

Ultrasound therapy and taping in lactating mothers with breast engorgement

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ABSTRACT

Breast engorgement is commonly encountered in lactating mothers, it is defined as the swelling and distension of breast, usually in the early days of initiation of lactation, due to vascular dilation as well as the arrival of the milk. It is the painful overfilling of the breasts with milk. This is usually caused by an imbalance between milk supply and infant demand. Early breast fullness occurs as milk supply develops and while new born has an irregular breast-feeding routine. Then normal fullness is caused by the milk and extra blood and fluids in the breasts as body uses the extra fluids to make breast milk and if baby is not breast-fed for several days then breast engorgement can occur. Twenty four-year old mother with past medical history of hypothyroid, hypertension and she complained firmness of breast. On palpation of the breast, tenderness is present. Due to pain, firm and tenderness she was not able to feed her baby. Pain and engorgement were assessed by using visual analogue scale and 6-point self-rated engorgement scale. After one week of treatment with ultrasound therapy and taping, there was decrease in breast engorgement and pain.

Keywords: Breast engorgement; visual analogue scale; 6-point self-rated engorgement scale; pain; feeding.

INTRODUCTION

Breast Engorgement is commonly encountered in lactating mothers, it is defined as the swelling and distension of breast, usually in the early days of initiation of lactation, due to vascular dilation as well as the arrival of the milk. It is the painful overfilling of the breasts with milk. This is usually caused by an imbalance between milk supply and infant demand. Early breast fullness occurs as milk supply develops and while newborn has an irregular breast-feeding routine. The normal fullness is caused by the milk and extra-blood and fluids in the breasts as body uses the extra fluids to make breast milk and if baby is not breast-fed for several days then breast engorgement can occur. Colostrum is a yellowish liquid that contains important nutrients and antibodies that a baby needs right after birth (1). During initial stages of breastfeeding, mother's breasts produce colostrum in small amount. But after making a couple of days, they're going to increase in milk production. So, breast becomes fuller and firmer. This swelling is not only caused by the greater amount of milk, but also by increased blood flow and extra lymph fluids (2) in breast tissue. For most new mothers, these feelings of heaviness pass without problems when their baby feeding well and frequently. But some produce more milk than their breast can hold which makes them feel rock hard and uncomfortably full – a condition called engorgement. Breast engorgement is a problem (3) in breast feeding mothers and this frequent problem can happen to lactating mother who don't or can't breast feed as well as those who do. It Usually caused by an

imbalance between milk supply and infant demand if left untreated, engorgement can lead to potentially serious issues (4) including painful blebs, plugged milk ducts or mastitis. There are many lactating mothers suffering with breast engorgement (5). Severe engorgement can make it difficult to baby to latch on to the breast properly and feed well. Engorgement may even cause body temperature to rise around 99-100 degree F, it is also known as milk fever. According to Academy of Breastfeeding Medicine Protocol Committee, breast engorgement is defined as "the swelling and distension of the breasts (6). Usually in the early days of initiation of lactation caused by vascular dilation as well as the arrival of the early milk. Breast engorgement during the first week of breast feeding and can also occur as a result of delayed, infrequent or interrupted removal of milk from the breast (7, 8). The factors which may place a mother at a higher risk of engorgement are failure to prevent or resolve milk stasis resulting from infrequent or inadequate drainage of the breasts (9).

Statistics indicate the incidence rate of breast engorgement all over the world is 1:8000 and in India it is 1: 6500. The National Family Health Survey (NFHS) (10) has shown that painful breast is the second most common reason for giving up breast feeding in the first two weeks after birth. One factor contributing to such pain can be breast engorgement. It is reported that 20-85% of the mothers are affected by breast engorgement. Breast engorgement is a major issue in the early postpartum period as the breast, under the influence of hormonal shift, increase milk production

rapidly. Though various interventions are available few studies support that ultrasound is effective (11) in relieving symptoms of breast engorgement. Heat application in the form of hot moist (12) heat is a comfort measure to activate the milk ejection reflex. Gentle massage (13) can be used as conventional intervention for relieving breast engorgement. Massage prior to feedings is helpful. Through, kinesio taping at the engorgement area. It decreases the inflammation, pain and improves circulation and lymphatic drainage. Hence this study is to determine whether taping offer any advantage over ultrasound.

CASE HISTORY

Informed consent has been signed by the patient prior to the study. A 24 year old mother with past medical history of hypothyroid, hypertension and she complained firmness of breast. On palpation of the breast, tenderness was present. Due to pain, firm and tenderness she was not able to feed her baby.

Outcome measures

Pain was assessed subjectively by using the visual analogue scale, a subjective measure of self-rated pain on a numerical scale of 1-10 [10 being the worst possible pain, 5 moderate pain, 0 no pain]. The threshold for pain was having at least one subsequent pain measure 3 points or more above baseline.

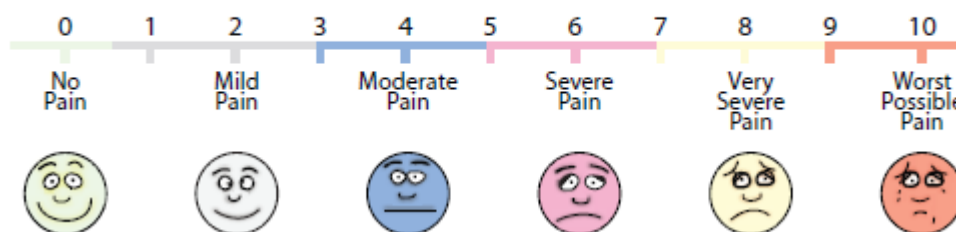


Fig. 1: Visual analogue scale

Engorgement was assessed using 6-point self-rated engorgement scale from 1 to 6 [1- being soft, no change and 6 being very firm, very tender, any measure

of 3- firm, no tender or more after baseline was the threshold for this subjective rating.

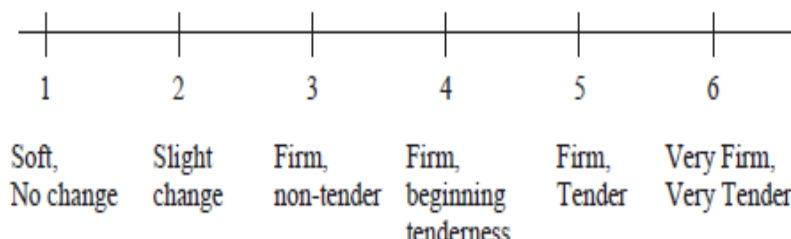


Fig.2: 6 -Point self-rated engorgement scale

After the subjective assessment it is noticed that the score of visual analogue scale in right breast was 4 and the left breast is 6, and the 6-point self-rated engorgement scale score is 4 in right breast and in left breast. Tenderness is examined through palpation of the breast.

Intervention

The patients are made to lie in supine with the arm of the treated side placed behind the head. A pulsed mode of therapeutic ultrasound is given using ultrasound transmission gel as the coupling agent, with the intensity of 1W/cm² and frequency of 1MHZ passing the head of the ultrasound firmly over the breast from the periphery towards the areola, lightly back to the chest and firmly down again to the areola, gradually,

working around the breast for 8 minutes. The patients are treated with the taping techniques by use of kinesio tape. First we have to clean and dry the skin of breast. Take 7-9 inches of two pieces of tape for each breast and each piece further cut into five equal strips with an anchoring base and rounded corners avoiding the axilla, tape applied to breast with minimal stretch (10%- 15% of which is tape off no extra tension applied) leaving space around nipple/areola for infant to latch, tape ends not overlapping.

- Tape adhesive activated by patting and assessed for comfort and range of motion.
- She was instructed to wear the tape for 72 hours.
- She was instructed to remove the tape prior to the prescribed time only if any persistent skin irritation.

- At the day 3 follow up the skin is inspected and assessed their primary outcome measures and then taped with the same technique used previously for 1 week.

After the end of 1 week post Visual Analogue Scale and 6-point self-rated Engorgement Scale are taken and it is noticed that the VAS score is 0 in right breast and 1 in the left breast, 6-Point Self Rated engorgement scale score is 1 in right breast and 2 in left breast.

RESULT

The result of the study shows that there is a significant difference between the pre and post-test intervention.

DISCUSSION

The main aim of the study is to compare the effect of ultrasound and taping in lactating mothers with breast engorgement, with the help of ultrasound and taping technique we can reduce the pain and engorgement and prevents further complications. Ultrasound helps the tissue to heal more effectively as it gives: 1. essential micro-massage for individual cells. 2. Increases cellular activity and 3. Responsible for the effect of therapeutic benefits. Ultrasound frequency is selected based on the depth of the tissue to be treated. The depth of ultrasound penetration is usually described in terms of half-value depth for the specific ultrasound frequency.

Through, kinesio taping at the engorgement area, it decreases the inflammation, pain and improves circulation and lymphatic drainage. In recent years, the use of kinesio tape (KT) has become increasingly popular. KT was designed to mimic the qualities of human skin. It has roughly the same thickness as the epidermis and can be stretched between 30% and 40% of its resting length longitudinally. Several benefits were proposed (14) depending on the amount of stretch applied to tape during application: 1 to provide a positional stimulus through the skin, 2. to align fascial tissues, 3. to create more space by lifting fascia and soft tissue above area of pain /inflammation, 4. to provide sensory stimulation to assist or limit motion and 5. To assist in the removal of edema by directing exudates toward a lymph duct. It is latex free and the adhesive is 100% acrylic and heat activated. The 100% cotton fibers allow for evaporation and quicker drying. The purpose of our study was to investigate whether KT has an effect on breast engorgement in breastfeeding mothers during the postpartum period.

We hypothesized that breastfeeding mothers would experience a decrease in breast engorgement by using the KT method. Hence the present study has been undertaken with the intention to compare the effect of ultrasound therapy with kinesio taping in lactating mothers. The result of the study shows that there is a significant difference between the pre and post-test

intervention and we conclude that the ultrasound therapy and kinesio taping is effective in treating lactating mothers with breast engorgement.

POTENTIAL RISKS AND BENEFITS:

Risks:

- No risk in using Kinesio taping and ultrasound therapy.
- Precaution to be taken not to cause any irritation or skin allergy.

Benefits:

- Kinesio tape and ultrasound therapy are more beneficial for the lactating mothers who complain of pain and engorgement.
- It reduces pain and inflammation.
- It improves circulation and lymphatic drainage.
- Lactating mothers can get rid of breast pumps which causes more pain during suctioning of milk from an engorged breast.
- No other heat or cold compression is further required.
- Application of tape is less time consuming.

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