



Cochrane Nursing Care Field (CNCF) – A Cochrane Review Summary

Frenotomy for tongue-tie in newborn infants

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ABSTRACT

Background: Tongue-tie (ankyloglossia) occurs when there is an anterior attachment near the tip of the tongue resulting in restricted tongue movement. It is reported to be a cause of poor breastfeeding in infants and nipple pain in breastfeeding mothers.

Objectives: The objectives of the study were to determine whether frenotomy is safe and effective in improving ability to feed orally among infants.

Intervention/methods: Frenotomy may correct the restriction of tongue movement and allow improved breast feeding and reduced maternal nipple pain. Randomised, quasi-randomised cluster-randomised controlled trials that compared frenotomy versus no frenotomy or frenotomy versus sham procedure were included in the review. Participants were infants with tongue-tie experiencing feeding problems, or whose breast feeding mothers were experiencing nipple pain.

Results: Five studies (N = 302) met the inclusion criteria. Pooled analysis of two studies showed no change following frenotomy (mean difference (MD) –0.1, 95% confidence interval (CI) –0.6 to 0.5 units on a 10-point feeding scale). A third study showed objective improvement on a 12-point feeding scale (MD 3.5, 95% CI 3.1 to 4.0 units of a 12-point feeding scale). Pooled analysis of three studies (n = 212) showed a reduction in maternal pain scores following frenotomy (MD –0.7, 95% CI –1.4 to –0.1 units on a 10-point pain scale). These studies had serious methodological shortcomings.

Conclusion: Investigators did not find a consistent positive effect on infant breastfeeding following frenotomy. A short-term reduction in breast pain was found among breastfeeding mothers. Small trial numbers and methodological issues meant no definitive benefit for frenotomy in infants with tongue-tie could be proved.

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1. Background

The lingual frenulum is a fold of mucous membrane that attaches from the floor of the mouth to the midline of the underside of the tongue. It helps stabilise the base of the tongue and does not impair the movement of the tongue tip. Tongue-tie (ankyloglossia) occurs when there is an anterior attachment near the tip of the tongue resulting in restricted tongue movement. It has been reported as a cause of poor breastfeeding in infants and speech delay in older children. Breastfeeding problems can occur due to poor nipple attachment and ability to remain latched on, with maternal nipple damage and maternal pain resulting from increased friction secondary to the infant's restricted tongue movement.

The researchers cite the controversy that exists as to the diagnosis and management of tongue-tie, with lactation consultants believing tongue-tie to be a significant cause of breastfeeding difficulties (Messner et al., 2000) and paediatricians and otolaryngologists believing ankyloglossia never or rarely causes breastfeeding problems (Messner and Lalakea, 2000). However, the American Academy of Paediatrics (Coryllos et al., 2004) and the National Institute for Health and Care Excellence (National Institute of Health and Care Excellence, 2018) acknowledge tongue-tie as a clinical condition that should be treated early to minimise breastfeeding problems. Exclusive breastfeeding is recognised as the optimal mode of infant feeding as well as being beneficial for mothers, therefore any problems that impact on breastfeeding should be addressed as soon as possible.

2. Objectives

To determine whether frenotomy is safe and effective in improving ability to feed orally among infants younger than three months of age with tongue-tie (and problems feeding). Lactation

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consultant interventions were accepted as long as they were offered to both groups.

Primary outcomes were infant feeding assessed within 48 h, within two to seven days and after seven days following the procedure with the use of a validated scale such as the LATCH score (Jensen et al., 1994) or the Infant Breastfeeding Assessment Tool (IBFAT) (Mathews, 1988).

3. Intervention/methods

Frenotomy, or clipping of the frenulum is where the frenulum is incised with sharp blunt end scissors, usually without analgesia or anaesthetic with the infant able to feed quickly following the procedure. The use of laser for the procedure is becoming more common.

The researchers included randomised or quasi randomised controlled trial or cluster-randomised controlled trials that compared frenotomy verses no frenotomy or frenotomy verses sham procedure. The participants were infants under three months old with a diagnosis of tongue-tie who were orally feeding and had a diagnosis that could be related to tongue-tie, specifically, infant feeding problems or maternal nipple pain in a breastfeeding mother.

4. Results

Five studies (N = 302) were included that compared frenotomy versus no frenotomy, or frenotomy verses sham procedure. Three studies objectively measured infant breastfeeding using standardised assessment tools. Pooled analysis of two studies (n = 155) showed no change on a 10-point feeding scale following frenotomy (mean difference (MD) –0.1, 95% confidence interval (CI) –0.6 to 0.5 units on a 10-point feeding scale). A third study (n = 58) showed objective improvement on a 12-point feeding scale (MD 3.5, 95% CI 3.1–4.0 units of a 12-point feeding scale). Four studies objectively assessed maternal pain. Pooled analysis of three studies (n = 212) based on a 10-point pain scale showed a reduction in maternal pain scores following frenotomy (MD –0.7, 95% CI –1.4 to –0.1 units on a 10-point pain scale). A fourth study (n = 58) also showed a reduction in pain scores on a 50-point pain scale (MD –8.6, 95% CI –9.4 to –7.8 units on a 50-point pain scale). All studies reported no adverse effects following frenotomy. These studies had serious methodological shortcomings. They included small sample sizes, and only two studies blinded both mothers and assessors; one did not attempt blinding for mothers nor for assessors. All studies offered frenotomy to controls, and most controls underwent the procedure, suggesting lack of equipoise. No study was able to report whether frenotomy led to long-term successful breastfeeding.

5. Implications for practice

Investigators did not find a consistent positive effect on infant breastfeeding following frenotomy. A short-term reduction in

breast pain was found among breastfeeding mothers. Due to the small number of studies and the incidence of methodological issues in the included studies, no definitive benefit for frenotomy in infants with tongue-tie could be proved. These uncertainties need to be addressed with additional high quality randomised controlled trials with short and longer-term follow-up to determine the effect of the procedure. Frenotomy should not be performed on the control infants to allow for long-term assessment of the intervention.

Source document

O'Shea JE, Foster JP, O'Donnell CPF, Breathnach D, Jacobs SE, Todd DA, Davis PG. Frenotomy for tongue-tie in newborn infants. *Cochrane Database of Systematic Reviews* 2017, Issue 3. Art. No.: CD011065. DOI: [10.1002/14651858.CD011065.pub2](https://doi.org/10.1002/14651858.CD011065.pub2).



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