

Tethered Oral Tissue(s) References

Written by: Robyn Merkel-Walsh MA, CCC-SLP/COM® & Lori L. Overland, MS, CCC-SLP, C/NDT, CLC

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American Academy of Breastfeeding Medicine (AABM). (2016). Protocol # 11: Guidelines for the evaluation and management of neonatal ankyloglossia and its complications in the breastfeeding dyad. Retrieved from: <http://www.bfmed.org/Media/Files/Protocols/ankyloglossia.pdf>

American Academy of Head and Otolaryngology: Head and Neck Surgery (AAO-HNS). (2015) Clinical Indicators. Retrieved from: <http://www.entnet.org/content/clinical-indicators>

American Academy of Pediatric Dentistry (AAPD) Council on Clinical Affairs (2015). Guidelines on management considerations for pediatric oral surgery and oral pathology. *Clinical Practice Guidelines*, 279-288.

Amir, L.H., James, J.P. & Donath, S.M. (2006). Reliability of the Hazelbaker assessment tool for lingual frenulum function. *International Breastfeeding Journal*, 1(3).

Bahr, D., & Banford, R. J. (2012). The oral motor debate part III: Exploring research and training needs/ideas. *Oral Motor Institute*, 4(1). Available from www.oralmotorinstitute.org.

Bahr, D. (2011a). The Oral Motor Debate Part I: Understanding the Problem. *Oral Motor Institute*, 3(1). Available from www.oralmotorinstitute.org.

Bahr, D. (2011b). The Oral Motor Debate Part II: Exploring Terminology and Practice Patterns. *Oral Motor Institute*, 3(2). Available from www.oralmotorinstitute.org.

Bahr, D. (2010). *Nobody ever told me (or my mother) that! Everything from bottles and breathing to healthy speech development!* Arlington, TX: Sensory World.

Bahr, D., Rosenfeld-Johnson, S. (2010). Treatment of children with speech oral placement disorders (OPDs): a paradigm emerges. *Communication Disorders Quarterly*, XX(X), 108.

Bahr, D. (2001). *Oral motor assessment and treatment: Ages and stages*. Boston, MA: Allyn & Bacon.

Baxter, R. (2018). *Tongue Tied: How a tiny string under the tongue impacts nursing, speech, feeding, and more*. Alabama, GA: Alabama Tongue-Tie Center.

Baxter, R. & Hughes, L. (2018). [Speech and feeding improvements in children after posterior tongue-tie release: a case series](#). *International Journal of Clinical Pediatrics*.

Boshart, C. (2015). *Demystifying tongue tie, methods to confidently analyze and treat a tethered tongue*. Ellijay, GA: Speech Dynamics Inc.

Boshart, C. (1999) Oral-facial illustrations and reference guide. Retrieved from: <http://www.charboshart.com/products/oral-facial-illustrations-and-reference-guide>. Arlington, TX: Sensory World.

Brooks, L., Landry, A., Deshpande, A., Marchica, C., Cooley, A., & Raol, N. (2019). Posterior tongue tie, base of mouth movement, and pharyngeal dysphagia: what is the connection? *Dysphagia*, 1-4.

Brussel, C. (2001). Considering craniosacral therapy in difficult situations. *Leaven*, 37(4): 82-83.

Burkhart, N.W. (2015). Ankyloglossia: are you paying attention. Retrieved from : <http://www.rdhmag.com/articles/print/volume-33/issue-12/columns/ankyloglossia-are-you-paying-attention.html>

Cadwell, K., & Turner-Maffei, C. (2016). *The Lactation Counselor Certificate Course Notebook, 2016-2017 Ed*. East Sandwich, Massachusetts, Healthy Children Project, Inc.

Caloway C, Hersh CJ, Baars R, Sally S., Diercks, G., Hartnick CJ. (2019). Association of feeding evaluation with frenotomy rates in infants with breastfeeding difficulties. *JAMA Otolaryngol Head Neck Surg*. doi:10.1001/jamaoto.2019.1696

Chaubey, K.K., Arora, V.K. , Thakur, R. & Narula, I.S. (2011). Perio-esthetic surgery: Using LPF with frenectomy for prevention of scar. *Journal of Indian Soc Periodontics*, 15(3): 265-269).

Chu, M.W. & Bloom, D.C. (2009). Posterior ankyloglossia: a case report. *International Journal of Pediatric Otorhinolaryngology*, 73(6):881-3.

Cioffi Izu, S., Harumi Itamoto, C., Pradella Hallinan, M., Ulson Pizarro, G., Tufik, S., Pignatori, S. & Raimundo Fujita, R. (2010). Obstructive sleep apnea syndrome (OSAS) in mouth breathing in children. *Brazil Journal of Otorhinolaryngology*, 75(5). Retrieved from :
http://www.scielo.br/scielo.php?pid=S1808-86942010000500003&script=sci_arttext&tlng=en

Coryllos, E., Genna, C.W. & Salloum, A.C. (2004). Congenital tongue-tie and its impact on breastfeeding. American Academy of Pediatrics. Retrieved from:
<https://www2.aap.org/breastfeeding/files/pdf/BBM-8-27%20Newsletter.pdf>

Daggumati, S., Cohn, J. E., Brennan, M. J., Evarts, M., McKinnon, B. J., & Terk, A. R. (2019). Speech and language outcomes in patients with ankyloglossia undergoing frenulectomy: A Retrospective Pilot Study. *OTO Open*, 3(1).doi: 10.1177/2473974X19826943. e

de Castro Rodrigues, R.L., Marchesan, I.Q., Gusmao, R.J. de Castro Rodriguez, A. & Berretin-Felix, G. (2014). Characteristics of altered human frenulum. *International Journal of Pediatrics and Child Health Care*, 2, 5-9.

Devishree, Kumar-Gujjari, S. & Shubhashini, P.V. (2012) Frenectomy: a review with the reports of surgical techniques. *Journal of Clinical Diagnosis and Research*, 6(9):1587-1592.

Elad, D., Kozlovsky, P., Blum, O., Laine, A. F., Po, M.J., Botzer, E. & Sira, L. B. (2014). Biomechanics of milk extraction during breast-feeding. *Proceedings of the National Academy of Sciences*, 111(14), 5230-5235.

Emanuel, M. (2017). Developing considerations with TOTs: tummy time. Presented at: Connecting the Dots in TOTs. New York, N.Y.

Emanuel, M. (2016). Oral restrictions. Retrieved from:
<http://www.tummytimemethod.com/oral-restrictions.html>.

Fernando, C. (1998). *Tongue tie - from confusion to clarity: a guide to the diagnosis and treatment of ankyloglossia*. Sydney, Australia: Tandem Publications.

Ferret-Amat, E., Pastor-Vera, T., Ferres-Amat, E., Mareque-Bueno, J., Prats-Armengol, J. & Ferres-Padro, E. (2016). Multidisciplinary management of ankyloglossia in childhood. Treatment of 101 cases. A protocol. *Journal of Oral Medicine and Pathology*, 1:21 (1):39-47.

Forienza, G., Paradise-Black, N.M., McNamara, E.G, & Sullivan, S.E. (2010). Ankyloglossia: exclusive breastfeeding and failure to thrive. *Pediatrics*, 125 (6); e1500-e1504.

Francis, D.O., Chinnadurai, S., Morad, A., Epstein, R.A., Kohanim, S., Krishnaswami, S., Sathe, N. & McPhetters, M. (2015). Treatments for ankyloglossia and ankyloglossia with concomitant lip tie. *Effective Healthcare Program: Comparative Effectiveness Review*, US Department of Health and Human Services, NO.149 AHRQ Publication No. 15-EHC011.-EF.

Gatto, K. (2016). *Understanding the orofacial complex*. Denver, CO: Outskirts Press.

Geddes, D.T., Kent, J.C., Mitoulas, L.R. & Hartmann, P.E. (2008). Tongue movement and intra-oral vacuum in breastfeeding infants. *Early Human Development*, 84(7): 471-7.

Genna, C.W. (2016). Supporting sucking in infant breast feeding infants. (2nd ed.) Burlington, MA: Jones and Bartlett Learning.

Genna, C.W. (2002). Tongue tie and breastfeeding. *Leaven*, 38(2): 27-29.

Genna, C.W. & Coryllos, E.V. (2009) Retrieved From: http://www.brianpalmerdds.com/pdf/cwatson_tongue_presentation.pdf

Genther, D. J., Skinner, M. L., Bailey, P. J., Capone, R. B., & Byrne, P. J. (2015). Airway obstruction after lingual frenulectomy in two infants with Pierre-Robin Sequence. *International journal of pediatric otorhinolaryngology*, 79(9), 1592-1594.

Ghaheri, B. A., Cole, M., Fausel, S. C., Chuop, M., & Mace, J. C. (2017). Breastfeeding improvement following tongue-tie and lip-tie release: A prospective cohort study. *The Laryngoscope*, 127(5), 1217-1223. doi:10.1002/lary.26306

Ghaheri, B. (2017). Aftercare. Retrieved from: <http://www.drghaheri.com/aftercare/>

Ghaheri, B, (2015). The importance of active wound management following frenectomy. Retrieved From: <http://www.drghaheri.com/blog/2015/6/21/the-importance-of-active-wound-management-following-frenotomy>

Ghaheri, B. (2014a). Diagnosing tongue-tie in baby is not a fad. Retrieved from:

<http://www.drghaheri.com/blog/2014/2/17/diagnosing-tongue-tie-in-a-baby-is-not-a-fad>

Ghaheri, (2014b). Rethinking tongue-tie: anterior vs. posterior is irrelevant. Retrieved from:

<http://www.drghaheri.com/blog/2014/3/22/rethinking-tongue-tie-anatomy-anterior-vs-posterior-is-irrelevant>

Ghaheri, B. (2014c). How to assess a baby for tongue-tie or lip-tie. Retrieved from:

<http://www.drghaheri.com/blog/2014/2/15/how-to-examine-a-baby-for-tongue-tie-or-lip-tie>

Hari Iyer, V. & Sudarson, S. (2015). A comprehensive treatment protocol for lingual frenectomy with combination of laser and speech therapy. *International Journal of Laser Dentistry*, 5(1): 12-21.

Hazelbaker, A. (2010). *Tongue-tie: Morphogenesis, Impact, Assessment and Treatment*. Columbus, OH: Aidan and Eva Press.

Horton C.E., Crawford H.H., Adamson J.E., Ashbell T.S. (1969). Tongue-tie. *The Cleft Palate Journal*, 6: 8-23. [PMID 5251442](#).

Huang, Y., Quo, S., Berkowski, J.A. & Guilleminault, C.S. (2015). Short lingual frenulum and obstructive sleep apnea in children *International Journal of Pediatric Research*, 1:1, ISSN:2469-5769.

International Affiliation of Tongue-Tie Professionals (2011). Classification. Retrieved from:

<http://tonguetieprofessionals.org/about/assessment/classification/>

International Lactation Consultant Association (ILCA). (2011). Position paper on the role of IBCLC. Morrisville, NC: ILCA.

Ito, Y., Shimizu, T., Nakamura, T. & Takatama, C. (2014). Effectiveness of tongue-tie division for speech disorders in children. *Pediatrics International*, 57:2, 1442-200x.

Kassing, (2008). Breastfeeding and craniosacral therapy: when it can help. Low Milk Supply. Retrieved from:

<http://www.lowmilksupply.org/craniosacral.shtml>.

- Khaimar, M., Pawar, B. & Khaimar, D. (2014). A novel pre-surgical technique for the management of ankyloglossia. *Journal of Surgical Technique Case Reports*, 6(2): 49-54.
- Kotlow, L. (2018). The Breastfeeding Dilemma: Misdiagnosed TOTS or Just Ignoring their Existence? *Med Case Rep J.*, 1 (1):1-5.
- Kotlow, L. (2001). Infant reflux and aerophagia associated with maxillary lip-tie and ankyloglossia. *Clinical Lactation*, Vol. 2-4, 25-29.
- Kotlow, L. (2014). *Lasers in Pediatric Dentistry*. Dental Clinics of North America. 48:4.
- Kotlow, L. (2015). TOTS-tethered oral tissues: the assessment and diagnosis of the tongue and upper lip ties in breastfeeding. *Oral Health*. Retrieved from:
<http://www.oralhealthgroup.com/features/tots-tethered-oral-tissues-the-assessment-and-diagnosis-of-the-tongue-and-upper-lip-ties-in/>
- Kummer, A. (2016). To clip or not to clip? That's the question. Presented at the annual convention of The American Speech and Hearing Association, Philadelphia, PA.
- Kummer, A. (2005). To clip or not to clip? That's the question. *The ASHA Leader*, 10:6-30.
- Kupietzky, A. & Botzer, E. (2005) Ankyloglossia in the infant and young child: clinical suggestions for diagnosis and management. *Pediatric Dentistry*, 27:1, 40-46.
- Larjava, H. (2012) *Oral wound healing: cell biology and clinical management*. Wiley-Blackwell: Vancouver BC, Canada.
- Lee, N. (2016) *Complementary and alternative medicine in breastfeeding therapy*. Amarillo, TX: Praeclarus Press LLC.
- Levine, R. Vitruk, P. (2015b). Enhanced hemostasis and improved healing in CO₂ laser assisted soft tissue oral surgeries. *Implant Practice US* 8(3). 34-37.
- Marchesan, I.Q. (2004). Lingual frenulum: classification and speech interference. *IJOM*, XXX:31-38.

Marchesan, I.Q, Canton, P. & deCastro Matrinelli, R.L. (2018). Understanding the Lingual Frenulum Literature. Cefac Soude e Educacao. Poster session at The International Association of Orofacial Myology, Charlotte, S.C.

Mayo Clinic (2016). Diseases and conditions: tongue-tie (Ankyloglossia). Retrieved from:
<http://www.mayoclinic.org/diseases-conditions/tongue-tie/basics/definition/CON-20035410>

Marchesan, I.Q. (2012). Lingual Frenulum Protocol. *International Journal of Orofacial Myology*, 38, 89-104.

Marshalla, P. (2008). Oral Motor Treatment vs. Non-speech Oral Motor Exercises. *Oral Motor Institute*, 2(2). Available from www.oralmotorinstitute.org.

Marshalla, P. (2007). Oral Motor Techniques Are Not New. *Oral Motor Institute*, 1(1). Available from: www.oralmotorinstitute.org.

Marchesan, I. Q. (2005). Lingual frenulum: quantitative evaluation proposal. *The International Journal of Orofacial Myology*, 31: 39-4.

Martinelli, Roberta Lopes de Castro, Marchesan, Irene Queiroz, & Berretin-Felix, Giédre. (2014). Longitudinal study of the anatomical characteristics of the lingual frenulum and comparison to literature. *Revista CEFAC*, 16(4), 1202-1207.
<https://dx.doi.org/10.1590/1982-021620149913>

Martinelli, R. L., Marchesan, I. Q. , & Berretin-Felix, G. (2018). Posterior lingual frenulum in infants: occurrence and maneuver for visual inspection. *Revista CEFAC*, 20(4), 478-483.
<https://dx.doi.org/10.1590/1982-0216201820410918>

Martinelli, R. L., Marchesan, I. Q. , Honorio, H.M. & Berretin-Felix, G. Tendency of tongue positioning during crying in infants with and without lingual frenulum alteration. *International Journal of Development Research*, 08, (11): 24310-24312.

Martinelli, R.L.C., Marchesan, I.Q., & Berretin-Felix, G. (2012). Lingual Frenulum Protocol with Scores for Infants. *International Journal of Orofacial Myology*, 38, 104-113.

Meaux, A., Savage, M., & Gonsoulin, C. (2016). Tongue ties and speech sound disorders: what are we overlooking? Presented poster at the Annual ASHA Convention, Philadelphia, PA.

Messner, A.H. & Lalakea, M.L. (2000). Ankyloglossia: controversies in management. *International Journal of Pediatric Otorhinolaryngology*, 54(2):123-31.

Merdad H. & Mascarenhas, A.K. (2013). Ankyloglossia may cause breastfeeding, tongue mobility, and speech difficulties, with inconclusive results on treatment choices. *Journal of Evidence-Based Dental Practice*, 10(3):152-3.

Merkel-Walsh & Overland, L.L. (2017). TOTs: the functional impact on feeding and speech (joint lecture). Presented at: Connecting the Dots in TOTs. New York, N.Y.

Merkel-Walsh, R. (2016). A modern look at Van Riper's phonetic placement approach. . Poster session. ASHA Connect Convention. Minneapolis, MN.

Merkel-Walsh , R. & Jahn, A. (2014). Teaming up to correct tongue-tie. *The ASHA Leader* ,19. Retrieved from : <http://leader.pubs.asha.org/article.aspx?articleid=1814871>

Merkel-Walsh, R. (2011) *Systematic Intervention for Lingual Elevation (SMILE)*. Charleston, SC: TalkTools.

Mills, Pransky, Geddes & Mirjalil (2019). What is a tongue-tie? Defining the anatomy of the in-situ lingual frenulum. *Clinical Anatomy*.

Moeller, J., 2017. Orofacial myofunctional therapy: a creative way to make a difference in patient's lives. RDH. Retrieved from: <http://www.rdhmag.com/articles/print/volume-29/issue-11/feature/orofacial-myofunctional-therapy.html>

Morris, S. & Klein, M. (2000). *Pre-feeding skills (2nd ed)*. San Antonio TX: Therapy Skill Builders.

Northcutt, M. (2009). The lingual frenum. *The Journal Of Clinical Orthodontics*, 43(9):557-565.

O'Callahan, C., Macary, S., & Clemente, S. (2013). The effects of office-based frenotomy for anterior and posterior ankyloglossia on breastfeeding. *International journal of pediatric otorhinolaryngology*, 77(5), 827-832.

- Opara, P., Gabriel-Job, N. & Opara, K.O. (2012). Neonates presenting with severe complications of frenotomy: a case series. *Journal of Case Reports*, 6, 77.
- Ostapiuk, B. (2006). Tongue mobility in ankyloglossia with regards to articulation. *Ann Acad Med Stetin*. 2006;52 Suppl 3:37-47
- O'Sullivan, S. (2007). Examination of motor function: Motor control and motor learning. In S.B. O'Sullivan, & T.J. Scmitz (Eds). *Physical Rehabilitation* (5th ed.). Philadelphia , PA: F.A. Davis Company.
- Overland, L. & Merkel-Walsh, R. (2013). A sensory-motor approach to feeding. Charleston, SC: TalkTools.
- Paladino, L. (2017). IBCLC as a team leader for the assessment and management of the nursing infant with lip and tongue tie. Presented at: Connecting the Dots in TOTs. New York, N.Y.
- Price-Emanuel, M. (2017). Benefits of bodywork. Retrieved from : <http://www.ankyloglossiabodyworkers.com/>
- Priyanka, M., Sruthi, R., Ramakrishnan, T., Emmadi, P., & Ambalavanan, N. (2013). An overview of frenal attachments. *Journal of Indian Society of Periodontology*, 17(1), 12-15. <http://doi.org/10.4103/0972-124X.107467>
- Raghevendra-Reddy, N., Marudhappan, Y., Devi, R. & Narang, S. (2014). Clipping the (tongue) tie. *Journal of Indian Soc Periodontal*, 18 (3); 395-398.
- Ricke, L.A., Baker, N.J., Madlon-Kay, D.J. & DeFor, T.A. (2005). Newborn tongue-tie: Prevalence and effect on breast feeding. *Journal of American Board of Family Practice*, 18(1), 1-7
- Roche, W., Eicher, P., Martorana, P., Berkowitz, M., Petronchak, J., Dzioba, J. & Virtello, L. (2011). An oral, motor, medical and behavioral approach to pediatric feeding and swallowing disorders: An interdisciplinary model. *Perspectives on Swallowing and Swallowing Disorders (Dysphagia)*, 20, 65-74.
- Rosenfeld-Johnson (2009). *Oral placement therapy for speech clarity and feeding*. Charleston, SC: TalkTools.

Sawisch, T. (2011). *Oral Surgery for the general practitioner. Principles and Practice of Laser Dentistry*. St. Louis: Mosby Elsevier.

Schuster, J.L. (2014). "Just a snip," I was told, but that was just the start of my troubles. *Health Affairs: Washington Post*. Retrieved From: https://www.washingtonpost.com/national/health-science/just-a-snip-i-was-told-but-that-was-just-the-beginning-of-my-troubles/2014/07/21/270b4d78-f569-11e3-a606-946fd632f9f1_story.html?utm_term=.b8e2685048da#comments

Segal, L. M., Stephenson, R., Dawes, M., & Feldman, P. (2007). Prevalence, diagnosis, and treatment of ankyloglossia: Methodologic review. *Canadian Family Physician*, 53(6), 1027-1033.

Sethi N., Smith D., Korteque S., Ward V.M. & Clarke S.(2013). Benefits of frenulotomy in infants with ankyloglossia. *Int J Pediatr Otorhinolaryngol*, 77(5): 762-5.

Siegel, S.A.. (2017) Advancements in diagnosis and laser surgery of ankyloglossia from infancy to adulthood: impacts on breast feeding, feeding , speech and airway. Presented at Connecting the Dots in TOTs. New York, N.Y.

Siegel, S.A., (2016). Aerophagia induced reflux in breastfeeding infants with ankyloglossia and shortened maxillary labial frenulu (Tongue and Lip Tie). *International Journal of Clinical Pediatrics*, 5(1):6-8.

Srinivasan, A., Al Khoury, A., Puzhko, S., Dobrich, C., Stern, M., Mitnick, H., & Goldfarb, L. (2018). Frenotomy in Infants with Tongue-Tie and Breastfeeding Problems. *Journal of Human Lactation*. <https://doi.org/10.1177/0890334418816973>

Strauss, R.A. & Coleman, M. (2011). Lasers in major oral and maxillofacial surgery". In *Convissar, RA. Principles and Practice of Laser Dentistry -Mosby*, pp. 234-250.

Taylor, P. (2011) Benefits and drawbacks of frenectomy. Retrieved From: <http://www.speechpathology.com/ask-the-experts/benefits-and-drawbacks-frenectomy-1557>

The Breathing Clinic. (2016). Oral facial habits: habits of the mouth and face. Retrieved from: <http://www.thebreathingclinic.com/orofacial-habits>

- Unangst, M. (2015) Chiropractic care and the breastfed infant. Milk on Tap. Retrieved from :
<https://milkontap.com/chiropractic-care-breastfed-infant/>.
- Vallone, S. (2014). Chiropractic care for the breastfeeding dyad. *Leaven*, 39(6): 126-127.
- Van Riper, C. (1958, 1954, 1947) [Speech Correction: Principles and Methods](#). Englewood Cliffs: Prentice-Hall.
- Vitruk, P. et al. (2017). *Oral soft tissue laser ablation and coagulation physics*. Color Atlas of Infant Tongue-Tie and Lip-Tie Laser Frenectomy. PanSophia Press.
- Walsh F. & Kelly D. (1995). Partial airway obstruction after lingual frenotomy. *Anesth Analg*, 80;1066-1067
- Wigdor, H., Walsh, J., Featherstone, J.D.B., et. al. (1995). *Lasers in dentistry*. *Lasers Surg Med*, 16, 103-133.
- Wilson, J. M. (Ed.) (1978) *Oral-motor function and dysfunction in children*. Conference proceedings, May 25-28, 1977. Chapel Hill: University of North Carolina.
- World Health Organization (WHO), & UNICEF. (1990). Innocenti declaration on the protection, promotion and support of breastfeeding. Retrieved from:
<http://www.unicef.org/programme/breastfeeding/innocenti.htm>
- World Health Organization (WHO). (2003). Global strategy for infant and young child feeding. Retrieved from:
<http://whqlibdoc.who.int/publications/2003/9241562218.pdf>
- Yang, H.M., Woo, Y.J., Won, S.Y., Kim, D.H., Hu, K.S. & Kim H.J. (2009) Course and distribution of the lingual nerve in the ventral tongue region: anatomical considerations for frenectomy. *Journal of Craniofacial Surgery*, 20(5):1359-63.
- Young, E. H., & Hawk, S. S. (1955). *Moto-kinesthetic speech training*. Stanford, CA: Stanford University Press.
- Yousefi, J., Tabrizian Namani, F., Raisolsadat, S.M.A., Gillies, R., Ashkesari, A. & Meara, J.G. (2015). Tongue-tie repair: z-plasty vs. simple release. *Iranian Journal of Otorhinolaryngology*, 27(79):127-135.

Zaghi, S. , Valcu0Pinkerton, S. , Jabara, M., Norouz-Knutsen, L., Govardhan, C., Moeller, J., Sinkus, V., Thorden, R., Downey, V., Camacho, M., Yoon, A., Hang, W.M., Hockel, B., Guilleminault, C. & Lui, Y.C.L. (2019). Lingual frenulopasty with mofucntional therapy: exploring safetly and efficacy in 348 cases.
Laryngoscope Inverstigative Otolaryngology: DOI:
10.1002/liv.2.297

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