Frenotomy and breastfeeding outcomes in infants with ankyloglossia

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Introduction

This systematic review explores whether frenotomy (lingual frenum division) improves breastfeeding outcomes for newborn infants with ankyloglossia. Ankyloglossia, also called tongue-tie, is a congenital anomaly whereby the baby has an unusually short or thick lingual frenulum. This condition can restrict breastfeeding by limiting tongue movement (NICE, 2005).

Perceived feeding problems associated with ankyloglossia include:
- Difficulties with latch and suck
- Maternal nipple pain

Reported benefits following frenotomy include:
- Improved latch
- Increased milk intake
- Decreased maternal pain and discomfort

Debate exists surrounding the efficacy of frenotomy, and whether positive breastfeeding outcomes are genuine and long-term or merely a placebo.

Methods

Search Strategy and Reliability

- Search query developed in consultation with a clinical partner
- 7 databases searched for relevant literature
- Articles screened for inclusion or exclusion by 3 reviewers with 93% reliability

Inclusion Criteria

- Breastfed, full-term infants with ankyloglossia

Exclusion Criteria

- Infants who were bottle-fed, premature, or had craniofacial, neuromuscular, or other syndromic anomalies

Final Selection

Title and abstract review resulted in 65 relevant articles, including several recent systematic reviews. We opted to focus on articles published after August 2014 with an evidence level of 3 or higher, as based on Cincinnati Children’s Hospital’s evidence level appraisal system (including systematic reviews, RCTs, CCTs, and prospective cohort studies).

Quality of Research

Following appraisal of the research, our team found 1 good quality systematic review, 2 lesser quality systematic reviews, and 1 lesser quality controlled clinical trial (CCT). After consideration, the CCT was excluded from the review due to poor research design and a lower evidence rating.

Outcomes of Interest

Studies in the systematic reviews we analyzed used a variety of subjective and objective tools to measure breastfeeding efficacy. Using either the mother’s responses or a third-party observer, objective measures like the IBFAT, LATCH, and SF-MPQ gauged:
- The infant's latch
- Audible swallowing
- Nipple type

All studies also used subjective measures of the mother’s experience to rate her perception of breastfeeding and pain. Studies used the BSES or unique questionnaires to solicit subjective information. No two studies used the exact same outcomes of interest nor manner of collecting breastfeeding efficacy information.

Summary of Systematic Reviews

Author, Title

Frenotomy and breastfeeding outcomes in newborns with tongue tie: a systematic review

Power & Murphy

Surgical tongue tie and frenotomy in infants with breastfeeding difficulties: achieving a balance

Barnes & Lane

The efficacy of frenotomy in improving breastfeeding in newborn babies with tongue-tie: A literature review.

Summary of primary literature.

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Tools and Assessments Used

Method

Breastfeeding self-efficacy scale (BSES)

Infant breastfeeding assessment tool (IBFAT)

Barnes & Lane

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Summary of primary literature.

Discussion

Study design weaknesses

- Lack of blinding and control
- If feeding difficulties persist, controls typically proceed with frenotomy
- Mid- to long-term follow-up is limited
- Blinding is difficult to achieve and maintain
- Small number of participants

Standardization weaknesses

- Heterogeneous methodologies
- Lack of uniformity in outcome measures
- Subjective nature of available measures, frequent reference to placebo effect
- Differences in descriptions and management of ankyloglossia

Future Research Directions

More research with better study designs and more homogenous methodology would better reveal the impact of frenotomy on breastfeeding outcomes. Objective measures of breastfeeding could improve the ability to compare research, conduct meta-analyses, and determine whether true differences in outcomes exist. Other areas of future research could include nonsurgical interventions to frenotomy and a true control group that would allow for long-term follow-up of frenotomy impact. Additionally, future research could incorporate the impact that a woman’s culture and background might have on breastfeeding after frenotomy. The link between frenotomy and successful breastfeeding can’t be viewed in isolation.

References


