

Massage Therapy After Breast Reconstruction by Abdominal FLAP Procedure: A Case Report

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INTRODUCTION

A women's lifetime risk for breast cancer is 12%, and three out of four of them will receive this diagnosis after they reach the age of 50. By far the most common types of carcinomas discovered (70 to 80%) are ductal carcinoma in situ (DCIS), a non-invasive form located within the milk ducts. Approximately 20% of DCIS transform into microinvasive early stage cancer (stage 1) that spreads beyond the confines of the ducts. The standard procedure for both DCIS and invasive breast cancer is the same: to remove the abnormal cells or tumour, most commonly by partial mastectomy (lumpectomy) or, in the case where multiple areas of the breast are affected, by full mastectomy. Removal of sentinel lymph nodes, radiation treatment and hormonal therapy are also commonly part of the treatment plan, and in more aggressive forms of breast cancers, chemotherapy as well^{1 2}.

Breast reconstruction after breast mastectomy

In the situation where a full mastectomy is performed, women sometimes elect to have breast reconstruction, commonly by implant insertion. However, over the past three decades breast reconstruction by autologous tissue flaps have gained in popularity - in part because the resulting breasts are perceived as more natural, the surgical techniques have improved and the success rate has increased. Tissue flaps breast reconstruction surgery involves transplanting tissue harvested from various regions such as the latissimus dorsi muscle, gluteal region, the thigh or the abdomen, while preserving the blood supply to the transplanted tissue³. Abdominal flaps are a particularly desirable choice because abdominal fatty tissue most resembles breast tissue in texture and other characteristics compared to tissues elsewhere in the body. First developed in the 1970's, the pedicled transverse rectus abdominus Muscle (TRAM) flaps involve shifting a significant portion of the rectus abdominus and the overlying fat and skin upward to the chest to form a new breast

without disrupting the major blood supply that penetrates the muscle. Surgical advances have since permitted the development of a less invasive muscle-sparing TRAM flap procedure that requires significantly less muscle be excised in order to preserve the intact blood supply. However, the most recently developed flap procedures require specialized surgeons with the skills to cut and microsurgically reconnect the flap blood supply to vessels in the chest, typically using specific blood arteries such as the deep inferior epigastric perforator (DIEP) or superficial epigastric artery perforator (SEAP)⁴.

Abdominal flap surgeries are major operations, particularly if performed in conjunction with mastectomies and sentinel lymph node removal, as is frequently the case. The resulting scarring is rather extensive in the anterior core region, both in the area of tissue removal at the anterior and lateral thorax and over the entire abdominal region, where the superficial adipose tissue is dissected away from the underlying abdominal fascia in order to perform the abdominoplasty ('tummy-tuck'). The umbilicus must also be excised from the epidermis prior to transplantation of the flap and re-tethered at the original height on the abdomen once the tissue is drawn down and sutured inferiorly. The initial recovery phase for this surgery typically takes several weeks, while up to one year or more is required for an acceptable level abdominal functionality⁵. For proper recovery, post surgery manual therapy in the form of physical therapy, is an integral component of the initial recovery process, although there is a lack of consensus on exactly what form this rehabilitation should take^{6 7}. Other therapies sometimes offered during the rehabilitation process include massage and myofascial therapy, and both have been shown to be of benefit as well^{8 9 10}.

The purpose of the following case study is to describe how a woman having undergone breast reconstruction benefited from a series of clinical massage sessions that combined mobilizations, myofascial therapy and other approaches focusing on both deep and superficial soft tissues.

CASE REPORT

Background: Three years previously, the client was operated for a left breast mastectomy and immediate breast reconstruction by a microsurgical method of muscle sparing abdominal flap and vessel transplantation. During various conversations and at the intake interview, it was revealed that the client's principle complaint was an inability to completely straighten up without real discomfort and feelings of 'tightness' and 'scarring' in the abdominal muscles and at the skin surface. She also mentioned that the general appearance of the scar and the overly taught

abdomen was affecting her body image and overall quality of life. The main objective for the series of clinical massotherapy sessions was to relieve the discomfort and increase the limited mobility in the abdominal region generally and in the abdominoplasty scar specifically. In addition the chronic pain in the shoulder girdle and thoracic region, present for several years (even decades) prior to the breast reconstruction surgery, was also to be addressed. Since the site of breast reconstruction and sentinel node removal were not a concern, these regions were only addressed as required for a global myofascial approach. Appropriate caring relations should always be applied during clinical massage sessions since it is difficult to assess to what extent past events and experiences may impact on an individual emotionally, thus a conscious effort was made to provide appropriately caring, emotional and empathetic support throughout.

Methods: The five 90 minute sessions were spaced at two-week intervals. The first session devoted a considerable amount of time to the intake interview and initial assessment (over 45 minutes). The other sessions consisted on average of an estimated 15 minutes for postural and other evaluations, 55 minutes for manual therapy, and 20 minutes for all post-session assessment, feedback and homework assignment. The course of treatment was in part determined by postural analysis, assessment of tissue restrictions and muscle tone and imbalances and incorporated massokinesitherapy, fasciatherapy and somatic awareness coaching and techniques inspired from other soft tissue approaches.

Each session prioritized soft-tissue restrictions in specific regions such as the abdomen, ribs, diaphragm, pelvis, thighs, chest, shoulder girdle or back by using a variety of modalities that influence the fascia and are collectively described here as fasciatherapy. Joint mobilizations and active stretching/strengthening of various muscle groups of the shoulder girdle, pelvis, spine and hips were also applied as needed. As a means of encouraging somatic awareness the client was reminded to pay attention to any body sensations, with an emphasis on her breathing rhythm and ribcage expansions. Finally, the client was also encouraged to freely verbalize her sensations, memories, thoughts and emotions as desired at any time throughout.

Personal self-help tools such as therapeutic exercises, lifestyle modifications and education were also provided. The types of exercises proposed included scar release technics and specific exercises designed to strengthen movement identified as weak and inefficient and which were to be performed twice daily to maintain and re-enforce any gains in mobility achieved during the sessions.

Results: In general terms, the initial postural analysis revealed a significant forward-leaning posture, flexed hips, pelvic retroversion, lumbar spine hypolordosis, combined with bilaterally elevated and protracted scapulae. Two important abdominal scars were of note. The main one being a horizontal abdominoplasty scar that extended across the entire lower abdomen, and a second mid-abdominal incision for umbilicus reimplantation at the correct height on the abdomen. Upon palpation, the rectus abdominus was highly hypertonic and the abdominal region was generally taught. The upper trapezius and rhomboids were both hypertonic as well. As part of her self-treatment protocol, the client had been wearing a shoulder 'posture corrector' for 1 hour on most days.

Over the course of the five sessions rectus abdominus hypertonicity and overall abdominal tension gradually reduced - although it still remained overly tonic, and the client described a reduction in abdominal discomfort. The greatest improvements occurred in the shoulder girdle and mid back - the chronic pain originally reported had mostly dissipated, despite having endured this pain for 'decades', the posture corrector was no longer used, and there was an observable improvement in body posture and in shoulder positioning. Abduction and flexion range of motion also improved markedly.

The sessions were also an opportunity for the client to recall many events leading up to the surgery and from the recovery period. The therapist used modes of active listening and empathy to encourage these recollections, and as a result of them some additional pertinent information not discussed during the intake interview was revealed both about the operation and about post-operative complications.

Conclusions and Discussion: Muscle sparing abdominal flap surgery combines two operations into one: a breast reconstruction with an abdominoplasty and therefore both areas are subjected to significant scarring and adhesion. During the procedure, once the abdominal flap is removed, the remaining abdominal tissue is separated from the underlying deeper fascia layer to which it is attached and the tissue is stretched down to be surgically stitched to the epidermis proximal to the pelvis. The umbilicus must also be excised from the epidermis prior to transplantation of the flap and re-tethered at the original height on the abdomen once the tissue is drawn down and sutured inferiorly. During the first few days of healing the torso is placed in a semi-flexed position, after which time the patient is instructed to gradually extend the torso until they are able to lay

flat on their back and they are also encouraged to begin walking four days post-operation¹¹. As with all types of wound healing, local conditions present during the early stages are critical to optimize repair and minimize scarring and inappropriate fibrotic tissue formation^{12 13}. In the area of discomfort described by this client, the 'pulling' sensation could be ascribed to overly fibrotic scars and adhesions formed during the critical initial weeks to several months after the surgery, a period in which she believes she spent overly long periods of time seated; to the relocated placement of the umbilicus; or possibly due to a combination of all these and other factors.

No quantitative measures were recorded for this case study; instead, subjective measures such as visual postural analysis and mobility assessments and the client's impressions and comments were used to monitor the progress. A more objective and rigorous approach that includes quantifiable and measurable parameters would be needed to draw concrete conclusions on the progress achieved. However, most importantly, the client did express great satisfaction with the progress achieved and self described herself as having a feeling of improved self-esteem and body acceptance at the end of the series.

In summary, five ninety-minute clinical massage sessions improved overall posture and reduced the abdominal tone and resulted in greater overall abdominal comfort. Some hypertonicity and tightness still remained at this early stage in the care and additional sessions would be desirable in order to fully address these. The chronic pain initially described in the shoulder and mid-back region was greatly reduced by the series of five sessions. In conclusion, this case report demonstrates the benefits of clinical massage and myofascial therapy for women having undergone breast reconstruction by abdominal flap surgery.

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