



RESEARCH-BASED GUIDELINES FOR REHABILITATION POST-MASTECTOMY

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ABSTRACT

One of the most important surgical procedures for treating breast cancer is a mastectomy, which involves removing breast tissue. Even though mastectomy has many therapeutic advantages, it frequently results in physical disabilities and functional restrictions that call for extensive rehabilitation to maximize recovery after surgery. The purpose of this physiotherapy case study is to clarify the function of rehabilitation in reducing the aftereffects of mastectomy and assisting in the return of physical function and quality of life to individuals who have survived breast cancer. The case study looks at the post-mastectomy rehabilitation procedure, which includes pre-operative education, early postoperative mobilization, strength training, range-of-motion exercises, scar care, prevention and treatment of lymphedema, and psychosocial support. The focus is on customized evaluation and treatment planning that takes into account the surgical approach, adjuvant medicines, and the unique needs of the patient. The case study outlines the multidisciplinary strategy that involves physiotherapists, oncologists, surgeons, and other healthcare providers to address the complex requirements of breast cancer survivors after mastectomy. This approach necessitates coordination of care and teamwork. It investigates how to combine cutting-edge techniques like manual therapy and therapeutic exercises with evidence-based interventions to improve functional outcomes and the patient's general well-being. In addition, the case study assesses how well rehabilitation interventions work to restore shoulder mobility, improve physical function, lessen pain, lessen symptoms associated with lymphedema, and support breast cancer survivors' psychological adjustment and sense of self-efficacy. This case study advances rehabilitation strategies targeted at improving quality of life and functional results for patients having mastectomy by clarifying the critical role of physiotherapy in the overall management of these patients. It emphasizes how crucial patient-centered rehabilitation techniques, early and proactive intervention, and continuity of care are to enabling breast cancer survivors to reclaim their bodily autonomy and achieve long-term wellness following a mastectomy.

Keywords: Mastectomy, Rehabilitation, Lymphedema

INTRODUCTION

Breast cancer is the most frequent cancer in women and the second most common cancer worldwide among newly diagnosed cancer cases. Numerous studies have shown how lifestyle and environmental factors, including high-fat diets, alcohol usage, and sedentary lifestyles, influence the development of mammary gland cancer. Lowering the morbidity and death rate of the disease may be possible by reducing these causes (primary prevention). Secondary prevention, comprising diagnostic tests (e.g., mammography, ultrasound, magnetic resonance imaging, breast self-examination, and more current, more accurate imaging modalities), helps in the early diagnosis of tumors or anomalies predisposing to tumors¹. The surgical excision of breast tissue, or mastectomy, continues to be a mainstay in the treatment of breast cancer, providing efficient disease progression control and lowering the chance of recurrence. Over the years, this treatment has changed from the conventional radical mastectomy to more sophisticated methods including skin-sparing and nipple-sparing mastectomy², with the goal of balancing oncological efficacy with better aesthetic results and patient quality of life. Mastectomy patients may experience physical and psychological difficulties despite the therapeutic benefits of the procedure. An individual's quality of life can be greatly affected by postoperative consequences such as discomfort, altered body image, upper limb lymphedema, and reduced shoulder movement. As a result, the significance of all-encompassing rehabilitation techniques to resolve these problems and maximize functional results following mastectomy is becoming increasingly apparent. Large tumor size³, multicentric disease⁴, extensive ductal carcinoma in situ⁵, genetic predisposition⁶, radiation therapy contraindications⁷, and patient preference⁸ are the reasons why a mastectomy is indicated. Physiotherapy therapies have been shown in numerous studies to have positive impacts on the recovery process after mastectomy. Stout et al.'s systematic review (2020)⁹ showed how exercise-based rehabilitation programs can help mastectomy patients with shoulder range of motion, pain management, and upper limb function. In a similar vein, Cheema et al.'s (2018)¹⁰ randomized controlled trial highlighted the beneficial effects of resistance training on post-mastectomy muscle strength, tiredness, and quality of life in breast cancer survivors. Moreover, patients recovering from mastectomy now have access to a wider range of rehabilitation techniques thanks to developments in physiotherapy modalities. In a 2019 study, Moseley et al.¹¹ investigated the effectiveness of manual therapy approaches, including myofascial release and scar tissue mobilization, in treating postoperative problems and enhancing tissue mobility after mastectomy. Furthermore, cutting-edge technologies have demonstrated promising results in improving patient engagement, therapy adherence, and functional outcomes (Freeman et al., 2021). Examples of these technologies include virtual reality-based rehabilitation platforms.¹² Despite these developments, obstacles still stand in the way of improving mastectomy patients' rehabilitation outcomes. These obstacles include psychosocial hurdles to participation, unequal access to specialist care, and restricted availability of rehabilitation programs. For this reason, it is imperative that interdisciplinary teams continue their research in order to further develop and customize physiotherapy rehabilitation procedures, guaranteeing fair access and better results for all patients having mastectomy surgery. This paper seeks to offer a thorough assessment of existing practices, developing trends, and future directions in the field of physical therapy rehabilitation following mastectomy, in light of the increasing body of evidence supporting its efficacy in post-mastectomy care. This study aims to educate healthcare practitioners, academics, and policymakers about the critical role that physiotherapy plays in assisting persons in recovering and rehabilitating after a mastectomy. It does this by merging authoritative literature and empirical evidence. Ultimately, we can improve the overall care and wellbeing of mastectomy survivors and enable them to survive after cancer by deepening our knowledge of and application of evidence-based rehabilitation treatments. Following a mastectomy, the objectives of rehabilitation strategies are to raise quality of life, reduce secondary morbidity, and increase functional and independent level. Patients who experience several short-term or long-term issues following a mastectomy. among them include pain, shoulder dysfunction, lymphedema, seroma formation, psychosocial distress, and scar tissue formation¹³⁻¹⁷. A thorough patient history, a systematized evaluation of the shoulder's range of motion, manual muscle testing to determine the grade of the shoulder muscle, mobilization of scar tissue, pain and sensation, functional mobility, and palpation of the lymphedema grade are all necessary for the post-operative assessment of the patient. Handling the post-mastectomy issues is essential to addressing every aspect of the patient's experience¹⁸⁻²⁰.

CASE REPORT

DEMOGRAPHIC DATA-

DOA- 24/02/24

Name- Xyz

Age-46 years

Gender- Female

Occupation- Housewife

Address- Muradnagar

Chief Complain- Pain In Right Arm And Shoulder And Difficulty In Breathing After Surgery

HISTORY-

- **HISTORY OF PRESENT ILLNESS-** Patient present with the case of pain in shoulder blades followed by restricted Range of motion of upper limb right side and difficulty in breathing post-surgery in the last 4 months. Date of surgery (4/11/23). On 27 October 2023 patient diagnosed with lymph over right breast then patient was guided to do biopsy of the lymph on 28 October 2023 in the biopsy patient diagnosed with invasive carcinoma of right breast. Patient went through the surgery modified radical mastectomy on 4 november2023 under general anaesthesia.
- **PAST HISTORY-** Painless lymph node over the right breast for 4 months.
- **MEDICAL HISTORY-**No relevant medical history of the patient. Patient is on chemotherapy after the surgery. 1st chemo cycle- 23/12/23 and 2nd chemo cycle-2/2/24
- **FAMILY HISTORY-** Not relevant family history
- **SURGICAL HISTORY-** Modified radical mastectomy (4/11/2023) of right breast.
- **PERSONAL HISTORY-** No history of any type of addiction (smoking, alcohol, tobacco)
- Sleeping pattern normal
- Diet – mixed
- Appetite- decreased
- Hair loss due to chemotherapy
- Patient experience body rashes.
- **SOCIO-ECONOMIC HISTORY-** Lower- middle class
- **DRUG HISTORY-** Patient is on chemotherapy.

OBSERVATION-

- **MOA-** Independent
- **Body built-** mesomorphic
- Patient came with right shoulder supported with left hand
- Scar mark present over right breast of surgery the scar is healed
- Mild swelling present over the breast right side
- Gait – normal
- Posture- normal
- Paradoxical breathing pattern present

- Shoulder level equal

PALPATION-

- Tenderness present over pectoralis muscles and latissimus dorsi and axillary region (grade 3)
- Oedema – absent
- Temperature variation of skin – normal

EXAMINATION-

RANGE OF MOTION- SHOULDER

MOVEMENTS	LEFT	RIGHT
FLEXION	0° - 180°	0°-135°
EXTENSION	0°-60°	0°-50°
ABDUCTION	0°-180°	0°-95°
ADDUCTION	30°-50°	30°-50°
INTERNAL ROTATION	70°-90°	70°-90°
EXTERNAL ROTATION	90°	90°

MANUAL MUSCLE TESTING - SHOULDER

RIGHT	LEFT
3/5	4+/5

END FEEL – Early muscle spasm and tissue stretch

CHEST EXPANSION- 3.32 cm

SCAR- Non adherent

ADLS- Unable to do over head activities independently, difficulty in dressing.

POSTURE EVALUATION- Assess by Plumb line method, the posture is normal

PAIN ASSESSMENT-

- Site- Axillary region right side
- Type- Stabbing
- Onset- Gradual
- Duration- Chronic

GRADING ACCORDING TO NUMERIC PAIN RATING SCALE IS 7/10.

AGGRAVATING FACTOR- Movement of shoulder**RELIEVING FACTOR-** Rest**RADIOLOGICAL FINDINGS-**

Biopsy – carcinoma milk duct and breast (grade 1) stage (BT2N29)

PHYSIOTHERAPY TREATMENT-**CHEST PHYSIOTHERAPY-****Breathing exercises-**

- Deep breathing exercise
- Thoracic expansion exercise
- Segmental breathing

LIMB PHYSIOTHERAPY-

- Active range of motion exercises B/L of upper limb
- Mild strengthening exercises of B/L of upper limb
- Codman's pendular exercise
- Wall push-ups
- Joint mobilization and glides of shoulder joint (Maitland grade 2 and Kaltonborn grade 3)
- Swiss ball exercise
- Shoulder wheel

HOME CARE ADVISE

Many women experience discomfort, burning, tingling, numbness, or tingling on the chest wall or the back of their arm. This is due to the possibility of nerve irritation from the procedure. A few weeks following surgery, these emotions may get stronger. However, continue with regular routines until you experience any unusual soreness or swelling.

sometimes rubbing or stroking the area with your hand or a soft cloth can help make the area less sensitive.

* It may be helpful to exercise after a warm shower when muscles are warm and relaxed.

* Wear comfortable, loose clothing when doing the exercises.

* Do the exercises slowly until you feel a gentle stretch. Hold each stretch at the end of the motion and slowly count to 5. It's normal to feel some pulling as you stretch the skin that has been shortened because of the surgery. Do not bounce or make any jerky movements when doing any of the exercises. You should not feel pain as you do them, only gentle stretching.

* Do each exercise 5 to 7 times. Try to do each exercise correctly. Tell your cancer care team if you have trouble doing them.

* Do the exercises twice a day until you get back your normal flexibility. Continuing to do some exercises during the months after surgery can help you keep moving.

* Be sure to take deep breaths, in and out, as you do each exercise.

* The exercises are set up so that you start them first lying down, then sitting, and finish them standing up.

EXERCISES ARE-

1. Wand exercise (helps to increase patient ability to move the shoulder forward)
2. Elbow winging (helps increase the movement in the front of patient chest and shoulder)
3. Snow angle (stretch the tissue in armpit area and increase movement)
4. Shoulder blade stretch (helps increase your shoulder blade movement)
5. Shoulder blade squeeze (helps to increase shoulder blade movement and improve posture)
6. Side bends (this exercise helps increase movements of your trunk and body)
7. Chest wall stretch (helps stretch your chest)
8. Shoulder stretch (helps increase your mobility in your shoulder)
9. Arm lift (improves shoulder movement)
10. Pendular exercises

These are all the exercises which are home based ,it is necessary to breath properly during exercises.

Many of the patient faced breathing difficulty-

Breathing exercises are-

1. Deep breathing exercise
2. Thoracic chest expansion exercise
3. Segmental breathing

Home care advise for lymphedema:

Do some hand exercises –

1. Open hand close hand
2. Move your wrist forward and backward
3. Bend and straighten the elbow
4. Roll your shoulder in backward direction
5. Lift your hand up and toward the ceiling and gently lower back down
6. Raise arm from your side up above your head and gently lower back down

Skin care-

1. Wash skin daily
2. Treat any cuts or breaks in the skin antiseptically
3. Keep the skin moist
4. Pay attention to the care of nails on hand and feet
5. Do not cut or tear cuticles

Self-care-

1. Avoid heat
2. Avoid chemical hair removal
3. Avoid extreme of temperature such as hot baths and cold showers
4. Wear loose cloths that does not constrict the limbs

CONCLUSION

In conclusion, early intervention of physiotherapy shows successful outcomes and must be employed in post mastectomy patients.

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AUTHORSHIP STATEMENT

All three authors designed the treatment protocol. Jasmine Anandabai counselled the patient. Aradhya Sangal helped in the treatment sessions by being a valuable member of the team. Aishwarya Rai and Aradhya Sangal prepared the manuscript for publication. No research funding was applied for the study. The manuscript was revised by all authors and approved for the final document.

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