Introduction

Breastfeeding has not always been looked upon as a modern, healthy method of providing infants with good nutrition. During the Victorian Age, women were placed in tight corsets and bound up, making the idea of nursing difficult, if not impossible. In the 20th century, infant formulas were developed and proposed as superior and a scientific way to feed infants. Baby formula was advertised to provide infants with all the essential nutrients and therefore decreed to be superior to breastfeeding infants. It was not until the natural childbirth movement of the 1970s when home birthing, midwife deliveries and proper mental preparation, rather than medications, came into vogue that the resurgence of breastfeeding began to return to the forefront.

It may appear that oral health and breastfeeding are unrelated, but the opposite is in fact true. The facts are real, and for pediatric dentists who routinely treat newborns and infants, the need for dental intervention is very real. There are two significant health areas where breastfeeding and oral health come together. The oral health issue impacts the infant and as a consequence, can impact the mother.

The first indication of an oral health problem in the infant becomes evident in the first few hours after birth. Immediately after birth or no later than after the first attempt at nursing, it can become evident that a problem exists with the tongue. The lingual frenum attaching the tongue to the floor of the mouth may be attached too close to the tip of
the tongue. Ankyloglossia or tongue-tie may prevent the infant from being able to properly nurse. Unable to move the tongue adequately, the infant can’t latch onto the breast and consequently nursing can become painful for the mother and a frustrating experience for both mother and child. Pediatric dentists are being called upon more frequently today to address the problems associated with ankyloglossia. These infants don’t have teeth, but their dental problem of ankyloglossia, if not treated, sets into motion a cascade of problems that will plague them throughout their lives.

The Tongue and Swallowing

The tongue is an amazing muscle meant to move freely at one end while the other end is attached to eight other muscles. As an embryo, the tongue muscle is attached to the floor of the mouth. Prior to birth, this attachment partially disappears and in most cases, naturally moves back from the tip, allowing for adequate tongue movement. The infant’s tongue needs to move adequately to hold the nipple against the rugae in the roof of the mouth. To suckle from the breast, the tongue holds the nipple against the roof of the mouth and the tip of the tongue pushes up against the palate, followed by the middle of the tongue and finally, the back of the tongue. This rocking or peristaltic motion continues to suckle the milk from the breast.

The rocking motion of the tongue to suckle milk from the breast and swallow provides the basis for swallowing in general, exerting pressure against the palate with each swallow. Humans swallow approximately 500 times per day the gentle pressure against the palate with each swallow stimulates normal palatal growth.

Ankyloglossia

In cases of ankyloglossia, the ligament remains, connecting the tip of the tongue to the floor of the mouth. The lingual frenum may remain at the tip or have moved back only partially, causing a restriction of tongue.

In newborns with ankyloglossia, the tongue can’t reach out far enough to latch onto the breast. Only part of the nipple and areola are held in the infant’s mouth. The ankyloglossia ties down the tip of the tongue and can also extend to some of the muscles in the middle and back of the tongue. If the infant can’t extend the middle and back of the tongue up against the nipple and press against the roof of the mouth, the milk is not expressed from the breast. Because the infant can’t effectively latch on and create a full seal with the nipple, they don’t get enough milk and sometimes swallow air instead of milk. Failure of the infant to properly latch onto the nipple and suckle adequate amounts of milk can lead to extremely short nursing periods and a serious outcome: failure to thrive.

Failure to swallow using the tongue in a rocking motion, from tip to middle to back against the palate will impact swallowing as the child grows. Without the tongue pressure against the palate with every swallow, the palate grows narrow and high instead of broad and flat. This impacts tooth alignment, occlusion and airway development as the child grows and develops.

The mother is affected by the infant gumming of the nipple. In a normal infant, the tongue rests out and over the gum pad of the mandibular arch. The tongue-tied tongue does not reach out far enough to rest over the gum pad. In these cases, the nursing mother’s nipple rubs against the gum pad and not the baby’s tongue, which can cause severe pain and denuding of the nipple. This can lead to infection of the nipple, mastitis and thrush. Infants with ankyloglossia can suffer symptoms of colic due to swallowing air when a proper seal with the breast isn’t made. These infants also fall asleep during nursing and in some cases they cannot effectively hold onto a pacifier.

1. Pediatric Dentistry V29 NO.7 Reference Manual 01/08 PG 82 Clinical Guidelines
2. Kotlow, L. Ankyloglossia (tongue-tie a diagnostic and treatment quandary); Quintessence International 1999; 30(4) 259-262
3. Kotlow, L: Journal of Pediatric Dental Care Oral Diagnosis of Abnormal frenum attachments in neonates and infants Vol.10 no.3 October 2004
6. Rudney, J., Larson, C. The prediction of saliva swallowing frequency in humans from estimates of saliva...
Diagnosis and Treatment of Ankyloglossia

Diagnosis of ankyloglossia can be done by observing the tongue for function and mobility. Talking to the nursing mother to understand her symptoms provides additional information. For a newborn or infant oral exam, a knee-to-knee position works best, with the clinician and the mother sitting knee to knee. The baby’s head should be placed in the clinician’s lap with the mother stabilizing the infant’s body and arms in her lap, with the baby’s head facing the mother. Clinical assessment of the lingual frenum is easily done by dragging the gloved index finger under the tongue across the mouth in the molar area. Any interference, from a small “speed bump” to a complete “barrier,” indicates a problem with the lingual frenum. The sooner the restricted frenum is revised, the sooner the infant can effectively move the tongue, swallow and nurse. There is no reason to put off treatment of ankyloglossia. Dental clinicians should recognize the signs and symptoms of ankyloglossia and know to whom they can refer for treatment, if they do not provide it themselves.

In infants where the lingual frenum has been revised and there still remains a breastfeeding difficulty, looking at the attachment of the labial frenum may show a very tight attachment of the upper lip to the gingival tissue. A careful examination of this tissue may reveal that the upper lip is not able to fully flange upward when the infant tries to latch onto the nipple and therefore has a poor or incomplete latch and the breastfeeding problems continue.

In the late 1990s, lasers were first introduced to dentistry for soft-tissue surgery. Before lasers, either a blade or scissors were used to release the lingual frenum. Today the need to place an infant into the operating room under a general anesthetic is no longer the standard of care children should require. Dental lasers provide the dentist a fast, safe means of correcting this abnormality in less than a minute. Using the laser, there is very little post-surgical pain, swelling or discomfort. Lasers are a safe alternative to blades or scissors and require as little as 30-60 seconds. Using either a topical anesthetic or a small amount of a local anesthetic, the laser revision of the frenum is done quickly.

Obstacles to Care

Many myths and unfounded ideas interfere with the diagnosis and treatment of ankyloglossia in newborn infants. One myth is that ankyloglossia does not really exist. When ankyloglossia is acknowledged, many believe falsely that tongue-ties do not interfere with breastfeeding and as such do not cause maternal discomfort. Another myth is that the lingual frenum will correct itself or the infant will outgrow it. Along with the disbeliefs relating to ankyloglossia, clinicians often ignore the problems, which can develop as the infant grows. Ways this problem affects children later in life includes: orthodontic malocclusions, mouth breathing, dental caries and speech abnormalities. Failure to refer an infant or child for surgery to correct ankyloglossia occurs because many clinicians falsely believe the surgical revision requires the procedure to be completed in the operating room under general anesthesia. Many are of the belief that the ligament will stretch and the child will outgrow ankyloglossia. In children with a restricted frenum, it may appear that the tongue is not tied to the floor of the mouth, but the middle and back of the tongue may be restricted, preventing proper swallowing. Looking beyond the tip of the tongue is essential to determine if this amazing muscle is functioning properly.

Summary

Oral health and breastfeeding are indeed related. As mothers, lactation consultants and physicians realize the impact of ankyloglossia, general dentists and pediatric dentists in particular will be treating more newborns and infants. Early diagnosis and frenum surgery will help both the infant and the mother and set the child up for a healthy swallowing pattern going forward. Many dentists possess the skills and confidence to perform frenum revision surgery. Others should refer these infants to a qualified specialist who is familiar with treating ankyloglossia.

Have you come across a case of ankyloglossia? Share at Hygienetown.com/magazine.aspx.

Author’s Bio

Dr. Lawrence A. Kotlow is a pediatric dentist serving the specialized needs of children. He is known throughout the country for his innovative techniques and caring manner. Dr. Kotlow has written many articles, book chapters, and lectures throughout the world on the diagnosis and laser treatment of labial and lingual frenums. For more information visit: www.kiddsteeth.com.