

## Treating Postpartum Breast Edema With Areolar Compression

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### Abstract

This case study describes an occurrence of gross edema in the breast and areolar tissue of a mother in the first 2 days postpartum that interfered with the early initiation of breastfeeding. The mother developed severe generalized fluid retention during labor and early postpartum. Her breasts were naturally large. The edema in her breasts made the areola and nipple tissue firm and nonpliable. The mother successfully latched her newborn onto her breast after being shown areolar compression (AC), a technique developed and named by the authors. AC reduces nipple and areola edema by using gentle positive pressure on the areola. The baby continued to successfully latch onto the breast after AC was used and taught to the mother. *J Hum Lact.* 20(2):223-226.

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Increased water retention is a normal physiological alteration of pregnancy, as the gravid woman has an average increase of up to 8.5 L of total body water during pregnancy. The majority of this fluid accounts for increases in maternal blood volume, fetus, placenta, amniotic fluid, maternal plasma volume, and red blood cells. Excess water is accumulated in the extravascular space and in intracellular fluid in the uterus and breasts and contributes to expanded adipose tissue.<sup>1</sup> After deliv-

ery, mild to moderate postpartum fluid retention and generalized peripheral edema is relatively common. Depending on the severity of retention, it can take a few days to several weeks for this extra fluid to be fully eliminated.<sup>2</sup> Vulnerability to severe generalized edema is often related to one of several factors: excessive IV fluids, oxytocin-induced labor, or preeclampsia.<sup>2</sup>

Excess IV fluids can contribute to edema in a normal pregnant woman during labor due to vasopressin. Vasopressin is an antidiuretic hormone that is naturally elevated in the blood circulation during pregnancy.<sup>1</sup> Oxytocin is structurally and functionally related to vasopressin, and high-dose oxytocin infusions (during induction, augmentation, or a postpartum bolus) have been associated with excessive fluid retention, which can lead to water intoxication and other side effects.<sup>2</sup> Women who have preeclampsia are at risk for fluid overload due to the impairment of renal clearance during the disease process.<sup>3,4</sup> Delivery reverses preeclampsia, but the presence of edema due to fluid retention and/or fluid overload may persist for several weeks.<sup>2(p116)</sup>

Excessive interstitial fluid may be generalized throughout a woman's body but is most evident in dependent areas such as feet, ankles, hands, and breasts and becomes more pronounced in the late stages of

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*Editor's Note:* As with the light bulb and the telephone, yet another invention has been arrived at independently by multiple practitioners. The authors of our Case Study and Insights in Practice columns have simultaneously yet independently developed an areolar tissue compression technique involving what they both call "positive pressure." The techniques are used to soften the areolar area in cases of edema or engorgement prior to infant latch. We are publishing their findings side by side so that readers will have an opportunity to review the details of their related procedures.

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labor and early postpartum.<sup>1</sup> In cases in which fluid retention is more severe, edema collects around the subareolar tissue of the breast, causing distortion of the nipple and areola. The nipple tissue becomes hard and nonpliable, similar to the engorgement experience.

Breast edema is not always related to the normal process of a mother's milk coming in (ie, engorgement, which occurs 3-5 days postdelivery),<sup>5</sup> but it does appear to intensify normal postpartum engorgement. If a mother with this condition is trying to breastfeed soon after delivery, areolar edema can be severe enough that it interferes with the neonate's ability to latch onto the breast. Although breast edema eventually resolves as the body eliminates excess accumulated fluid,<sup>1,2</sup> establishing breastfeeding during this time is difficult for the mother, especially without assistance. Unless she is taught how to manage this condition, her frustration may cause her to discontinue breastfeeding.

This case study describes a situation in which a mother with severe breast edema was helped to breastfeed through the use of areolar compression (AC), which is a simple method to reduce postpartum nipple and areolar edema manually by applying gentle positive pressure. This intervention can be administered by the health care provider or by the mother, or, if necessary, it can be taught over the phone.

### **Case Presentation**

Mary is a 32-year-old, primipara Caucasian woman who, at 39 weeks gestation, was admitted into the hospital for mild labor several hours after her membranes had ruptured. Her labor progressed slowly, and to facilitate her cervical dilation, she was given Pitocin to augment her labor and then an epidural to ease her discomfort and help her relax.

Through the next 48 hours, she received considerable amounts of intravenous fluids (14 L). The IV fluids were given to reduce her elevated temperature. Several boluses were given to increase blood volume to the placenta due to periodic fetal heart rate decelerations. Three liters contained added Pitocin: 1 during labor and 2 during the recovery period. Due to prolonged ruptured membranes, fever, and slow cervical dilation, a cesarean section was performed. The newborn was a healthy baby girl, 9 lb, 8 oz, Apgars at 1 min and 5 min were 8 and 9, respectively.

When the patient arrived on the postpartum unit, the infant was alert, and active rooting movements indicated that the infant was ready to eat. Mary attempted to

breastfeed, but the infant was unable to latch onto the breast. Several unsuccessful attempts were made. The nurses indicated in their charting that Mary's nipples were tight and inverted, making latching difficult. As the night progressed, supplements were needed to maintain the baby's blood sugar level. Mary used the breast pump as instructed every 3 hours for 15 minutes at a time but was unable to extract any milk/colostrum. She found pumping to be uncomfortable and painful, even on the lowest setting and soon developed sore nipples.

The second day postpartum, attempts to latch the infant were unsuccessful, so the decision was made for Mary to continue pumping and supplement the baby with formula as needed. She pumped frequently and continued to offer the breast when the baby showed signs of hunger.

On the third day, the lactation consultant was available to see Mary, and an assessment clearly noted severe generalized pitting edema in her feet, ankles, and breasts. Mary's breasts were large and pendulous, and Mary reported that the edema had worsened in her extremities and her breasts had become heavier and tighter. Since edema is more pronounced in dependent areas, such as the feet and hands and the soft pliable tissues of the breast, it appeared that Mary's difficulty latching the infant was due to edema that had moved into the areola. The increased congestion in her breasts indicated that her milk was coming in, making the edema more difficult to manage.

With permission, the lactation consultant performed a press test into the areola to confirm the actual presence of areolar edema. By placing one finger on the areola above the nipple and another finger below the nipple on the areola, the consultant applied steady pressure for about 10 seconds. When released, impressions (ie, pits, dents) were left in the tissue where the fingers had been. After explaining to Mary about areolar edema, AC was initiated. The first few minutes of the procedure were uncomfortable for Mary as the edema gave way. As the areola softened, the pressure from the fingers went deeper into the subareolar tissue, which resulted in the milk starting to flow from the nipple. The lactation consultant then rotated her fingers to soften the rest of the areola. As the edema moved back into the tissues of the breast, the nipple became soft and pliable. Mary was relieved to see milk, especially since she had not been able to obtain milk by pumping. The baby latched to the softened breast, maintaining nutritive sucking for 20

minutes. Afterward, Mary's nipple was softer and more pliable, and the baby was satisfied. Mary then performed AC on the other breast without help. As the breasts softened, the nipple and areola were soft enough to use the breast pump. Pumping was more comfortable for Mary with her nipples softer and pliable. As a result, she was able to obtain 30 mL of milk.

Even though the edema was not as severe as it had been initially, Mary needed to repeat the process before each feeding for the rest of the day. As her milk came in more fully, she needed assistance with breastfeeding for several more feedings. By the time of discharge, she and her husband were managing the feedings on their own.

### Discussion

The first few days after birth are a critical period for establishing lactation. Postpartum areolar edema, unrelated to normal engorgement, can be a distressing barrier to breastfeeding. AC is an easy intervention that can be used to reduce edema of the areola and nipple so that the infant is able to latch onto the breast. It can be performed by the lactation consultant or taught to the mother to do on her own.

AC has several positive results for the mother. It (1) shifts excess fluid back into the interstitial space, (2) relieves overdistention of the subareolar tissue, (3) enables the infant to draw the nipple deeply into his or her mouth so that the milk is more available, and (4) stimulates the nerves supplying the nipple and areola, enabling a more productive milk ejection.<sup>6</sup>

Finally, compressing the areola using the technique described as AC should be done before pumping the edematous breast. During the use of a breast pump, especially when used on high settings, the areola is prone to becoming firmer and less elastic, which can result in pain and nipple trauma. The negative pressure of a pump tends to draw excess interstitial fluid toward the areola and nipple instead of moving it away from the area, thus worsening the problem.

Only 1 publication on breast edema and treatment was found in the literature.<sup>6</sup> Although only 1 case study is reported here, the authors have worked with other mothers experiencing this problem. For example, a mother who had a baby in the neonatal intensive care unit was experiencing moderate generalized edema. She had been pumping but was unable to obtain any milk, owing to areola edema present from the time she delivered. After softening the areola by using AC, she pumped 60 mL of milk.

Although AC is a helpful technique, there are no studies that have tested the effectiveness of this method. We urge our colleagues to conduct studies that measure the effectiveness of AC.

In summary, the first few days after birth are a fragile time for breastfeeding. Women who are exhausted from difficult deliveries and who have generalized pitting edema that results in areolar edema are at risk for early, unintended weaning. AC is a useful skill that IBCLCs and maternity nurses can apply in their practice to assist women to overcome this temporary problem.

### Appendix Steps of the Areolar Compression Technique

These photos show a mother using the areolar compression technique. The procedure will take anywhere from a few minutes to 30 minutes, depending on the severity of the breast edema.



**Figure 1.** The mother applies pressure with her fingers into the areola behind the nipple. She does a "press test."



**Figure 2.** The fingers left impressions in the tissue after release of pressure.



**Figure 3.** The mother's fingers are then placed behind the initial "pit," and the tissue is pressed and held. The mother works her way up the areola and then rotates to a new area behind the nipple to start the process again.



**Figure 4.** The nipple is pliable and easily grasped with the fingers and stretched outward.

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### Resumen

#### *Tratamiento del edema del pecho con compresión areolar*

Este estudio de caso describe un gran edema en el tejido del pecho y areolar en una madre en los primeros dos días postparto y que interfirió con la iniciación temprana de la lactancia materna. Los pechos eran naturalmente grandes. El edema de los pechos hizo el tejido areolar y del pezón firmes y sin flexibilidad. La madre logró colocar el bebé al pecho luego de aprender la técnica de Compresión Areolar desarrollada por los autores. La Compresión Areolar reduce el edema de la areola y del pezón utilizando presión positiva suavemente sobre la areola. El bebé continuó con éxito amamantando luego de utilizar la técnica de Compresión Areolar que la madre aprendió.