Review of tongue-tie release at a tertiary maternity hospital

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Objective: To review the first 12 months of assessment and release of lingual frenulum (frenotomy) at a breast-feeding clinic in a tertiary maternity hospital (August 2002 to end of July 2003) and to report on the breast-feeding outcomes and parental satisfaction.

Methods: A structured telephone interview was conducted with the mother at least 3 months after the assessment. Data were collected about the presenting problem and the effect of release of the tongue-tie (if performed). Parents were also asked about their satisfaction with the procedure and of problems following the release.

Results: Sixty-six babies were assessed in 12 months. If infants were assessed as: (i) having impaired lingual function (using the Hazelbaker assessment tool for lingual frenulum function); (ii) the frenulum visualized to be a thin membrane; and (iii) the parent(s) gave informed consent regarding the presence of ankyloglossia, then the frenotomy procedure was performed. Initial and follow-up data are available on 46 infants. Infants had a mean age of 18 days (range 3–98), 63% were male infants and most had difficulties with attachment to the breast. Frenotomy was performed on 35 infants and breast-feeding improved in 83%. Parents reported high levels of satisfaction with the frenotomy procedure and no complications were reported.

Conclusion: Frenotomy is a safe and easy procedure. Infants with a significant tongue-tie that is interfering with breast-feeding have shown an improvement with breast-feeding following frenotomy.

Key words: ankyloglossia; breast-feeding; frenotomy; lingual frenulum; tongue-tie.
‘several months of age’ in an outpatient clinic without general anaesthesia.1

The aim of this study was to review the first 12 months of release of lingual frenulum at a breast-feeding clinic located at a tertiary maternity hospital and to report breast-feeding outcome and parental satisfaction.

METHODS

In August 2002, a medical practitioner (LHA) was appointed to Breastfeeding Education and Support Services (BESS) at the Royal Women’s Hospital, Melbourne. From that time, all infants presenting to the breast-feeding service with a possible tongue-tie were assessed using the HATLFF. If infants were: (i) assessed as having impaired lingual function; (ii) the frenulum was visualized to be a thin membrane; and (iii) the parent(s) gave informed consent, the frenulum was released as described above. The infant would immediately be offered the breast, or a bottle if appropriate.

A structured interview was conducted with the mother by telephone at least 3 months after the tongue-tie assessment by one of the clinic lactation consultants. Data were collected about the presenting problem and the effect of release of tongue-tie (if performed). Parents were also asked about their satisfaction with the procedure and about any problems following the release. It was considered that this review was a quality assurance undertaking and approval from the hospital research and ethics committees were not necessary.15

RESULTS

Sixty-six infants were assessed between August 2002 and the end of July 2003. Telephone interviews were conducted from 27 June 2003 to 4 December 2003. The mean length of time between assessment of tongue-tie and interview was 26 weeks (range 12–46, median 24). Initial data collection was incomplete for 11 infants and nine infants were lost to follow-up. Follow-up data were collected on 46 infants and these results are presented here.

Infants were most commonly referred by one of the Royal Women’s Hospital lactation consultants (19/40) (data missing in six). Others were referred by maternal and child health nurses in the community (n = 7), other hospitals (three), midwives in the hospital (three) and the community (three). Three were self-referred, one was referred by a paediatrician and one by the Australian Breastfeeding Association. At the time of assessment the babies were on average 18 days old (range 3–98 days, median 12.5).

Most of the mothers of babies assessed for tongue-tie reported difficulties with breast-feeding their infants (three reported no problem). Twenty-one had difficulty attaching the baby to the breast, 13 had nipple pain, four had nipple damage, and seven reported frequent feeding, two prolonged feeding, eight poor weight gain (mothers could report more than one problem, five were not breast-feeding or data missing). Of the women who reported problems, the most important problem was reported to be attachment to the breast (see Table 2).

After assessment of the lingual frenulum with the Hazelbaker tool, release was recommended and performed in 35 (35/46, 76%). The frenulum was released in the hospital ward (four) or the breast-feeding clinic immediately (28), or at a later visit (three). For the 35 infants undergoing frenotomy, the mean function score was 10.9 (SD 0.57) and the mean appearance score 5.9 (SD 1.5). The other 11 infants received a score that did not recommend release of the frenulum.

More male infants were assessed than female (29/46, 63%) or a ratio of 1.7:1 (males to females). Frenotomy was performed in approximately three-quarters of infants assessed (22/29, 76% of boys; 13/17, 77% of girls). Parents were asked if they were aware of any family history of tongue-tie: seven were aware of a family history (this was a sibling in one case), 36 reported no family history (three missing). All infants with a known family history were found to have a significant tongue-tie on examination.

Table 1

<table>
<thead>
<tr>
<th>Appearance items</th>
<th>Function items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance of tongue when lifted</td>
<td>Lateralization</td>
</tr>
<tr>
<td>2: Round or square</td>
<td>2: Complete</td>
</tr>
<tr>
<td>1: Slight cleft in tip apparent</td>
<td>1: Body of tongue but not tongue tip</td>
</tr>
<tr>
<td>0: Heart or V-shaped</td>
<td>0: None</td>
</tr>
<tr>
<td>Elasticity of frenulum</td>
<td>Lift of tongue</td>
</tr>
<tr>
<td>2: Very elastic</td>
<td>2: Tip to mid-mouth</td>
</tr>
<tr>
<td>1: Moderately elastic</td>
<td>1: Only edges to mid-mouth</td>
</tr>
<tr>
<td>0: Little or no elasticity</td>
<td>0: Tip stays at lower alveolar ridge or rises to mid-mouth only with jaw closure</td>
</tr>
<tr>
<td>Length of lingual frenulum</td>
<td>Extension of tongue</td>
</tr>
<tr>
<td>when tongue lifted</td>
<td>2: Tip over lower lip</td>
</tr>
<tr>
<td>2: &gt;1 cm or embedded in tongue</td>
<td>1: Tip over lower gum only</td>
</tr>
<tr>
<td>1: 1 cm</td>
<td>0: Neither of above, or anterior or mid-tongue humps</td>
</tr>
<tr>
<td>0: &lt;1 cm</td>
<td></td>
</tr>
<tr>
<td>Attachment of lingual frenulum to tongue</td>
<td>Peristalsis</td>
</tr>
<tr>
<td>2: Posterior to tip</td>
<td>2: Complete, anterior to posterior</td>
</tr>
<tr>
<td>1: At tip</td>
<td>1: Partial, originating posterior to tip</td>
</tr>
<tr>
<td>0: Notched tip</td>
<td>0: None or reverse motion</td>
</tr>
<tr>
<td>Attachment of lingual frenulum to inferior alveolar ridge</td>
<td>Snapback</td>
</tr>
<tr>
<td>2: Attached to floor of mouth or just below ridge</td>
<td>2: None</td>
</tr>
<tr>
<td>1: Attached just below ridge</td>
<td>1: Periodic</td>
</tr>
<tr>
<td>0: Attached at ridge</td>
<td>0: Frequent or with each suck</td>
</tr>
</tbody>
</table>

Frenotomy necessary if Appearance item score is <8. If Function <11 function is impaired and frenotomy should be considered if management fails. If Function = 11, acceptable if appearance = 10.

Table 2

<table>
<thead>
<tr>
<th>Most important presenting problem</th>
<th>Infants assessed as having significant tongue-tie (% n = 27)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attachment to the breast</td>
<td>12 44</td>
</tr>
<tr>
<td>Nipple pain</td>
<td>6 22</td>
</tr>
<tr>
<td>Prolonged feeding</td>
<td>5 19</td>
</tr>
<tr>
<td>Poor weight gain</td>
<td>2 7</td>
</tr>
<tr>
<td>Frequent feeding</td>
<td>1 4</td>
</tr>
<tr>
<td>Nipple damage</td>
<td>1 4</td>
</tr>
</tbody>
</table>

After the tongue-tie release (n = 35), six mothers reported no difference with breast-feeding (17%), 18 reported ‘better
attachment" to the breast (51%), 20 ‘improved sucking’ (57%),
nine reported less pain (26%), six ‘weight improved’ (17%),
two ‘other difference’, three were not breast-feeding at the time
(parents could give more than one response).

At the follow-up interview, the mother was asked if she felt
that she had been given enough information about the condition
and the procedure. The options were ‘Yes enough information’
(31/35, 89%), ‘Yes, but would have liked more’ (4/35, 11%),
‘No’ (zero), ‘Not sure’ (zero). If mothers responded that they
would have liked more information, they were asked how they
would like this information (verbal, written, video); all four said
written information.

Seventy-four per cent of mothers were ‘very satisfied’ with
the procedure (26/35), and nine were ‘satisfied’ with the proce-
dure (9/35, 26%). Parents were also asked how they felt about the
decision to release the tongue-tie at the time of the follow-up in-
terview, 34 reported that they were ‘pleased the tongue-tie was
released’, one was ‘neither pleased nor displeased’ and none
reported that they were ‘displeased’. All mothers were asked
about any problems after the tongue-tie release; no problems
were reported.

The participants were invited to make a comment about their
experience. A sample of comments is listed below:

- Happy it was done; feeding settled down over next couple of
days (Baby 4-days-old)
- Very pleased with assessment. I understood all the explana-
tions (Baby 56-days-old)
- Couldn’t believe how quick and easy it was (Baby 7-days-
old)
- I was lucky it was released as early as it was. Would be
bottle-fed early if not released (Baby 3-days-old)

DISCUSSION

Satisfaction levels were high in this study, and as reported by
Masaitis and colleagues, parents would choose the procedure
again if needed. Although the majority of parents felt that
breast-feeding had improved following the frenotomy (83%),
the breast-feeding problems were not resolved by the proce-
dure alone in some cases. As this was an observational study,
we have no control group with which to compare satisfaction
outcomes.

No complications were reported in this study, nor in the 36
infants followed up at 3 months by Masaitis and Kaempf or
in 123 infants reported by Ballard et al. or the randomised
controlled trial in Southampton. Further testing of the Hazeltaker assessment should be con-
ducted, including interrater reliability. Despite the limitations of
this tool, it does provide a more objective measure of the
severity of tongue-tie than the more limited descriptive terms:

mild, moderate or severe. Parents in this study appreciated the
careful examination of their infant’s mouth and the explanations
they were given by the clinician.

Other authors have reported that tongue-tie was more common
in boys than girls, When the numbers of infants in these four studies are combined with our study, the propor-
tion of male infants with tongue-tie is 65.4% (458/700),
with a 95% confidence interval of 61.8–69.0 (binomial exact,
Stata 8.0).

In conclusion, although some clinicians believe there is ‘no
need for “snipping” or “clipping” the lingual frenulum without
anaesthesia’, others have found that if the presence of a sig-
nificant tongue-tie is interfering with successful breast-feeding,
it is safe and easy to correct this problem. In particular,
breeding is minimal or non-existent. This quality assurance
project found high parental satisfaction, no complications and
that approximately 80% of mothers reported an improvement
with breast-feeding following frenotomy.

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