original article

Effectiveness of Reverse Pressure Softening of Areola in Women with Postpartum Breast Engorgement

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Abstract

Background and Objectives: Breast engorgement is a frequent problem for lactating mother. It can be extremely painful and may predispose to nipple tenderness, fissures and abscesses. It is associated with termination of lactation.There are many suggested treatments, these interventions alone did not show any significant results.The objective of the research was to study the effectiveness of Reverse Pressure Softening of Areola in postpartum breast engorgement and to determine whether Reverse Pressure Softening of Areola with manual expression of milk and proper latching and breastfeeding techniques are effective as compared to only manual expression of milk and proper latching and breastfeeding techniques.

Methods: 80 subjects with postpartum breast engorgement were randomly allocated in two groups. Group-A (40 subjects) underwent interventions such as correction of breastfeeding and latching technique and manual expression of milk. Whereas in case of group-B (40 subjects) , along with correction of breastfeeding and latching technique and manual expression of milk, this group was given an additional treatment called as "Reverse Pressure Softening of Areola." The outcome was assessed in terms of Numeric Pain Rating Scale (NPRS) and Six Point Breast Engorgement Scale (SPBES) at baseline and immediately post intervention.

Result and Interpretation: The result of the present study demonstrated significant improvement with experimental group.

Conclusion: Both the interventions in control group and experimental group were found to be individually effective in reducing pain and engorgement of breast among women with postpartum breast engorgement. Further, the reduction observed in pain and engorgement of breast was more among the subjects treated in experiment than the reduction observed in pain and engorgement of breast in control group.

Key words*: Postpartum breast engorgement, Reverse Pressure Softening of Areola, breastfeeding and latching technique, manual expression of milk.*

Introduction

Exclusive breastfeeding is defined as giving an infant breast milk from within the first hour after birth and for the first 6 months of life without other food or water.[1] Based on evidence, WHO and UNICE now recommend that every infant should be exclusively breastfed for the six months of life with continued breastfeeding for up to two years or longer. Breastfeeding benefits mothers as well. It can prevent breast cancer, improve birth spacing, and might reduce a woman's risk of diabetes and ovarian cancer.[2]

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1.NUMERICAL RATING PAIN SCALE [NRPS] [16]

NRS for pain is a unidimensional measure of pain intensity in adults. NRS is a segmented numeric version

of the visual analog scale (VAS) in which a respondent selects a whole number (0–10 integers) that best reflects the intensity of their pain. The common format is a horizontal bar or line. The NRS is anchored by terms describing pain severity extremes.

2. SIX POINT ENGORGEMENT SCALE [17]:

The following operational grades are used by breastfeeding mothers to rate breast changes on the six point engorgement scale:

1. Soft, no changes
2. Slight changes
3. Firm, non-tender
4. Firm, beginning of tenderness
5. Firm, tender
6. Very firm and very tender.

Higher the grade severe is the engorgement of the breast.

MATERIAL AND METHOD:

A) **STUDY DESIGN**:

Type of study: Experimentalstudy.

Duration of study: 1 year.

Place of study: Maternity hospitals, metropolitan city.

B) **STUDY DESIGN:**

Sample size: Group A- 40

Group B -40

Sample population: patient with post-partum breast engorgement

Sampling: Convenient.

C) **SELECTION CRITERIA**:

INCLUSION CRITERIA[8, 17]:

· Females with postpartum [day0-14] breast engorgement.

· Age 18-40 years.

· First time breastfeeder [primiparous women].

· Second/more time breastfeeder. [multiparous women]

· vaginal delivery.

· Cesarean section

Exclusion Criteria:

· Mastitis[8]

· Plugged ducts in breast[8]

· Abscesses[8]

· Malignant breast tumor[8]

· Women unwilling to participate

· HIV positive mother[8]

· Mother of baby having sucking anomalies[8]

· Mother undergoing medical treatment for breast engorgement[8]

D) **MATERIAL USED :**

· Consent Form

· Numeric pain rating scale

· six point engorgement scale

· couch

· Gloves

· Notepad

· Pen

PROCEDURE

The **EthicalApproval**

As the study includes human subjects ethical clearance is obtained from ethical committee of K.T.G. College of physiotherapy and KTG Hospital, Bangalore as per the ethical guidelines for Bio-Medical research on human subjects, 2000 ICMR, New Delhi.

Informed Consent

All subjects fulfilling the inclusion criteria were informed about the study. Once the subject agrees to participate in the study, an informed written consent was taken from the subjects.

Procedure:

Subjects were selected according to inclusion and exclusion criteria and randomly grouped as control group and experimental group.

The assessment included demographic data, delivery history and engorgement details. With respect to the study, certain parameters evaluated specifically for both the groups. This involved a subjective and an objective assessment of the engorgement. Both the groups were subjected to common treatment of manual expression of milk and advice on appropriate feeding and latching technique. The experimental group received additional treatment with Reverse Pressure Softening of Areola.

Group A

This was the control group having 40 subjects with postpartum breast engorgement, according to inclusion and exclusion criteria. This group underwent interventions such as correction of breastfeeding and latching techniques and manual expression of breast milk.

Breastfeeding Latching Technique[20]

After obtaining engorgement history, the subject was asked about the feeding history, which included feeding from one or both breasts, latching of the baby to the breast, frequency of feed, duration of feed. Emphasis was given on the latching technique. If faulty, then the mother was taught the appropriate way of getting the baby to form a 'teat

The subject was also explained following points to maintain appropriate posture during feeding.

• Get in a comfortable chair with great back support to feed your baby. Using a stool to rest your feet on will help with good posture and prevent you from straining your neck and shoulders.

• Use your breastfeeding support pillow if you have one. (And if you don't, use whatever kind of pillows you can find to help support you and the baby.) A good breastfeeding pillow can make a huge difference in getting the baby in a proper position to latch on well.

• Make sure your baby is tummy-to-tummy with you at all times.

• Make sure you bring your baby to you, do not try to lean into the baby. Not only will this cause severe strain on your neck and shoulders, but it can affect the baby's position.

• Remember to keep your baby's ear, shoulder, and hip in alignment, which will make swallowing easier.

• The baby's nose should be opposite the nipple.

• You might need to hold your breast to help guide the nipple to your baby's mouth. Grasp the breast on the sides, using either a "C" hold or "U" hold. Make sure to keep fingers far from the nipple so you don't affect how the baby latches on.

• Aim the nipple toward the baby's upper lip/nose, not the middle of the mouth. You might need to rub the nipple across the top lip to get your baby to open his/her mouth.

• The baby's head should be tilted slightly back. You do not want his chin to his chest.

• When he opens his mouth wide with the chin dropped and tongue down, he should latch on to the nipple. If he does not open wide, do not try to shove the nipple in and wiggle the mouth open. It is best to move back, tickle the lip again with the nipple and wait for a wide open mouth.

• Try to get as much of the lower portion of the areola (the area around the nipple) in the baby's mouth.

• The baby's chin should indent the lower portion of your breast.

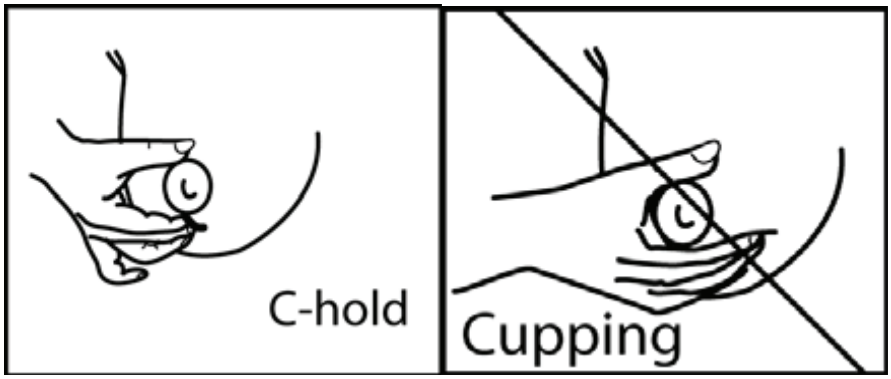
• Look to see if the baby's bottom and top lip are flanged out like fish lips. If they are not, you may use your finger to pull the bottom one down and open up the top one more.

Manual expression of the breast Milk[30]

The subjects were explained about the need for expression of breast milk and asked to follow the same technique during self-expression. Using the Marmet Technique expression was carried out.

Following instructions were taken into consideration to perform Marmettechnique :

1. Position the thumb and first two fingers on the breast about 1" to 1 1/2" (2.5 to 3.75 cm) behind the base of the nipple. The areola varies in size from one woman to another. Place the thumb pad above the nipple at the 12 o'clock position and the finger pads below the nipple at the 6 o'clock position forming the letter "C" with the hand, as shown. This was a resting position. Note that the thumb and fingers are positioned so they are in line with the nipple. Avoid cupping the breast.



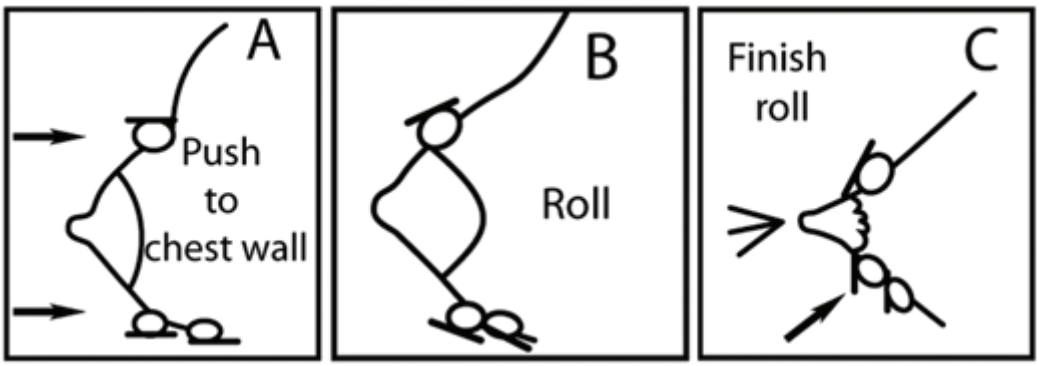
PICTURE 1- C-HOLD PICTURE 2- CUPPING HOLD

2. Push straight into the chest wall. Avoid spreading the fingers apart. For large breasts, first lift and then a push into the chest wall.

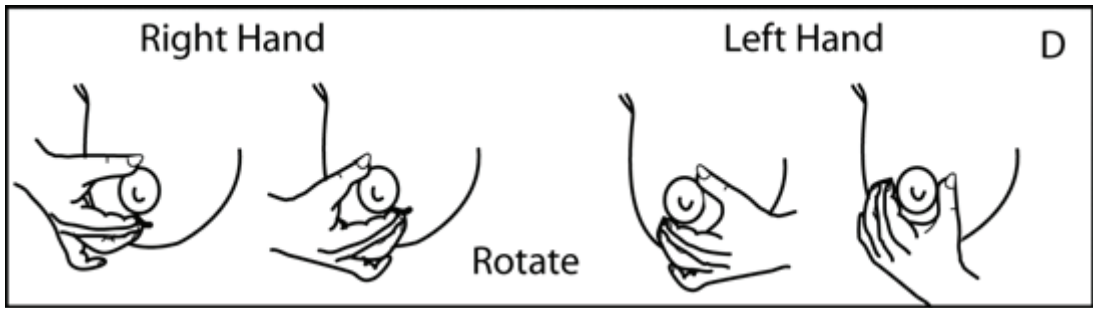
3. Roll thumb forward as if taking a thumbprint. Change finger pressure from middle finger to index finger as the thumb rolls forward. Finish roll. The rolling motion of the thumb simulates the wave-like motion of the baby's tongue and the counter pressure of the fingers simulates the baby's palate. The milking motion imitated the baby's suck by compressing and draining the terminal milk ducts without hurting sensitive breast tissue.

4. Repeat rhythmically to drain the terminal milk ducts. Position, push, roll; position, push, roll.

5. Rotate the thumb and finger position to reach other terminal milk ducts. Use both hands on each breast.



PICTURE 3-STEPS TO PERFORM MERMET TECHNIQUE.



PICTURE 4- ROTATION OF NIPPLE

6. Avoid These Motions:

• Squeezing the breast. This can cause bruising.

• Pulling out the nipple and breast. This can cause tissue damage.

• Sliding on the breast. This can cause skin burns.

Group B

This was the experimental group having 40 subjects with postpartum breast engorgement, according to inclusion and exclusion criteria. Along with interventions such as correction of breastfeeding and latching techniques and manual expression of breast milk as described above, this group was given an additional treatment called as "Reverse Pressure Softening of Areola."

Reverse Pressure Softening of Areola (RPSA)[31]

Following instructions were followed to perform RPSA:

· Position the mother with breast engorgement flat on her back during RPS which delays re-entry of swelling, allowing a longer window of time for latching. Or in sitting position

· Firmly but gently, press steadily on the areola, right at the nipple base.

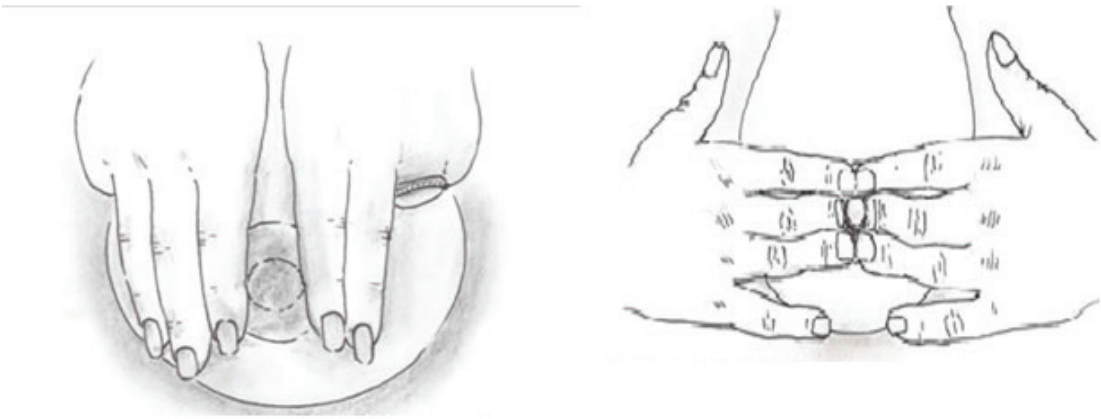
· Pressure should not be firm enough to cause pain. Avoid discomfort with less pressure for longer intervals.

· Press inward toward the chest wall for a full 60 seconds or longer (10-20 minutes or more if needed. This is a good time for instructions.

Use the flats of two thumbs or the first several fingers on each hand lengthwise above and below the nipple, creating a 1-2 inch long depression. Continue to alternate in opposite quadrants, with repeated 2 minute periods of pressure, partially overlapping the first set of pits, to keep oedema displaced from the entire area at the base of the nipple

1. Two handed method: Fingernails short, fingertips curved, each one touching the side of the nipple. Using 2 or 3 straight fingers on each side, knuckles touching nipple. Move ¼ turn above and below nipple.

2. Two thumbs method: Using straight thumbs, base of thumbnail even with side of nipple. Move ¼ turn. Repeat above and below nipple.



PICTURE 5- TWO HANDED METHOD OF RPSA

PICTURE 6- TWO THUMB METHOD OF RPSA

Choosing how to perform RPS depended on the following:

• The angle of access,

• The severity of oedema,

• The length of the fingernails,

• The availability of help for the mother, and her ability to understand directions.

Pre and post intervention evaluation:

For both the groups A and B certain parameters were evaluated pre and post intervention. This involves Numerical Rating Pain Scale [NRPS] as a subjective scale for assessment of pain and Six Point Engorgement Scale as an objective assessment of severity of breast engorgement.

Results

· Both the interventions in control group and experimental group were found to be individually effective in reducing pain and engorgement of breast among women with postpartum breast engorgement.

· Further, the reduction observed in pain and engorgement of breast was more among the subjects treated in experiment than the reduction observed in pain and engorgement of breast in control group.

Discussion

In the present study, 80 subjects with postpartum breast engorgement were randomly allocated in two groups. Group-A (40 subjects) underwent interventions such as correction of breastfeeding and latching

technique and manual expression of milk. Whereas in case of group-B (40 subjects) , along with correction of breastfeeding and latching technique and manual expression of milk, this group was given an additional treatment called as "Reverse Pressure Softening of Areola.." The outcome was assessed in terms of Numeric Pain Rating Scale (NPRS) and Six Point Breast Engorgement Scale (SPBES) at baseline and immediately post intervention.

The result of the present study showed significant improvement with experimental group.Both the interventions in control group and experimental group were found to be individually effective in reducing pain and engorgement of breast among women with postpartum breast engorgement.Further, the reduction observed in pain and engorgement of breast was more among the subjects treated in experiment than the reduction observed in pain and engorgement of breast in control group.

Anticipatory guidance regarding the occurrence of breast engorgement should be given to all breastfeeding mothers before birth center or hospital discharge. In countries where women may have longer hospital stays, engorgement may occur in the birth hospital. However, many women are discharged before the expected time of peak symptomatic engorgement. Mothers should be counseled about symptomatic treatment options for pain control. In addition, contact information for breastfeeding supportive advice should be provided. Healthcare personnel seeing either the newborn or mother after discharge should routinely inquire about breast fullness and engorgement.These techniques are simple and convenient to be inculcated to educate patients in the antenatal and postnatal sessions.

Conclusion

The present study concludes that the interventions in control group and experimental group were found to be individually effective in reducing pain and engorgement of breast among women with postpartum breast engorgement. Further, the reduction observed in pain and engorgement of breast was more among the subjects treated in experiment than the reduction observed in pain and engorgement of breast in control group.

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Conflict of Interest: Nil

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