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EXERCISES TO PREVENT ARM DYSFUNCTION IN WOMEN FOLLOWING MASTECTOMY WITH AXILLARY LYMPH NODE DISSECTION

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ABSTRACT

Mastectomy, radiotherapy and chemotherapy are common treatment for breast cancer. The whole breast or part of the breast, lymph nodes, muscles may be removed during surgery. The extent of surgery depends upon the spread of cancer. Upper-limb dysfunction is commonly reported as a side effect of breast cancer treatment and may include one or more of the following impairments: decreased shoulder range of motion and strength, pain and lymphedema. Exercise intervention include a range of rehabilitative exercises aimed at preventing minimizing or improving shoulder ROM, Upper- limb strength and function, pain and lymphedema. Early detection of arm dysfunction and the preventive measures helps to optimize function of the upper limb in order to perform a physical activity or task and improve the quality of life.

INTRODUCTION

Breast surgery affects the range of motion of the affected arm & shoulder, which in turn leads to shoulder stiffness and problems in doing the daily activities. Radiation therapy in addition may affect the arm and shoulder for up to 6 to 9 months even after it is finished. The exercise programme outlined here aims to regain arm and shoulder movement after surgery for breast cancer. It is suitable for all patients who have had a lumpectomy, mastectomy, lymph node removal and radiotherapy. If the patient had surgery on both sides at the same time, they want to repeat the exercises with each arm.

THE NEED FOR EXERCISE

Arm dysfunction and lymphedema are the two most frequent impairments resulted from the surgery for

breast cancer. Arm dysfunction is a consequence of surgery and scarring of the healed wound limits the movement of the operated side. Patients find it difficult to move the operated side in performing daily activities such as reaching the arm over the head or fastening the clothes from behind.

Indications

Regular exercise will have a positive impact on the wellbeing. It will help to:

- Increase the range of movement in the affected arm
- Prevent any long-term problems with arm and shoulder movement and stiffness, as well as problems with the posture
- Improve any symptoms of cording (feeling a tight cord in the affected arm running from the armpit down to the elbow or sometimes down the whole length of the arm)
- reduce the risk of lymphedema and improve the quality of life

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Research Article



GUIDELINES

- Begin to use the involved arm (the arm on the same side as the mastectomy or the arm that had lymph nodes removed) for daily activities such as washing face, combing hair and getting dressed.
- While resting, keep the involved arm elevated, so the arm is at or above the level of heart.
- To pump the lymph fluid out of the involved arm, squeeze a soft ball with the involved arm.
- Gentle active exercise can improve circulation and decrease post-operative swelling and stiffness by keeping the blood and lymphatic fluid moving and overcoming tissue restriction.
- Restoring full movement of the affected side helps to resume daily activities comfortably, prevents loss of shoulder range of motion and improve the muscle strength.
- Overhead shoulder activities may be gradually added as tolerated.
- If patient had any kind of breast reconstruction procedure, this often means healing and recovery takes longer period and hence before doing any of these exercises, patient should check that they are appropriate for with their surgeon and physiotherapist.
- Modification of exercises is done according to individual purposes.

Techniques:

- The warm-up exercise should be done before starting the exercise section and repeated at the end of the session, as a cool down.
- All movements should be relaxed, avoid any undue muscle tension.
- Avoid pain, incisional stretch, and tension to the incision area.
- Perform five repetitions, twice daily, then slowly increase to ten repetitions.

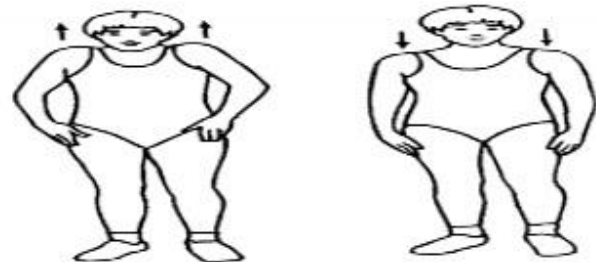
When to start exercise

- Post-operative range of motion exercise begins on post-operative day one and two with active hand, wrist and elbow exercises done on the affected side, for example, bent arms, squeeze a small soft ball, flex and extend the wrist.
- From post-operative day two or three onwards, basic exercises are taught.
- Intermediate and advanced exercises were followed from two to three weeks after surgery once the drains and sutures have been removed.

I. Warm up/Cool down exercise

1. Shoulder Shrug

- Raise the shoulders to the level of ears.
- Hold for 5 counts.
- Lower the shoulders and pull them down towards the bottom.



II. Basic Exercise

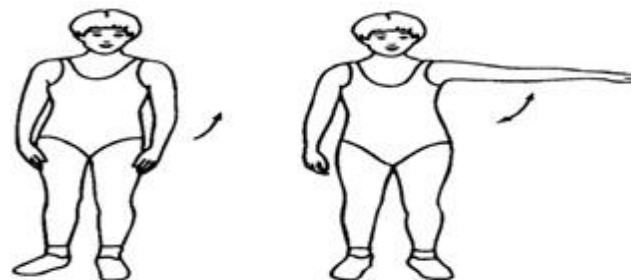
2. Front Raises

- Place the arm on the opposite shoulder. Massage the shoulder joint.
- Gently hold the shoulder down while raising the involved arm up in front of the body.
- Hold for 5 counts.
- Lower your arm.



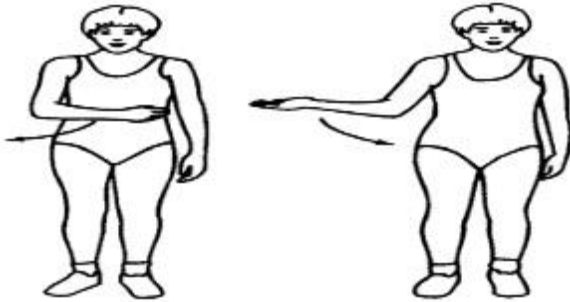
3. Side Raises

- Raise the involved arm up from the side with the thumb up.
- Do not raise shoulder.
- Hold and stretch for 5 counts.
- Lower the arm.



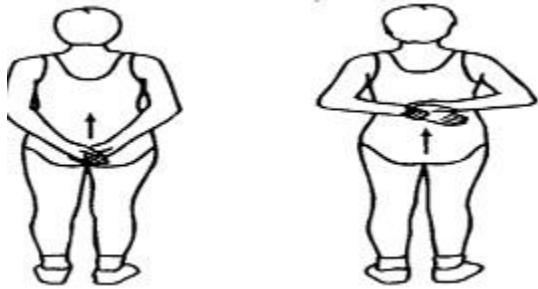
4. Turning Arm Out

- Bend the involved arm at the elbow, keeping it at the side.
- Move the arm away from the body, turning the palm upward.



5. Back Reach

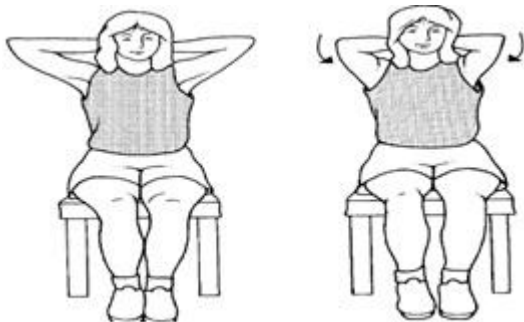
- Use the hand to grab the wrist behind the back.
- Bend at the elbow.
- Pull the involved arm up gently.
- Hold for 5 counts. Lower the arm.



III. Intermediate exercise

6. Butterfly Wings

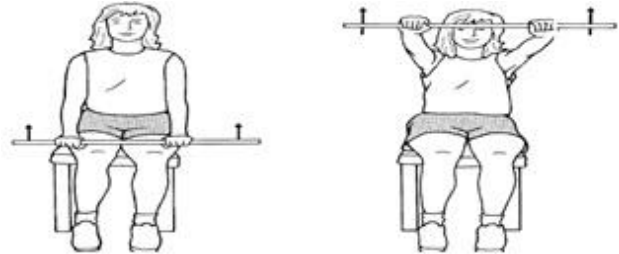
- Sit in a chair and place both hands behind the neck with the elbows out to the side.
- Once able to reach both of the hands behind the neck, clasp the fingers together.
- Bring the elbows together in front of the body until they touch.



Use a dowel rod/broomstick to do these exercises while sitting down or lying on your back.

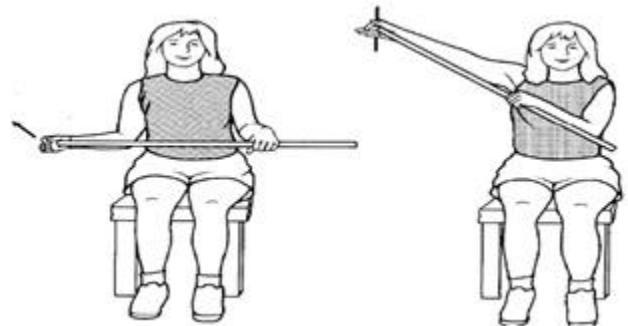
7. Flexion

- Holding the rod/stick with the palms down, lift the arms over the head as far as possible or until the elbow is near the ear.



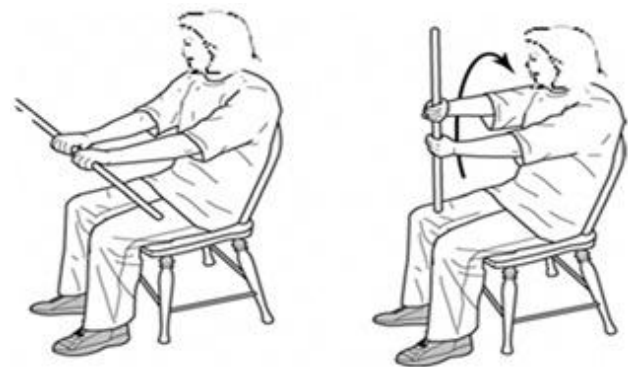
8. Abduction

- Hold the rod/stick in front.
- Move the rod/stick to the side, raising the involved arm up toward the ceiling.



9. Shoulder Rotation

- Lift the rod/stick to shoulder level.
- Twist the rod/stick clockwise until the rod/stick is upright.
- Twist the rod/stick in the opposite direction.

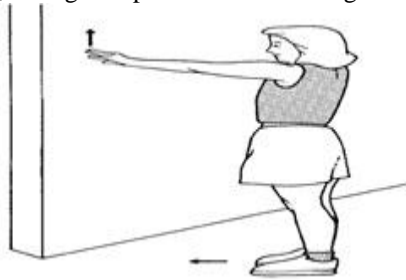


IV Advanced Exercise

Do these exercises while standing.

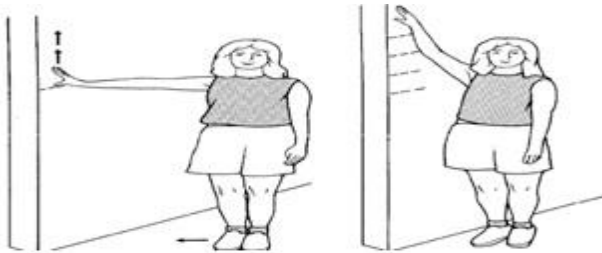
10. Wall Walks

- Extend the involved arm directly in front so that the fingertips touch the wall.
 - Walk the fingertips up the wall, stepping in towards the wall by moving the arm higher.
- Repeat the exercise by walking the fingertips down the wall, taking a step backwards to bring the arm down.



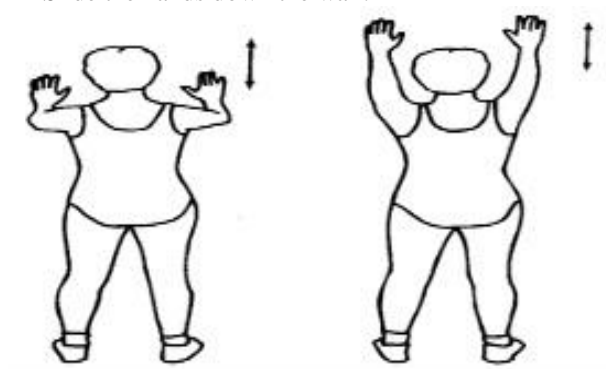
11. Side Wall Walks

- Stand with the involved arm next to the wall.
- Walk the fingertips up the wall, without leaning the body towards the wall.
- Step toward the wall to move the arm up.
- Repeat the exercise by walking the fingertips down the wall.



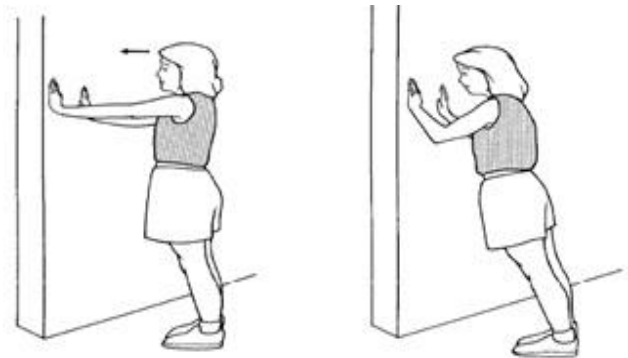
12. Wall Crawls

- Stand in front of a wall and with both hands walk the fingers up the wall until feeling a pull.
- Hold for 5 seconds.
- Slide the hands down the wall.



13. Push Ups

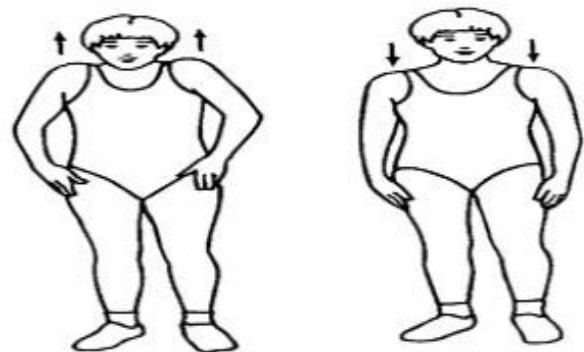
- Stand facing the wall at arm's length and place the hands against the wall at shoulder level.
- Slowly bend the elbows until the forehead touches the wall. Keep the head, trunk and legs in a straight line.
- Straighten the elbows slowly until the body is upright.



V. Warm up/Cool down exercise

14. Shoulder Shrug

- Raise the shoulders to the level of ears.
- Hold for 5 counts.
- Lower the shoulders and pull them down toward the bottom.



POINTS TO REMEMBER

Elevation

- Elevation of the affected arm is necessary to reduce pressure and may facilitate Venous and lymphatic drainage. This can reduce the tendency to become swollen, prevent fluid accumulation, and decrease pain.
- It is normal for the arm to swell slightly after surgery and it may be uncomfortable to raise the arm. This swelling should subside within 6 weeks, although it may require simple interventions such as arm elevation. It may also persist or be aggravated if chemotherapy and/or radiation follow surgery.
- If swelling of affected arm is greater than 2 cm or



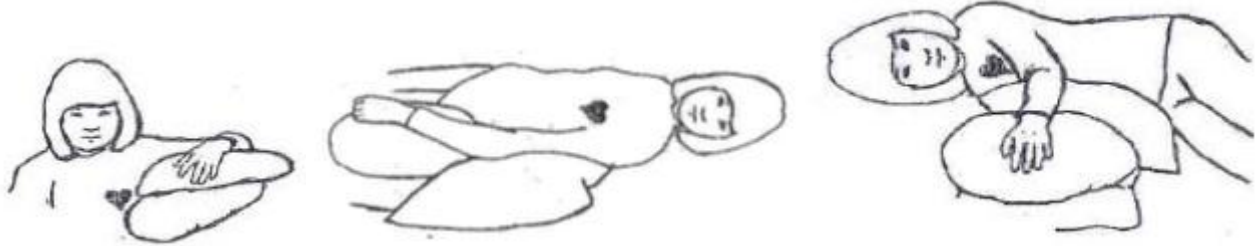
persists longer than 3 months, these may be early signs that lymphedema is present.

- The goal of elevation is to avoid prolonged dependent positioning of affected arm.
- Technique: The angle of the arm should be above the heart level while sitting or lying. Position the affected arm slightly away from the body and supported on

pillows so hand and fingers are higher than wrist and elbow is higher than shoulder. The arm should be relaxed and held as straight as comfortable.

-Avoid lying on affected arm and trunk.

-Elevate for 45 minutes two to three times a day and anytime at rest.



Elevate arm above heart level.

CONCLUSION

Mastectomy with axillary lymphnode dissection have a natural tendency to limit the arm movement that can lead to muscle tightness of the under arm and shoulder. Muscles seize up very quickly if they are not used, so it is important to carry on with these exercises as part of the daily routine. Arm stiffness or weakness can occur long after surgery and following radiotherapy.

Stiffness can also recur years later. Regular exercises plays an important role in releasing muscular tension, prevent scar tissue development and restore the strength and flexibility of the joints and muscles that have been affected by the surgery and decrease the chance of arm dysfunction in the affected arm. Keep exercising until full range of movement will occur just before to surgery.

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