

## CASE REPORT

# Successful breastfeeding in a motivated one-arm amputee

Maureen Rooney \*

Women's Health Services, Houston Methodist Hospital, Houston, United States

**Received:** July 14, 2015

**Accepted:** October 8, 2015

**Online Published:** January 27, 2016

**DOI:** 10.5430/jnep.v6n6p28

**URL:** <http://dx.doi.org/10.5430/jnep.v6n6p28>

## ABSTRACT

A mother with an amputation of her left arm (from the age of 4 years old) delivered a healthy infant at our hospital and was determined to exclusively breastfeed for 6 months and wanted to continue to breastfeed for 1 year. Whereas bottle feeding would have required two arms or an assistant, strategies were developed that enabled the mother to successfully breastfeed independently. This report details methods that can be used to enable breastfeeding in mothers with either permanent or temporary use of only one arm. The purpose of this article is two folds: 1) to heighten awareness of successful breastfeeding by mothers who have use of only one arm, and 2) to delineate successful techniques to assist mothers with arm amputations.

**Key Words:** Breastfeeding, One-arm amputee, Mother and infant

## 1. BACKGROUND

Most mothers decide to breastfeed because of the nutritional and immunological benefits for the baby and mother. Pediatricians and obstetricians strongly encourage all mothers to breastfeed exclusively for 6 months and to continue to breastfeed for 1 year or longer as mutually desirable.<sup>[1,2]</sup> However, a mother with a medical condition may not get the encouragement to breastfeed that other mothers receive. This may be the result of the medical professional's own lack of experience dealing with certain patients. When a mother with a one-arm amputation (from the age of 4 years old) delivered at our hospital, breastfeeding was difficult to initiate, but the mother's motivation and drive led to a more successful outcome than had she chosen to bottle feed. Her goals were to exclusively breastfeed her baby independently for 6 months and to continue to breastfeed for 1 year.

A Fact Sheet of the National Limb Loss Information Center suggests that approximately 2 million people in the United

States are living with limb loss.<sup>[3]</sup> Ziegler-Graham *et al.*<sup>[4]</sup> estimated that approximately 1.6 million persons in the United States in 2005 lived with an amputation, and they estimated that this number will increase in the future. Of that number, approximately 541,000 (or 34%) have an upper limb amputation. Of the approximately 1.6 million persons in the United States with amputations, approximately 65,856 (or 4.2%) are female or are of childbearing age.<sup>[4]</sup> It is difficult to say how many women of childbearing age have an upper limb amputation, but it may be 4.2% of the 541,000, or approximately 22,722 women.

These statistics suggest that there should be some women who enter their childbearing years with an amputation. However, despite working as an IBCLC for over 10 years and being a labor and delivery nurse, I have never before helped a mother breastfeed with an upper limb amputation.

To assist individuals with limb amputations in the performance of specific activities of daily living, Ide<sup>[5]</sup> suggests that

\*Correspondence: Maureen Rooney; Email: [marooney@houstonmethodist.org](mailto:marooney@houstonmethodist.org); Address: Women's Health Services, Houston Methodist Hospital, Houston, United States.

one must first assess the person's physical and psychological condition, because both affect performance and ultimately quality of life and life satisfaction. Having a limb amputation places physical challenges on any new activity, but in a new breastfeeding mother, there are additional stressors to consider.

Jenkins and Westhus<sup>[6]</sup> demonstrated that in the early postpartum period, the success of one parenting task promotes the success of others. Because breastfeeding is often seen as the first mothering task, being successful at breastfeeding can increase one's self-esteem and confidence about accomplishing other mothering tasks. According to Mercer,<sup>[7]</sup> increasing breastfeeding success can increase the mother's self-esteem, which increases mother-infant bonding.

Lauwers and Swisher<sup>[8,9]</sup> developed a model for counseling breastfeeding mothers that incorporates the mother's needs, the counselor's skills, and the counselor's traits to lead to the ultimate satisfaction of the mother's breastfeeding abilities. They stated that the mother's needs include the following: 1) emotional support, 2) a decrease in physical stress or an increase in physical comfort, 3) an understanding of her problem or concern and the choices available, and 4) how to modify her actions to deal with her problem or concern.<sup>[8,9]</sup> Counseling skills can include listening, influencing, facilitating, informing, and problem solving. The counselor's traits can include empathy, concern, openness, respect, clear communication, and flexibility.

For optimal lactation care, using this counseling model to address the mother's needs can promote better breastfeeding skills, promote greater breastfeeding success, increase the mother's self-confidence, and enhance the mother-infant interaction. This was my goal for this mother.

## 2. CASE REPORT

### 2.1 Day of delivery, Day one

A 30-year-old gravida 1/para 1 mother with a left arm amputation had a spontaneous vaginal delivery at our hospital at 1,900 hours of a 37.5-week gestation healthy baby boy weighing 6 pounds, 11 ounces. The mother had a well-formed arm, forearm, and hand on the right, but only 10 inches of arm on the left with no forearm or hand. The labor and delivery and nursery nurses assisted the mother throughout all three breastfeeding sessions that first night and early morning.

### 2.2 Day two

#### 2.2.1 8 AM

On the morning of day two, the lactation consultant was contacted by the nursery nurses and physician to assist the mother with feedings. The baby was at that time about 12

hours old. I was told that the mother was college educated, was a writer by profession, and had read extensively about the benefits of breastfeeding. The mother stated that she desired to breastfeed exclusively for 6 months, continue for 1 year, and planned to pump her breasts starting at 2 to 4 weeks.

When I arrived at the hospital room, I introduced myself to the parents to inquire about their main concerns, breastfeeding or otherwise. The mother was well-educated but still needed general breastfeeding information. I listened as she discussed with rapid speech and tense shoulders several issues of concern. She had specific requests for help 1) exploring unique techniques to position her baby at the breast with a left amputated arm; 2) preventing backache from overuse syndrome, which can occur with the use of only one arm; and 3) knowing if the baby was getting enough breastmilk. Like most mothers, she wanted to make sure that she could achieve her goal without compromising her own or her baby's well-being. Her husband was at her side and was very supportive.

Positioning was the mother's number one concern. The mother verbalized that she was most interested in exploring positions that would allow her to breastfeed independently and that she would like to work together with me during this time in the hospital to achieve that goal. We explored that concern first. The mother stated that she was very independent at home and that she would like to eventually be independent with her baby care and breastfeeding. She was resolute about taking care of her baby herself and stressed the importance of breastfeeding to her. She felt that she would be able to "mother" her own baby if she breastfed and preferred to not have someone else perform the mothering task of feeding her baby in the first few weeks. Her long-term goal was to breastfeed without any assistance.

After reviewing normal newborn and maternal reflexes, newborn feeding behaviors, and triggers for breastfeeding, we discussed several positions from which to choose. She started with what she felt would work best with her range of motion involving her amputated left arm. After discussing the options, she decided on the football hold for the left side and the cross-cradle hold for the right side. The pillows were strategically placed, to wedge the baby in without falling, allowing the baby to be slightly on top of the breast in a laid-back position, with the mother leaning slightly back. In both positions, the baby was allowed to come to the mother, and not the mother leaning into the baby. Two concepts were important here: 1) the breastfeeding position had to work with gravity and 2) the mother had to try different angles of recline for her and the baby until it felt comfortable.

For the football hold on the left side, the baby's body was placed horizontally along the mother's right side on several pillows. The baby's feet were towards the head of the bed, and the baby's head was placed slightly on top of her left outer upper quadrant of the breast. The mother's partial left arm helped maintain the baby's stability. The mother then used her right hand to massage and shape the breast by placing her thumb and index finger 2 inches from the nipple, parallel to the baby's nose and chin, respectively. For the cross-cradle hold on the right side, the mother was in a semi-reclined position with her baby lying in a stomach-to-stomach position on top of her. The head of her baby was slightly on top of her inner upper quadrant of the right breast. The baby was wedged in with several pillows and the mother used her partial left arm for stability. The mother's right hand encircled her right breast to massage and shape the right breast in the same way as for the other breast. In both positions, gravity helped to hold the baby in place and the pillows supported the baby for better alignment. The baby breastfed for 40 minutes on the right side and for 20 minutes on the left side. As the mother's milk let down during this feeding, the baby self-attached more, requiring less assistance by another person or hand. Except for the first 10 minutes at the beginning of this feeding on each side, the mother was self-sufficient. We discussed the option of either breastfeeding on both sides or breastfeeding on only one side per feeding if that was easier. She was not sure at this time which would work best, but was at least aware of her options.

The second concern was overuse syndrome. The mother stated that she frequently experienced backaches in her other activities of daily living because of overuse of her right arm. She desired information about baby slings and baby carriers, especially ones from which she could breastfeed. We discussed that slings may increase backache owing to their low center of gravity, but that a carrier that holds a baby closer to the mother's center of gravity may be better in preventing backaches. With the consent of the parents and after discussion with the physician, a consult for occupational therapy was made for the next day.

The third concern was that of most parents, How do I know that my baby is getting enough breast milk? I reviewed the evidenced-based practice information from the American Academy of Pediatrics,<sup>[1]</sup> the International Lactation Consultants Association,<sup>[10]</sup> and the Academy of Breastfeeding Medicine<sup>[11]</sup> guidelines and protocols about the signs and symptoms of a well-fed baby. In this case, the baby was having adequate voids and stools, had minimal weight loss, and was breastfeeding effectively.

The mother asked normal breastfeeding questions about the

best way to get off to a good start. Again, we reviewed the evidenced-based practice recommendations as stated in our hospital policy on breastfeeding from "Ten Steps to Successful Breastfeeding."<sup>[12]</sup> This important information summarizes the best way to achieve and sustain a full milk supply.

One common concern not mentioned by the mother initially but that could have become a problem was nipple soreness. At first, the mother stated that the latch was causing nipple pain until we were able to get a deeper nipple latch by having her use a sandwich hold. She was able to breastfeed better on the left side because she could use her right hand to get her baby on deeper and use wakening techniques and breast compression (when possible) for a more effective feeding. I reviewed how to prevent and treat sore nipples and the normal signs of an adequate breastfeeding (*e.g.*, to watch closely for enough wet and soiled diapers). We discussed the importance of breastfeeding on demand, of breastfeeding for as long as the baby desires (which may be only 10 min or about 20 to 40 min per side), of positioning the nipple in deeply, and of using wakening techniques.

### 2.2.2 6 PM

The baby had been sleepy earlier in the day, but at this time was showing hunger cues. The mother requested trying the side-lying position. The mother lay on her left side, with pillows placed under the baby and behind the baby's back. The mother had her head slightly inclined with her partial left arm under the baby's pillow and her right hand shaping and massaging her left breast as done earlier. Even though the mother and father worked well together to achieve a deep latch, the baby had difficulty latching. The baby either persistently dimpled his cheeks when sucking or stopped sucking after 1 to 2 mins, despite being hungry. The mother also complained of nipple pain at this time. Even though a deeper latch could be accomplished with assistance, it was difficult at this time for the mother to breastfeed independently without assistance. In the side-lying position and in some of the laid-back positions, the nipple was less prominent. I suggested the use of a breast pump for 5 minutes before the feeding. The mother decided to use the breast pump, which proved to be helpful to shape the nipple, to give the baby focus and to stimulate let-down, and to entice the baby to latch more deeply with less nipple pain. This appeared to arouse the baby's senses, and the baby sustained sucking effectively for 30 minutes. The baby was content after this breastfeeding. The mother noted that she now had no nipple pain, and she felt that she was able to breastfeed with less assistance from another person than on day one.

By the end of day two, the baby was having appropriate voids and stools, fell asleep after every breastfeeding, and

only required help the first 10 min on each side, all of which were evidence for effective breastfeeding. The mother at the end of the second day stated she felt better about her breastfeeding, especially since her baby “appeared” well-fed. The mother’s speech was calm and her body posture was relaxed. Both parents stated that they wanted to support the work involved in breastfeeding and verbalized understanding the basics.

### 2.3 Day of discharge, Day three

It was important to involve occupational therapy to gain more insight about different techniques that could help to accomplish the mother’s goal to breastfeed without assistance. When the occupational therapist arrived, she assessed the patient and her abilities. The therapist discussed devices that support the baby to allow the mother more independence in feeding and caring for her baby and ways of holding the baby with little or no backache. The occupational therapist used the infant warmer, turned off, to place the baby waist high for the mother to scoop up with her right arm going towards her chest. The mother walked towards the bed holding the baby in her right arm, transferring herself and the baby to the bed. She was then able to get herself and her baby in the bed by backing up to the bed. She ended up with her baby held closely to her chest by her right arm in the laid-back cross-cradle position for breastfeeding on the right side. The mother still required assistance for the initial latch.

The occupational therapist reviewed ways to hold, transfer, and carry the baby with the use of a vertical baby carrier, tabletops at waist level, and wedges placed under the baby to help lift the baby. These devices could also be used to assist with bathing the baby, changing diapers, and dressing the baby. The use of a wedge under the baby and having the baby at waist level on a tabletop helped the mother to extend the use of her one arm to accomplish more with less strain on her muscles. The occupational therapist also discussed ways to decrease the mother’s backache while caring for her baby, which included devices such as 1) baby carriers that hold a baby vertically while sitting, closer to the mother’s center of gravity; 2) wedges or firm pillows that act as an extension of the mother’s arm to help lift; and 3) step stools and tabletops that can be used to bring the baby closer to waist level, thus promoting good body mechanics when transferring or picking up the baby.

The mother’s milk supply appeared to have increased as demonstrated by the visible veins in her breasts and the baby self-attaching more, requiring less assistance by another person or hand. We found that the mother requested and needed only minimal assistance for the first 3 minutes of each feeding now. The mother had been primarily using the football

hold for the left side and the cross-cradle hold for the right side. She now wanted to know other positions or ways to complete other mothering tasks with one arm.

Several articles about breastfeeding and mothering one-handed were given to and discussed with the parents, occupational therapist, physicians, nursery staff, and postpartum staff.<sup>[13,14]</sup> Although the mother needed help setting up the pillows and placing the baby nearby, the baby was able to self-attach and was content throughout the feeding. At the time of discharge, the baby was having plenty of wet and soiled diapers for his age, and his weight loss was within normal limits at 6%. We reviewed the normal breastfeeding information regarding how to prevent and treat engorgement and sore nipples, types of pumps, using hands-free pumps, milk storage, cleaning equipment, community resources for postpartum mothers and for amputees (Amputee Coalition), and phone numbers for lactation follow-up. We reviewed all the normal signs and symptoms of recognizing a newborn’s hunger cues and the signs and symptoms of a well-fed baby. Both parents verbalized understanding the principles involved with breastfeeding and in taking care of their newborn.

### 3. DISCUSSION

In counseling a mother, Lauwers and Swisher<sup>[8,9]</sup> state that giving the mother emotional support and addressing her immediate physical discomfort can help the mother understand her options better for positive action. In this case, it was important to allow the mother to express herself before any education could take place. Emotional support was given by being quiet, listening to the mother, and showing empathy for her concerns. It was important that emotional support be given by actively listening, validating the mother’s feelings, and praising her efforts before any problem solving could take place. The mother clearly verbalized that she wanted to exclusively breastfeed, stating that she wanted to bond with her baby. She did not want to have someone else “mother her baby”. Being successful at the first mothering task of breastfeeding was important to her. This would allow her to achieve more success at other mothering tasks and increase her self-esteem. Counseling her was more than just showing her how to breastfeed, but problem solving with her and demonstrating that she could eventually breastfeed without any assistance. She was very articulate, but her anxiety was noticeable with her nonverbal behavior, *e.g.*, tense shoulders and rapid speech. It was crucial that this mother have a very positive experience to provide the maternal confidence that all mothers need to continue to breastfeed.

Addressing the mother’s physical discomfort allowed her to better focus on her baby. Nipple pain could have been

an issue if it had been ignored at the onset. The mother liked being introduced to the pump as a means of achieving a more effective, less painful feeding and for gaining long-term knowledge for future pumping. Use of the breast pump allowed the baby to latch easier and decreased the mother's nipple pain and shoulder pain. In addition, she was able to breastfeed more effectively, develop better milk production, and gain confidence in her first mothering skill of breastfeeding.

Overuse syndrome is common in people with an amputation of one limb.<sup>[15]</sup> With the mother's input, we were able to get the baby to breastfeed in a laid-back position with a lot of pillow support to prevent the mother's shoulder pain that usually developed from the strain of overusing her right arm. The occupational therapist discussed devices to use and ways to use them to promote good body mechanics to prevent backache and promote safety in transferring and caring for the baby. Through the involvement of the occupational therapist, the mother was able to learn how to transfer her newborn from the table to the bed without straining her shoulder and using her center of gravity better and gained confidence from her increased independence.

After several lactation sessions, the mother understood more and more the skills she needed to improve and what devices she needed to assist her in her breastfeeding and care of her baby. She was going to explore different baby carriers and wedges. She found that the stiff baby pillow that wrapped around her and buckled at the back was tremendously helpful. She continued to use this device for every feeding and all of her baby care, including changing diapers, carrying her baby, and transferring the baby from place to place.

After this mother received appropriate support and understanding of what she needed to succeed at breastfeeding, she was ready to take positive action. She was breastfeeding exclusively at discharge and stated that she was planning to breastfeed for 1 year. After follow-up, she had exclusively breastfed for 6 months and continued to breastfeed for 14 months. She started pumping a little in the hospital, but did not start pumping to store and give her baby expressed breast milk until the baby was 1 month of age. She went back to work at 4 months. She had so much expressed milk stored that she donated her frozen breast milk to the milk bank. She now is a contributing writer for the Amputee Coalition and shares her insights on parenting.

The mother stated that she found it interesting that the least helpful advice was the use of the vertical baby carrier, because it took two hands to get the baby inside. Her one big problem, and one that she wished she had not ignored, was her overuse syndrome. Overusing her right arm repeatedly

without strengthening her left-sided muscles led to weakness, tendonitis, and less use of her right arm. Overuse syndrome is unavoidable, but can be minimized by taking one's time and building up the other side with exercises.

One of the most important things for the mother in this case was being introduced to how to express her milk and use the breast pump while in the hospital. Once she started pumping and allowing others to help feed her baby the expressed breastmilk, her life became much easier. Also, very important to her success was knowing that help was available in the hospital and at home with her family. She also discovered that using the firm baby pillows that wrap around and buckle in the back was crucial to her success with breastfeeding and baby care. She continued using this pillow for all 14 months of her breastfeeding. She eventually breastfed mostly only the left side in the cross-cradle hold and pumped on the right side.

At the time of this writing, there were only two case reports in the literature about mothers breastfeeding with an arm amputation.<sup>[13,14]</sup> It is interesting to note the differences in Thomson's case report from the present one.<sup>[13]</sup> For example, the mother in Thomson's report breastfed better leaning forward and by straddling the baby on her thigh. Also, the mother preferred using the manual breast pump and the vertical sitting position carrier.<sup>[13]</sup> One noteworthy piece of information in that report was that the mother had overuse back pain but took steps to correct it early.<sup>[13]</sup> However, the mother was able to achieve breastfeeding without assistance, similar to this case.<sup>[13]</sup>

In Dunne and Fuerst's case report, similar to this case, pillow support was crucial for successful breastfeeding.<sup>[14]</sup> However, in that case, the mother was never able to breastfeed without assistance.<sup>[14]</sup>

#### 4. CONCLUSION

The goal in this case was to empower the mother through advocacy, support, and education so that she could reach her full potential. The father supplied emotional support. The interdisciplinary hospital personnel worked together as a team with the mother and father to achieve a wonderful outcome. The team listened to the mother's needs (to be independent in feeding and caring for her baby), decreased her physical discomfort, presented choices, and modified actions to meet her needs. This promoted better breastfeeding skills, which led to successfully breastfeeding as long as the mother desired. As a result, the mother's increased self-confidence and enhanced mother-infant interaction were evident in her comments. She wanted other mothers with amputations to feel that not only is it possible to successfully breastfeed and

care for your baby, but it also can be very rewarding for the entire family. We have kept in touch over the years, and she has given me an increased understanding of mothers with

amputations and opened my eyes to the full potential of a motivated mother.

## REFERENCES

- [1] American Academy of Pediatrics, Section on Breastfeeding. Policy statement: breastfeeding and the use of human milk. *Pediatrics*. 2012; 129(3): 827-841. PMID:22371471 <http://dx.doi.org/10.1542/peds.2011-3552>
- [2] American College of Gynecologists, Committee on Obstetric Practice: Committee Opinion. Breastfeeding: maternal and infant aspects. *Obstet Gynecol*. 2007; 109(2): 479-480. <http://dx.doi.org/10.1097/00006250-200702000-00064>
- [3] National Limb Loss Information Center. Fact sheet: amputation statistics by cause limb loss in the United States [Internet]. 2015 [cited 2015 Jul 6]. Available from: <http://www.amputee-coalition.org>
- [4] Ziegler-Graham K, Mackenzie EJ, Ephraim PL, *et al*. Estimating the prevalence of limb loss in the United States: 2005 to 2050. *Arch Phys Med Rehabil*. 2008 Mar; 89(3): 422-429. PMID:18295618 <http://dx.doi.org/10.1016/j.apmr.2007.11.005>
- [5] Ide M. Sexuality in persons with limb amputation: a meaningful discussion of re-integration. *Disab Rehabil*. 2004; 26(14/15): 939-943. PMID:15497925 <http://dx.doi.org/10.1080/09638280410001708977>
- [6] Jenkins RL, Westhus NK. The nurse role in parent-infant bonding: overview, assessment, and intervention. *JOGN Nurs*. 1981; 10(2): 114-118. PMID:6907500 <http://dx.doi.org/10.1111/j.1552-6909.1981.tb00844.x>
- [7] Mercer RT. The nurse and maternal tasks of early postpartum. *MCN Am J Matern Child Nurs*. 1981; 6(5): 341-345. <http://dx.doi.org/10.1097/00005721-198109000-00012>
- [8] Lauwers J, Swisher A. *Counseling the Nursing Mother: a Lactation Consultant's Guide*. Wayne, NJ: Avery Publishing Group Inc; 1983. 3-26 p.
- [9] Lauwers J, Swisher A. *Counseling the Nursing Mother: a Lactation Consultant's Guide*. Sudbury, MA: Jones & Bartlett Learning; 2011. 93-114 p.
- [10] International Lactation Consultant Association, Revision Task Force. *Clinical Guidelines for the Establishment of Exclusive Breastfeeding*, 2nd ed. Morrisville, NC: ILCA; 2005.
- [11] Protocol Committee Academy of Breastfeeding Medicine. ABM clinical protocol #5: Peripartum breastfeeding management for the healthy mother and infant at term revision, June 2008. *Breastfeed Med*. 2008; 3(2): 129-32. PMID:18578059 <http://dx.doi.org/10.1089/bfm.2008.9998>
- [12] Texas Hospital Association (THA) and the Texas Department of State Health Services (DSHS). Texas 10 Step Program [Internet]. [cited 2015 Jul 7] Available from: <http://texastenstep.org/>
- [13] Thomson VM. Breastfeeding and mothering one-handed. *J Hum Lact*. 1995; 11(3): 211-215. <http://dx.doi.org/10.1177/089033449501100324>
- [14] Dunn G, Fuerst K. Breastfeeding by a mother who is a triple amputee: a case report. *J Hum Lact*. 1995; 11(3): 217-218. <http://dx.doi.org/10.1177/089033449501100325>
- [15] Gambrell C. Overuse syndrome and the unilateral upper limb amputee: consequences and prevention. *JPO*. 2008; 20(3): 126-131. <http://dx.doi.org/10.1097/jpo.0b013e31817ecb16>