Clinical Case Report Competition

West Coast College of Massage Therapy

New Westminster

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First Place Winner

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Can deep transverse friction massage decrease pain associated with peroneal tendinopathy?
Abstract

Objective: The objective of this case study was to determine if myofascial release – focused on the sternoclavicular joint and sternal scar tissue - could help to increase shoulder range of motion (ROM), increase tissue mobility and decrease pain post-mastectomy.

Methods: This study involved five treatments over a five-week period to a 76-year-old female patient who underwent numerous breast cancer surgeries. The use of myofascial techniques including membrane release, skin rolling and pin and stretch, along with specific stretching and strengthening exercises given for homecare, were used to address treatment goals. Shoulder and neck ROM, scapulohumeral retraction, glenohumeral (GH) joint internal rotation, palpation, manual muscle tests and patient pain management log were used to measure and assess changes.

Results: All measurements taken were maintained or improved from the initial assessment. Left GH joint ROM increased in all osteokinematic planes with an emphasis on increased external rotation from 30° to 60° and increased abduction from 70° to 105°. The degree of scapulohumeral retraction and cervical spine ROM increased. Mobility of surgical scarring over the body of sternum increased in all directions, with the most notable change in the anterior direction – being able to mobilize the tissue off and away from the underlying structures. Patient noted decreased sensation of pain and pulling over anterior chest, neck and shoulder and an overall improved quality of life.

Conclusion: Results in this study indicate that myofascial release can help to aid in decreasing various symptoms such as ROM limitations, fascial restrictions and pain associated with upper-body dysfunction following breast cancer.

Keywords: myofascial release, breast cancer, upper-body dysfunction, range of motion, surgical scarring, fascial restrictions
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Introduction

Upper body dysfunction (UBD) and pain after breast cancer surgery is common and is progressively becoming more prevalent as breast cancer survival rates continue to increase. Breast cancer survival rates among the general population have been reported as above 50% and are estimated to continue to rise with ongoing advances in medicine and technology (Fialka-Moser, Crevenna, Korpan & Quittan, 2003). It is estimated that as a result of this influx in survivorship the amount of breast cancer patients experiencing UBD and pain will also increase, placing a larger demand on the need for therapeutic intervention (Ghazinouri, Levy, Ben-Porat & Stubblefield, 2005). Currently between 10% and 64% of women will report at least one upper-body symptom between six months and three years following breast cancer surgery with symptoms remaining more common longer-term. (Hayes, Johansson, Stout, Prosnitz, Armer, Gabram & Schmitz, 2012).

Background

Breast cancer is the most common malignant tumor among Canadian women and is estimated that one out of every nine women will develop breast cancer during her lifetime (Breast Cancer Society of Canada, 2013). The most malignant breast tumors are of the epithelial origin with 80% being classified as invasive ductal carcinomas. Lumpectomy is one of the most conservative surgical procedures as only a portion of the breast tissue is removed with the tumor. Women who undergo a lumpectomy normally receive radiation therapy for about six weeks following the procedure. More invasive surgeries include mastectomy and axillary lymph node dissection (ALND). If the tumor has spread to the sentinel lymph node, the first node on the drainage path from the breast tumor to the axilla, ALND must be performed in order to remove as much of the tumor tissue as possible. The majority of breast carcinomas occur in the upper lateral breast quadrant and most tumor recurrences happen within the first five years of diagnosis (Damjanov, 2012). The types of breast surgery involved in this study include lumpectomy, ALND, radiation therapy and a bilateral total simple mastectomy, which is the removal of both breasts including the nipple and areola.
Physiology/Pathology

Post-surgical impairments affecting upper body function following breast cancer surgery include weakness, decreased range of motion (ROM), nerve palsies, lymphedema, skin tightness, altered movement patterns and various postural abnormalities (Hayes et al, 2003; Curties, 1999; Kisner & Colby, 2002). Some important factors that can potentially limit shoulder and neck mobility post mastectomy include fibrosis from radiation therapy, chest wall adhesions from constrictive scarring and joint restriction and malnutrition from apprehensive use of the affected limb (Kisner & Colby, 2002). Pectoralis tightness, rotator cuff disease, adhesive capsulitis and the progression of arthritides are also known to be common consequences of breast cancer treatment (Yang, Park, Seo, Kim, Heo & Lim, 2010). The most common symptom following breast cancer surgery is pain, including myofascial pain, with its prevalence ranging from 12% to 51% (Hayes et al, 2012).

Myofascia is a specific type of deep fascia that surrounds all muscle tissue, as well as the tendons and ligaments that bind muscle to bone. It contributes to the body’s contours and overall function (Dixon, 2007). If any trauma is to occur, cellular membranes in fascial areas of attachment, such as muscle to tendon, tendon to bone or ligament to bone, can become twisted and convoluted, increasing the total surface area for attachment; therefore increasing the potential for tissues to get stuck together or torn (Travell & Simons’, 1999). When the fascial system becomes restricted from trauma, inflammation or poor postures it slowly begins to tighten causing a loss of flexibility resulting in pain and/or restriction of motion (Dixon, 2007).

It is noted that post-surgical scarring is frequently recognized as a causative factor in decreased glenohumeral (GH) joint ROM, but not a lot is known about compromised tissue gliding between supporting fascial and connective tissue structures as a possible source of upper body dysfunction among breast cancer patients (Fourie, 2008). According to Lewit & Olsanka, applying gentle myofascial techniques such as skin stretch and s-bowing accompanied by light stroking on post-surgical scars shows excellent results in increasing tissue mobility (Lewit & Olsansa, 2004).
A four-week pilot study using various myofascial techniques along with hot and cold hydrotherapy and a progressive home exercise program was completed on 12 patients treated with radiation therapy post-lumpectomy. It was concluded that all 12 patients experienced significant pain relief. It was hypothesized that indeed “Myofascial techniques stretch the structure and realign the tissues in this area, resulting in pain control.” (Crawford, Simpson & Crawford, 1996, p. 1189). In a study about impaired GH joint function among post-mastectomy patients, Fourie concluded, “adding mobilization of all tissue gliding restrictions resulted in improved upper limb function, reduced pain and increased exercise tolerance,” (Fourie, 2008, p.355). According to Schwind, by applying myofascial techniques “we influence the tissue so that its inherent self-regulatory tendency is reinforced in a direction that is more appropriate to its function,” He also states by achieving greater mobility in one area effects will also be felt in other areas (Schwind, 2006, p. 2).

**Hypothesis**

Limited literature has demonstrated the effectiveness of myofascial release on increasing tissue mobility and improving upper body function and pain among breast cancer survivors. Based on these limited findings, the aim of this study is to address what effects myofascial release will have on increasing tissue mobility, increasing upper-limb ROM and decreasing pain post-mastectomy.

**Patient History**

The patient is a retired 76-year-old, Caucasian, female who is left hand dominant. She was diagnosed with breast cancer in June 2003 and underwent a left breast lumpectomy. She had ALND, the removal of 22 lymph nodes, to the left chest and axilla. No lymph nodes were removed from the right chest and axilla. In September 2003 she underwent 30 radiation therapy treatments to the left chest five times per week over a period of six weeks. She was clear of cancer for almost five years post-surgery until a relapse in January 2008, at which time she underwent a bilateral total simple mastectomy. The left breast was cancerous, but as a precaution to avoid any further malignancy she chose to have the right breast removed.
Due to discomfort, swelling and esthetics she required two additional surgeries, which included a simple procedure of removal of excess tissue to the axillary area. Excess tissue from the right axilla was removed in July 2008 and excess tissue from the left axilla was removed in January 2009. Patient decided to not have reconstructive breast surgery.

Approximately 10 months after surgery she began to experience left dominant shoulder and anterior (ANT) chest pain and decreased ROM. She found she could no longer perform various activities of daily living including lifting up her grandchildren, reaching for items above shoulder height or using her left arm to steer while driving – all of which she noted as having no restrictions or pain with previous to surgery. She had a week of physiotherapy in 2010, a cortisone injection and acupuncture to her left shoulder, all of which she said provided her with only temporary relief. She noted she had been experiencing UBD and pain for nearly 3 years post-surgery.

She has a history of mild to moderate Hypertension (HT), Chronic Obstructive Pulmonary Disease (COPD), Osteoarthritis (OA) and Carpel Tunnel Syndrome (CTS) on her left side. Previous to her mastectomies she received endoscopic carpal tunnel surgery, but noted she has had no recurring symptoms. In 2011 she was diagnosed with left shoulder end stage GH joint OA with associated greater tuberosity malunion and was advised by her Orthopedic Surgeon to contemplate left total shoulder arthroplasty. She was given the risks and benefits of surgery but decided, due to the many past procedures to her left side, as well as taking her age into consideration, she did not want to undergo any more surgery to her left side. It was at this point she decided to seek out an alternative form of therapy.

**Observations/Signs & Symptoms**

Patient presented with head forward posture, slight thoracic kyphosis and anteriorly rotated shoulders. She complained of pectoralis major tightness and pain and pulling over her left (ANT) chest, clavicle and deltoid upon performing abduction (ABD) and external rotation (EXT ROT). She described tightness and pulling over her ANT neck, resulting in temporomandibular joint (TMJ) pain and decreased ROM in left and
right cervical spine (C-spine) rotation and lateral side flexion. She also complained of sleep disturbances, noting pain and pulling on her left side would often wake her up most nights.

**Assessment**

Hawkins Kennedy and Neer Impingement tests were performed to assess the presence of GH joint impingement syndrome. Hawkins Kennedy was negative bilaterally and Neer Impingement test was positive during both the initial and final treatments for the left GH joint, consistent with results of degenerative changes and osteophyte formation at the left acromioclavicular joint and glenoid rim, as noted in medical documents obtained from the patient.

Adsons and Halsteads tests were used to assess for the presence of Thoracic Outlet Syndrome, both tests were negative bilaterally. Protocols for all special tests were followed according to (Magee, 2002). Subclavius Tension Test was also performed, as outlined in (Schwind, 2006). The test was positive for the left GH joint resulting in severely restricted motion, indicating high tension around the sternoclavicular (SC) joint, subclavius muscle and surrounding fascia.

Active ROM (AROM) was assessed bilaterally for all GH joint osteokinematic ranges and Passive ROM (PROM) was assessed for left GH joint ABD (in the plane of the scapula) and EXT ROT pre and post treatment during initial and final treatments. AROM and PROM for left GH joint ABD and EXT ROT were also assessed during the third treatment.

The degree of GH joint ROM was measured with the use of a Goniometer, as per guidelines from (Norkin & White, 2003). C-spine ROM (CROM) was assessed using a Cervical Range of Motion Instrument, a product of Performance Attainment Associates.

Manual muscle testing (MMT) was performed bilaterally for GH joint external rotators, pectoralis minor and pectoralis major, as per outlined in (Kendall, McCreary, Provance, Rodgers, & Romani, 2005).
Due to the patient’s mild to moderate HT, blood pressure (BP) and pulse were taken before and after every treatment.

Using a vinyl tape measurer, the degree of scapulohumeral (SH) retraction and GH joint INT ROT was measured bilaterally. To measure SH retraction a fine point permanent marker was used to mark points of measurement at the sternal end of the clavicle and acromial process. The patient was asked to perform SH retraction and the distance between the two points was measured before and after each treatment to document any changes in fascial mobility to the ANT chest. Client presented with left GH joint INT ROT, therefore the distance between the lumber spine and left olecranal fossa was measured before and after each treatment.

A pain management log was given to the patient to keep track of pain levels during regular activities of daily living.

Photographs were taken during the initial and final sessions to document patient posture, scar appearance and left GH joint ABD and EXT ROT. (see Appendix B).

Video was taken during the initial and final sessions to document fascial and scar mobility. The degree of mobility was tested anteriorly, superiorly, inferiorly, laterally and medially around an area of scar tissue directly over the body of the sternum, which yielded the highest degree of fascial restriction and pain. (see attached video)

According to (Curties, 1999) a common location where scars tend to pucker or tissue looks folded or twisted in mastectomies is the region of tissue directly over or just lateral to the sternum. Curties notes scar segments in these areas, especially with bilateral mastectomies, act almost like a meeting point between the two scars and are one of the most likely areas to contribute to pain, motion restriction and collection of localized swelling.
Written consent was obtained prior to commencing all digital documentation. Written consent for treatment to the ANT chest scars and musculature was obtained prior to the commencement of the first treatment and verbal consent was obtained prior to all consecutive treatments.

**Treatment Goals/Precautions/Modalities**

The study consisted of five treatments over a five-week period from July 4, 2013 to July 30, 2013. Treatments were six days apart, except for a four-day interval between the third and fourth treatment. All treatments, except for the initial and final treatments, were one hour in length. Full assessment and homecare was given during the initial treatment and full re-assessment was taken during the final treatment. The initial and final treatments were two hours in length. During the third treatment reassessment, pre and post-treatment, was taken for left GH joint ABD and EXT ROT.

The patient was treated 18 times previous to this study, and through the use of various fascial and membrane techniques, Swedish massage and specific stretching and strengthening exercises her left GH joint ABD and EXT ROT increased from approximately 20% to 40%. This study was prioritized to help the patient reach optimal upper body function and to further decrease pain. Goals for this study were to achieve additional degrees of ROM in left GH joint ABD and EXT ROT, increase SH retraction, decrease left GH joint INT ROT, decrease pain, decrease scar adhesions, increase fascial mobility and improve postural awareness through treatment position and patient education. To try and attain additional degrees of ROM for left GH joint ABD and EXT ROT the focus of this study was primarily on treating the left SC joint, its surrounding fascia and mid-sternal scar tissue. These areas could not be treated directly during previous treatments due to patient pain levels and tissue sensitivity.

Myofascial techniques have the greatest effect when warm hydrotherapy is applied to help the tissue reach a more pliable state, as described in (Curties, 1999: Rattray & Ludwig, 2000). But as a precaution heat
applications were omitted for this study due to the patient’s HT. Over the course of the five treatments the client’s BP was mild and modifications to treatment were minimal. In following with proper protocol for contraindications and precautions for HT and COPD, stimulating techniques were avoided and fascial techniques were interspersed with gentle techniques such as light palmer stroking. For comfort, the patient was treated in the semifowlers position and during each treatment the patient was closely monitored for signs of distress and was frequently asked to provide feedback (Rattray & Ludwig, 2000).

Prior to the commencement of the initial treatment a medical note was obtained from the patient’s Medical Doctor (MD) giving permission to proceed with the outlined treatment plan despite history of breast cancer and mastectomy and being on BP medications.

Treatments began with placing a rolled up towel vertically along the entire length of the thoracic spine to encourage fascial stretch to the ANT chest and promote SH retraction, as recommended by Janet Sprague, Registered Physiotherapist and Certified Lymphedema Therapist, who’s work focuses on breast cancer rehabilitation (personal communication, June 20, 2013).

To warm the area light stroking, gentle compressions and neutral warmth from light sustained palmer contact was applied to the pectoralis major, serratus anterior, upper trapezius, latissimus dorsi, supraspinatous, infraspinatous, teres minor, teres major, subclavius and deltoid muscles bilaterally.

Fascial pin and stretch was performed on the upper and lower portions of pectoralis major and latissimus dorsi muscles bilaterally. The unaffected right side was always treated first. In later treatments, as fascial mobility and client apprehension improved, the degree of fascial pin and stretch was increased.

Three specific myofascial techniques were performed with light palmer stroking interspersed between each technique.
1. **Treatment of the left SC joint connection**: This technique applied a slight shearing force on the SC joint. With one hand placed on the ANT chest parallel to the clavicle and the other hand placed posteriorly over the scapula with the fingertips between the first and second ribs the fascia is compressed between both hands - the anterior hand compresses posteromedially and the posterior hand compresses anteriorly. This technique directly affects the surrounding fascia by acting on the inner joint connection and the ligaments stabilizing the joint. It is also noted to act indirectly on releasing the subclavius muscle. It is recommended that while performing this technique a “countertension” should be felt and held for as long as it takes to feel a release or until the “sternoclavicular connection opens into a larger movement pattern,” (Schwind, 2006, p. 50). During the initial treatment this technique was held for approximately 10 minutes before a release could be felt and by the final treatment it only had to be held for approximately two minutes.

2. **Skin Rolling/S-Bowing/C-Bowing**: Initially c-bowing was performed superior and inferior to the scar tissue overlying the sternum. In later treatments, as fascial mobility increased, s-bowing was performed directly over the scar tissue mid-sternum. Skin rolling was also performed directly over the course of the scar travelling from mid-sternum to the left axilla. Due to the high degree of fascial tension, scar tissue restriction and patient sensitivity skin rolling could only be performed during the last two treatments.

3. **Treatment of the fascia of the left pectoralis minor muscle in relation to the fascial investment of the left latissimus dorsi muscle**: This technique works directly around the common fascial investments of the latissimus dorsi and teres major muscles and the pectoralis minor and teres minor muscles. With the patient, seated one thumb is placed in the ANT region of the axilla and flat palmer pressure is applied to the upper chest. The other thumb is placed in the posterior region of the axilla with the palm supporting the scapula. It should feel like the shoulder is “riding” over the two
thumbs. With slight compression between the two hands, Schwind explains the thumbs should follow the ANT and POST movements of the shoulder with “listening” (Schwind, 2006, p. 87). This technique was repeated two to three times at the end of each treatment. During the initial treatment left GH joint ROM was extremely restricted and patient experienced some discomfort. By the final treatment the GH joint glided anteriorly and posteriorly much more freely (more so in the anterior direction) and patient also noted no pain or discomfort.

All myofascial techniques were applied with minimal pressure in the direction of tissue resistance, engaging the first barrier of tissue stretch and holding until a release could be felt. Each treatment was finished with light stroking and gentle compressions.

Patient homecare consisted of continuing with her regular seniors strengthening exercise program, which she participates in for one hour, three days a week - she was asked to include a strengthening exercise for her GH joint external rotators, including the use of a one to two pound weight. She was advised to apply a cool compress to her left chest and GH joint for 10 minutes post-treatment to reduce any possible inflammation. Three stretching exercises were prescribed to specifically improve fascial mobility to her ANT chest and to increase pain free GH joint ABD and EXT ROT. She was provided with exercise instructions and illustrations from (Canadian Cancer Society, Exercises after Breast Surgery: A guide for women, 2011 p. 7, 11 &14). She was advised to complete each exercise bilaterally with five to 10 repetitions, three times a day during the five weeks she was receiving treatment. She was advised to place a rolled up towel under her thoracic spine, as was used in treatment, for 10 to 20 minutes two to three times a day. She was also given a pain management log to record pain levels with activities of daily living.
**Treatment Outcomes**

The goals of attainng additional ROM in left GH joint ABD and EXT ROT, increasing left SH retraction, decreasing left GH joint INT ROT, increasing tissue mobility, decreasing scar adhesions and decreasing pain was achieved.

**Quantitative/Objective Findings**

Upon initial assessment patient presented with a decrease in all osteokinematic ROM with the most significant decrease in left GH joint ABD and EXT ROT. Initially the patient was only able to reach 30° of left GH joint EXT ROT and 70° ABD - only a slight increase in PROM could be reached before pain and pulling was felt. An increase of 60° EXT ROT (65° passive) and 105° ABD (110° passive) was attained during the final assessment (see Figure 1). GH joint ROM increased slightly in all other osteokinematic planes.

![Figure 1 – Range of Motion in Degrees for Left GH joint Abduction and External Rotation, Pre and Post-treatment](image-url)
SH retraction and GH joint INT ROT was measured before and after every treatment. During the initial treatment, the resting position for SH retraction was 17 cm on the right and 17 cm on the left. Before treatment the patient could only actively retract horizontally up to 0.2 cm for the left and right sides. By the fourth treatment the measurement from the sternal end of clavicle to acromial processes (resting position) on the left side increased from 16 cm to 17 cm and active retraction post-treatment yielded a 0.3 cm increase on the left and 0.4 cm increase on the right. By the final assessment left active SC retraction had increased 1.6 cm from the initial treatment (see Figure 2).

<table>
<thead>
<tr>
<th>Date</th>
<th>Right Scapulohumeral Retraction</th>
<th>Left Scapulohumeral Retraction</th>
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<tr>
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<td>Pre-Tx</td>
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<td>Resting Position (cm)</td>
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<td>/2013</td>
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*Figure 2 – Measurements of Scapulohumeral Retraction Pre and Post Treatment (all measurements in centimeters)*

Measurement of left GH joint INT ROT, measured from the lumbar spine to olecranal fossa, was initially 32 cm and by final assessment measured 29.5 cm. A decrease in left GH joint INT ROT of 2.5 cm indicated a decrease in fascial tension over the ANT chest. Subclavius Tension Test, which was positive
during the initial treatment, was negative upon re-testing during the final assessment – the left SC joint was able to be passively moved through its full ROM superiorly and anteriorly causing the patient no pain.

AROM for the C-spine increased by a few degrees in all ROM except for forward flexion, which showed a 5° decrease. The most significant increase was in extension and left and right lateral side flexion, which all showed a 10° increase in ROM.

MMT for left pectoralis minor went from a grade 3+ (can hold test position against slight pressure) to a 4 (can hold test position against moderate pressure). Left pectoralis major went from a 3+ to a 4+ (can hold against moderate to strong pressure) (Kendall et al., 2005). There was no change in strength for left GH joint external rotators. Upon final assessment the tissue over the ANT chest and sternum was palpated and scar tissue felt less dense and showed less puckering. The fascia was softened and more mobile in all directions; the most significant increase in tissue mobility was in the anterior direction. Patient’s shoulders and neck were also visibly less tense. Client’s BP and pulse decreased only minimally after each treatment.

**Qualitative/Subjective Findings**

A pain management log was given, using a numerical pain intensity scale from 0 to 10, 0 being no pain, 10 being worst pain (Agency for Health Care Policy and Research, 1994). (see Appendix A)

Her pain levels averaged a 5 after the first and second treatment; pain averaged a 2 after the third treatment and 0 to 2 after the fourth treatment. Most frequent form of patient pain control was self-massage and her recorded pain levels (one hour after the initial pain and self administered massage) were 0 to 1. Pain occurred most frequently in the morning between 6 a.m. and 11 a.m. and the most frequent activity at the time of pain was sleeping. After the first and second treatment patient complained of a different type of “achy skin” pain over her anterior chest and left GH joint, saying she felt like her skin was “fighting to let go.” During the third treatment while performing myofascial release to the left SC connection a softening of the
tissues was felt and the patient said she felt like a “nice warm water” was being poured over her left chest and shoulder. During the final assessment patient said she could finally raise her left arm up without pain and restriction and that she no longer felt a pulling sensation or pain over the front of her sternum. She noted she no longer had left ear and TMJ pain and was able to tilt her neck from side to side without restriction and pain. She indicated her quality of life had begun to improve, as it was no longer painful for her to drive or perform some of her favorite activities such as gardening and playing with her grandchildren. She also said she no longer woke up in the middle of the night from left shoulder pain.

**Discussion/Conclusion**

Trauma inherent in breast cancer surgery has distressing effects on the fascia. According to Richman (as cited in Dalton, 2005, p. 50) “the fascia becomes thickened and shortened and exerts tremendous pressure – up to 2,000 pounds per square inch on pain sensitive structures, squeezing muscles on the macro level and gripping nerves on a micro level.” Myofascial release techniques attempt to decrease tissue restriction and pain in an attempt to return the fascia to its more mobile pre-traumatic state (Dalton, 2005).

UBD is higher among breast cancer patients who undergo more invasive treatments options such as ALND, mastectomy and radiation. And, with the rate of survivorship increasing among these patients more forms of therapeutic intervention need to be studied and put into place in order to properly facilitate the recovery of UBD during and following breast cancer treatment (Hayes & Rye et al, 2010). According to the limited studies that have been done, it is apparent that myofascial release is considered beneficial in improving tissue extensibility and enhancing upper body ROM, as well as aiding in the relief of pain post-mastectomy.

In this study myofascial techniques on and around the area of restricted scar tissue, as well as directly over the SC joint proved to be successful in improving the mobility of fascia, decreasing pain and increasing GH joint ROM. Although the patient had an increase in left GH joint ROM, it is thought that full ROM in
ABD and EXT ROT could not be attained due to degenerative osteoarthritic changes. The best time to recommend myofascial release is unknown, but it is proposed that if the patient had sought out or been referred for earlier treatment, her level of UBD, including decreased ROM and pain as well as the progression of her OA, could have been lessened.

Unfortunately side effects of surgical treatment for breast cancer continue to be frequently neglected (Crawford et al, 1996). It is argued that the reason many breast cancer patients are not referred for postoperative rehabilitation, until after impairments and functional limitations have already developed, may be due to the limited number of studies, which makes it difficult for clinicians to make evidence-based decisions on which interventions to include in a patient's treatment plan (Kisner & Colby, 2002).

Results in this study conclude that myofascial release can help to improve common dysfunctions such as pain, tissue restrictions, postural changes and decreased ROM post-mastectomy. In considering that only a small change in the myofascia can cause great stress to other parts of the body (Dixon, 2007), it is important to note that the patient in this study experienced increased ROM in her C-spine and decreased pain in her TMJ - even though these areas were not treated directly. A letter obtained from the patient’s MD stated, “Indeed she seems to be doing much better with less pain and increased ROM to her left shoulder.” After seeing the results of this case, the patient’s MD communicated his intent to refer out any future post-mastectomy patients for registered massage therapy. Further studies, with longer follow up and an increased number of post-surgical patients, are needed to determine whether or not myofascial pain and restriction is a major contributor to the source of long-term pain and upper-body dysfunction among breast cancer survivors.
References


doi:10.1002/cncr.27467


Appendix A – Pain Management Log

## Pain Management Log

Please use this pain assessment scale to fill out your pain control log.

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<tr>
<th>Date</th>
<th>Time</th>
<th>How severe is the pain?</th>
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Appendix B - Photographs

Pre-Treatment #1 - ABOVE

Post-Treatment #5 - BELOW
MYOFASCIAL MASSAGE POST-MASTECTOMY

Pre-Treatment #1 ABOVE

Post-Treatment #5 BELOW
Pre-Treatment #1 ABOVE

Post-Treatment #5 BELOW
Pre-Treatment #1 ABOVE

Post-Treatment #5 BELOW
Pre-Treatment #1 ABOVE

Post-Treatment #5 BELOW
Pre-Treatment #1 ABOVE

Post-Treatment #5 BELOW