Clinical Case Report Competition

Utopia Academy

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Third Place Winner

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Breast Massage: An approach to decreased ROM & pain post cancer treatment
Breast Massage; Approach to Decreased ROM & Pain Post Cancer Treatment
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Abstract:

a) **Objective:** To explore the effectiveness of breast massage in order to improve range of motion and reduce pain of the gleno-humeral and scapulo-thoracic joints post lumpectomy, axillary lymph node section removal, chemotherapy and radiation treatment for breast cancer.

b) **Method:** Swedish and myofascial techniques applied to the breast, anterior neck and chest as a focused modalities and in combination with traditional massage techniques such as: swedish, trigger points, passive stretching, neuro-muscular techniques (NMT) and frictions to the arm and shoulder muscles and tendons, and joint mobilizations to the clavicle, glemohumeral and scapulothoracic joints. Treatments occurred twice a week for five weeks and assessments were performed every 3-4 treatments, using goniometry, photography, McGill pain scale and a daily journal.

c) **Results:** The primary goals of improved ROM in all directions and elimination of pain were achieved improving and easing activities of daily living. Other results noted were changes in the left breast in texture and shape as well as the client’s experience of both breasts feeling more balanced.

d) **Conclusion:** These results, as well as the reported psychological benefit of decreasing the client’s fear of touching her breast, encourage further research into the benefits of breast massage after medical intervention for the treatment of breast cancer.

**Key Words:** Breast, cancer, massage therapy, lumpectomy, range of motion, pain
**Introduction:** Despite the positive progress in preventative education and health services breast cancer still accounts for 2800 diagnoses and 600 deaths every year in British Columbia. 

1 It is not uncommon for woman to experience a decrease in upper limb range of motion up to two or three years after surgery, although it is more common with mastectomies than breast saving procedures. 

Within the healthcare community emphasis is on post surgical rehabilitation and massage is under utilized in this process.

Frozen shoulder, or adhesive capsulitis, can be caused by musculoskeletal trauma such as surgery. This significant restriction of active and passive range of motion of the shoulder is most frequently found in abduction and external rotation. Traditionally it is treated with analgesics, anti-inflammatories, steroid injections and/or aggressive joint mobilization often done under anesthesia due to pain. 

3 “Clinical experience has taught us that impaired mobility of soft tissues can greatly impair function and both trigger points and joint movement restriction recur as long as soft tissue mobility is not restored. This is particularly true of fascia.” Lewit, 2002. Treating the fascia can be an essential component of improving mobility and function.

Hertling and Kessler point out that the clavicle supports and suspends the floor of the axilla (composed of axillary fascia and skin) via the clavipectoral fascia. Furthermore this fascia along with suspensory ligaments of the breast attaches fascially behind the lateral boarder of the pectoralis major and encompass’

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1 Canadian Cancer Statistics 2011
3 Rattray, F & Ludwig, L, ‘Clinical Massage Therapy; Understanding & Treating over 70 Conditioned’, 1999, pg457
Breast Massage; Approach to Decreased ROM & Pain Post Cancer Treatment
Kashka Zerafa
pectoralis minor. “By its (fibrous bands of axillary facsia) traction effect, the
suspensory ligaments producing a hollow of the arm when the arm is abducted
and supports the breast.” Therefore it could be postulated that breast massage,
that includes fascial mobilization could be a means to affect shoulder mobility if
fascial contracture is involved in ROM restriction.

Guler-Uysal (2004) refers to a Cochrane review of randomized trials of
interventions to shoulder disorders, revealing no evidence of a benefit of
physical therapy used alone. This finding indicates the potential benefit of mixed
therapies in influencing better progress. They also make reference to a meta-
analysis of randomized clinical trials, to determine the efficacy of physical
treatment of adhesive capsulitis which concluded that there is little evidence of
superiority of one method over another.

Therefore, fascial mobilization of the breast combined with various soft tissue
modalities and joint mobilizations could potentially be an effective treatment
approach to adhesive capsulitis that occurs after breast cancer treatment. This
case study sought to explore the potential impact of breast massage as a means
to respond to frozen shoulder in combination with more traditional massage
techniques.

Case Presentation: S.G. was a physically active 54 yr old woman who was
diagnosed with breast cancer in the summer of 2009. July of 2009 she had a
lumpectomy and removal of a few lymph nodes on the left side, followed by
chemo and radiation therapy. There were no complications with treatment or

4 Hertling & Kessler, “Management of Common Musculoskeletal Disorders, 2006,
pg134.
surgery and in 2010 she was cleared for cancer. Remaining physical side effects reported were slight numbness spanning her scapula medial to laterally down her lateral arm and heaviness to the breast.

Her left arm presented with significantly decreased active and passive ROM in all directions with moderate to severe pain preventing end ranges from being met. There were three two inch scars from the surgery, one below the right clavicle, one about 3 o’clock and one in the axilla of the left breast. Upon palpation and in comparison to the other, the left breast was dense, heavier and contained what felt like fibrotic tissue throughout. She had recently received a doctors’ diagnosis of frozen shoulder and was positive for both Apley’s scratch test and the Adhesive Capsulitis test.

Although her pain was preventing her from working out at the gym like she used to, she continued to ride her bike with friends and train with the dragon boating team, often using pain medication to do so. The use of pain medication to get through her daily life was something she was very interested in changing. Therefore, her main goal was to decrease the pain and improve the available ROM of her left arm.

**Assessments:** Goniometry measurements, Apley’s Scratch test and Adhesive Capsulitis test were used to observe range of motion. McGill Pain Scale was used to establish degree and intensity of pain on the first and last treatments. A daily pain diary (the Comparative Pain Scale by Jack Harich, 2002) was used to observe pain during daily life with treatment applications. The following were recorded: amounts of pain in the am vs. pm, medication used & why (regarding trigger activity or preventative use) as well as pain associated pulling the bus
Breast Massage; Approach to Decreased ROM & Pain Post Cancer Treatment
Kashka Zerafa

stop bell, getting dressed and hair brushing. Photographs were used to observe visible breast changes.

**Treatment Management, Goals and Modalities:** A series of ten treatments occurring twice a week occurred over two months and two days. There were ten days between the first and second sessions due to patient illness. Treatments were 70min long with a 15min assessment before hand. Initial assessment occurred before first treatment and reassessment occurred after treatment #4, #7 and after the last treatment #10. Reassessment of 30 minutes occurred every three treatments that broke the complete study into 3 blocks. Each block’s reassessment was followed by a slightly different emphasis of modalities.

Techniques were chosen to achieve the primary goals of improving the range of motion of her glenohumeral and scapularthoracic joints while decreasing pain. Due to client’s history of surgical scars, their active pain when mobilized and her emotional discomfort with direct application to them, the treatment approach was based on addressing the relationship of the anterior chest fascia to shoulder mobility.

The treatment focus of breast massage decreased as guarding and pain decrease that allowed more specific and direct work, on involved arm and shoulder contractile tissue, such as more aggressive mobilizations and applications to non-contractile tissue. No breast massage was applied in treatment #10, instead guided self-massage so that she would feel comfortable maintaining it on her own. In the 1st block, swedish and joint mobilization techniques were focused on the anterior neck successfully decreasing pain on left middle scalene area. Techniques were focused on the upper arm and deltoid during the second and on
Lateral rotators during the third. Trigger points were addressed as they presented.

The following breast massage techniques were used to contribute to lymph drainage, increase circulation, decrease fascial contracture, positively influence the emotional association of fear she had regarding her breast and therefore decrease pain: Myofascial shearing, lift/浮动 tissue off of retro mammary space, areolar suction, platysma release, rib’s 1-7 separating and gentle Swedish circular finger kneading, effleurage and stroking towards axillary and abdominal lymph drainage. These same techniques were used bilaterally every treatment with slightly more time spent on the left breast. Amount of time spent on breast massage was tapered from 1/3 to ½ at treatment #5 to ¼ at treatment #8.

The following joint mobilizations were used on the left side to decrease the impact of reduced movement and guarding by improving joint mobility and health via increased synovial fluid production: Gleno-humeral inferior, posterior glide, distraction, clavicular floating, superior, inferior and posterior glides and scapular mobilization. Frictions applied by stationary pressure combined with mobilization of gleno-humeral joint were also applied to the inferior joint capsule to realign fibrous adhesions. Clavicular mobilizations were bilateral and remained at grade one and two during ten treatments due to pain. Scapular mobilizations were applied to the Left side at a grade of 1 during the first block and progressed to grade 3 & 4 during the second and third blocks. Gleno-humeral joint distractions and inferior joint capsule frictions were used during the second block and onward. Posterior and inferior joint mobilizations began in third block.
Changes in the firmness and presence of fibrotic tissue were noted in clinical notes and made visibly apparent when the breast was jostled throughout treatments. Photos documented the change in position and shape of the left breast as it progressively appears to be more similar to the right breast. The prominence of the scar and fascial division appearing to split the breast in half also softens as the pictures progress. Both observations support the client’s expression that the weight and feeling of her left breast had changed and was beginning to feel like the other one. See appendix pg 13 for photos.

The adhesive capsulitis passive abduction test, which was positive at the first treatment, was negative after the last treatment when 2:1 glenohumeral to scapulothracic movement was re-established. Photo documentation also indicates the increase in adduction, internal rotation and extension presented in the lower arm of Apley’s scratch test. Originally the client couldn’t do the upper half of Apley’s combined movements with her left arm being in flexion, abduction and external rotation, so it was omitted from the study. The pictures weren’t
taken on the last treatment so technically they are incomplete. However, the first three did show an increase in ROM. See appendix pg 15.

**Conclusion & Discussion:** The Goals of increasing ROM and decreasing pain through the application of breast massage in combination with joint mobilizations and soft tissue modalities were achieved. Changes were seen in both pain and ROM during the first two blocks when the emphasis was mostly breast massage. However, I believe treating the shoulder complex was important to the continued progress of mobility.

The client couldn’t have tolerated immediate focus on the shoulder due to guarding and sensitivity to pain. I think breast massage addressed fascial connective tissue of the shoulder complex. Reducing myofascial pain prepared the client for techniques that required tolerance to moderate levels of pain (such as trigger point release, tendon and joint capsule frictions and joint mobilizations).

My client felt that being instructed in self-breast massage was “the greatest gift and most powerful shift of consciousness regarding her body she could imagine receiving from our treatments”. She was able to shift her association of self-touch and self-assessment, which she feared and avoided, to preventative self care in which she is now doing on a more regular basis.

I felt the case study to be successful. I was left with more questions and ponderings as well as knowledge about how to do improve the study in the future. Would breast massage have, as much of an effect on shoulder mobility if the presentation was frozen shoulder with no history of breast cancer? Would
Breast Massage; Approach to Decreased ROM & Pain Post Cancer Treatment
Kashka Zerafa

Breast massage alone have had the same effects as a tapering combination of
techniques?

The role of physical exercise in her injury and recovery is unknown and could be
further considered in future research. Despite her level of pain during Dragon
boat practices and racing she was not interested in changing the level of
involvement. It is unknown how that physical activity affected the shoulder
positively or negatively. The correlation of dates begs the question of whether
the injury could have been exacerbated by strenuous training? Conversely, it was
noted that the ROM increase digressed or stalled during the weeks after the
second assessment where there was no more training for the races and
continued to progress during the third assessment when she began to paddle
recreationally but less intensely as before. So perhaps the physical training
played a critical role in maintaining function.

Pain decreased throughout the treatment period but because it is self reported
bias is always a possibility. Pain medication was frequently used for various
complaints other than the shoulder, so it could be assumed that pain ratings
were decreased due to analgesic desensitization. It is also unknown what role
decreased sensation from pain medication played in further or maintained
injury.

Further research using larger study groups for a longer duration including post
treatment follows up are needed in order to determine the full potential of
breast massage contribution to shoulder mobility. Further research should also
take the following into consideration: the inter-relationship of combined
exercise, the influence of pain medication and adding control groups to observe the affects of breast massage isolated from other techniques.
Breast Massage; Approach to Decreased ROM & Pain Post Cancer Treatment
Kashka Zerafa

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https://www.cebp.nl/vault_public/filesystem/?ID=1400 Is the source of the
McGill Pain Scale Questionnaire