts into the hard palate

Results

Case #	Age at surgery (weeks)	Time to follow up (weeks)	Weight change (kg)	Feeding improved
1	3	2	0.574	yes
2	1	4	1.27	yes
3	1	1	0.41	yes
4	7	1	0.355	yes
5	4	2	0.256	yes
6	12	1	0.096	yes
7	6	6	1.22	yes

Table 2. Study patient data from 9/1/2014-1/19/2016

Figure 1. Preoperative

Figure 2. Immediately postoperative

Figure 3. Postoperative day 1

Figure 4. Postoperative day 30

Methods

Data from 7 patients with lip-tie and breastfeeding difficulty were collected retrospectively from a tertiary care hospital. Patients greater than 3 months of age and those with concomitant tongue-tie were excluded from the study. The patients ranged in age from 1 to 12 weeks at time of surgery. In this study, frenotomy was conducted in the operating room under either local anesthesia or general anesthesia via facemask. Surgical technique involved manually retracting the upper lip cephalad and using monopolar electrocautery to release the frenulum until a diamond-shaped defect was evident. Interval to follow up ranged from 1 to 6 weeks. At follow up, patient weight was recorded and mothers were asked about the quality of breastfeeding.

Conclusion

Lip-tie is a necessary component of the differential diagnosis in an infant with breastfeeding difficulty. Labial frenotomy with monopolar electrocautery is a highly effective treatment that can result in infant weight gain and subjectively improved breastfeeding. In our study, this treatment had no complications and yielded a subjective improvement in maternal satisfaction with breastfeeding and objective weight gain in all patients. Because Otolaryngologists are often one of the first specialists to evaluate a pediatric patient, such practitioners should know how to recognize, characterize, and treat this problem. Perhaps most importantly, this study demonstrates that affected infants may benefit from efficient diagnosis and treatment of their isolated lip-tie.

Future Direction

A larger study population and prospective data are needed to increase the power and application of our observations. However, this may be difficult due to our observed low incidence of isolated lip-tie. Additionally, more thorough documentation would allow correlation between breastfeeding difficulty, severity of lip-tie based on the Kotlow scale, and treatment efficacy. Finally, the development of a pre and post-intervention questionnaire would allow for analysis of additional objective metrics.

References

[1] Griffith F. Lip-Tie. Ann Surg 1904; 39(3): 433.

[2] Wiessinger D, Miller M. Breastfeeding Difficulties as a Result of Tight Lingual and Labial Frena: A Case Report. J Hum Lact 1995; 11: 313-16.

[3] Kotlow LA. Diagnosing and Understanding the Maxillary Lip-tie (Superior Labial, the Maxillary Labial Frenum) as it Relates to Breastfeeding. J Hum Lact 2013; 29: 458-464.

[4] Geddes DT, Langton DB, Gollow I, et al. Frenulotomy for Breastfeeding Infants With Ankyloglossia: Effect on Milk Removal and Sucking Mechanism as Imaged by Ultrasound. Pediatrics 2008; 122: 188-194.

[5] O'Callahan C, Macary S, Clemente S. The effects of office-based frenotomy for anterior and posterior ankyloglossia on breastfeeding. Int J Pediatr Otorhinolaryngol 2013; 77(5): 827-32.

[6] Pransky SM, Lago D, Hong P. Breastfeeding difficulties and oral cavity anomalies: The influence of posterior ankyloglossia and upper-lip ties. Int J Pediatr Otorhinolaryngol 2015; 79: 1714-1717.

[7] Ochi JW. Treating Tongue-Tie: Assessing the Relationship Between Frenotomy and Breastfeeding Symptoms. Clinical Lactation 2014; 5(1): 20-27.