All Tied Up: What does the evidence say about tongue tie?

Associate Prof Donna Geddes

Faculty of Science, The University of Western Australia, Crawley, Western Australia

"The treatment of tongue tie is controversial" is probably the understatement of the year! The intense focus of tongue-tie as a contributor to breastfeeding problems is reflected in the drastic increase in diagnoses and treatment. This trend is mirrored by the exponential rise in the number of published articles on tongue-tie in the past 5 years. Unfortunately, two thirds of these publications are considered low impact, in that they are reviews, editorials and opinions.[1] This somewhat reflects the conundrum of the clinician where few strong research studies have been carried out that can be translated into practice. Whilst some randomised controlled trials (RCT) have been carried out they suffer numerous issues such as ethical considerations resulting control groups being offered or requesting frenotomy, making them less robust according to scientific requirements.[2] It is also widely acknowledged that it is difficult to accurately and reliably measure, grade or assess the functional impact of tongue-tie in breastfeeding infants making the interpretation of the RCTs difficult. Indeed, our initial study of the effectiveness of frenotomy in tongue-tied babies, nearly all babies would be classified as having an anterior or classical tongue-tie.[3] Both prospective and retrospective audits have great value in monitoring practice however we must recognise they are biased to the clinician's skill and expertise in diagnosis and treatment, so unfortunately do not represent clinical practice in the whole population.

Breastfeeding is a complex relationship that is influenced by both maternal and infant physiology and behaviour. At the University of Western Australia, in our research programme, we endeavour to measure as many aspects of these areas as possible.[3] For example, we measure breastfeeding behaviour and milk production with 24-hour test weighing [4] in the mother's home. This allows us to determine if the mother already suffers low production and whether the infant is effective or efficient at removing milk from the breast. We also incorporate validated pain scores,[5] breastfeeding self-efficacy and extensive demographic questionnaires into the assessment to objectively measure outcomes. During monitoring at the lab we measure sucking pressure and use real time ultrasound simultaneously [6] to image movement of the tongue. Most recently we have embarked upon a study that also measures the tongue-tied infant's suck-swallow-breathe patterns pre- and post-frenotomy, which is then compared, to a prospective control group.

Using a multifaceted research approach, we are endeavouring to unravel the complexity of the tongue-tie and determine the impact on breastfeeding.

References

1 Bin-Nun A, Kasirer YM, Mimouni FB. A Dramatic Increase in Tongue Tie-Related Articles: A 67 Years Systematic Review. Breastfeeding medicine : the official journal of the Academy of Breastfeeding Medicine. 2017;12(7):410-414.
2 O'Shea JE, Foster JP, O'Donnell CP, et al. Frenotomy for tongue-tie in newborn infants. The Cochrane database of systematic reviews. 2017;3:CD011065.
3 Geddes DT, Langton DB, Gollow I, Jacobs LA, Hartmann PE, Simmer K. Frenulotomy for breastfeeding infants with ankyloglossia: effect on milk removal and sucking mechanism as imaged by ultrasound. Pediatrics. 2008;122(1):e188-194.
4 Kent JC, Mitoulas LR, Cregan MD, Ramsay DT, Doherty DA, Hartmann PE. Volume and frequency of breastfeedings and fat content of breast milk throughout the day. Pediatrics.2006;117(3):e387-395.
5 McClellan HL, Hepworth AR, Garbin CP, et al. Nipple pain during breastfeeding with or without visible trauma. Journal of human lactation : official journal of International Lactation Consultant Association. 2012;28(4):511-521.
6 Geddes DT, Kent JC, Mitoulas LR, Hartmann PE. Tongue movement and intra-oral vacuum in breastfeeding infants. Early human development. 2008;84(7):471-477.