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Exercise for the Patient after Breast Cancer Surgery

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Objective: *To describe how mobilization stretches and exercise decrease shoulder impairments, a complication related to breast cancer surgery, thus improving quality of life.*

Data Sources: *PubMed, Medline, Medline-Ovid.*

Conclusion: *Mobilization stretches and exercises after breast surgery are an effective way to improve shoulder range of motion and decrease chest tightness and pain.*

Implications for Nursing Practice: *Nurses who provide care to breast cancer patients need to teach and encourage patients to exercise postoperatively to eliminate or minimize the side effects of surgery.*

Key Words: *breast cancer, surgery, exercise benefits, mobilization stretches, weight training, exercise.*

The survival rate for breast cancer patients is improving. However, the number of cases each year has not changed, with 249,260 cases diagnosed and 40,890 deaths reported in 2016.[1] Breast cancer is the most frequently diagnosed cancer in women and ranks second as a cause of death. There are several risk factors that can be modified, such as weight gain after the age of 18, being overweight, and obesity in post-menopausal women, use of hormone therapy, alcohol consumption, and physical activity.[1] The first line of treatment for breast cancer is surgery to remove the cancer from the breast and to determine the stage of the disease.[2] Likewise, the first line of treatment to prevent postsurgical complications includes planned mobilization through physical activity to include stretching exercise. This article reviews how exercise is a strategy for the treatment of the physical and psychological complications from the treatment of breast cancer.

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Preoperative Considerations When Undergoing Breast Cancer Surgery

Surgical treatment for breast cancer includes lumpectomy, partial mastectomy, total mastectomy with or without reconstruction, mastectomy

TABLE 1.
Preoperative Assessment Includes the Following Baseline Measures

1. Inspect posture for the presence of normal posture, kyphosis, scoliosis, and pronated shoulders.
2. Measure arm circumference of both arms.
   Measure the wrist 5 cm below the olecranon process and 10 cm above the olecranon process.
3. Shoulder range of motion (ROM)
   Measure with a goniometer.
   Normal shoulder ROM is observed with the arm straightened, situated next to the ear, creating a 180° angle (shoulder flexion).
4. Measure body weight and calculate body mass index (BMI).
   BMI calculator reference available at:
   http://www.nhlbi.nih.gov/health/educational/lose_wt/BMI/bmicalc.htm
5. Assess for current exercise habits to include
   Type of exercise (eg, walking, biking, aerobics, yoga, Pilates, tennis, gardening).
   Duration: Length of time accumulated each day.
   Frequency: Number of days each week.
   Intensity: How hard (light, moderate, or vigorous) exercise.

with a transverse rectus abdominis myocutaneous, deep inferior epigastric perforators, or latissimus dorsi tissue flap plus sentinel or axillary lymph node dissection.

The diagnosis of breast cancer affects the physiological and psychological behavior of each patient,[3] thus preoperative teaching is most important. Being aware of the patient's anger, fear, anxiety, and depression concerning disfiguring surgery is a primary consideration. Further, psychological behaviors can affect the patients' physical side effects, causing more difficulty in managing these side effects which may cause a longer recovery.[4,5] The complications from surgery include pain, seroma, hematoma, surgical site infection, fatigue, restricted shoulder range of motion, joint arthralgia, and lymphedema.[6] Patients should be encouraged to play an active part in their recovery and postoperative exercises can help decrease the negative effects of these complications.

Reconstructive surgery, such as transverse rectus abdominis myocutaneous, deep inferior epigastric perforators, or latissimus dorsi tissue results in changes in muscle location and the patient will have more postoperative restrictions to prevent complications such as bleeding or loss of circulation, tissue flap necrosis, fat necrosis, and abdominal weakness.[7] The plastic surgeon will provide recommendations for the patient's activity level for the first 4 weeks postsurgery to prevent complications and promote recovery. Prevention and early intervention of potential common complications can be detected by collecting a baseline assessment of the patient's wrist circumference, posture, body weight, and current exercise habits.

Axillary lymph node dissection may cause or increase the risk of developing lymphedema.[8] Lymphedema can occur directly after surgery or years later. During the preoperative assessment it is important to do baseline arm measurements of both arms to provide early detection of lymphedema postoperatively, and begin early treatment of lymphedema. The measurements are the circumference of the wrist, and 10 cm above and 5 cm below the olecranon process on both arms for comparison.[9,10]

Posture can be affected by the surgery as a consequence of protective posturing. After a mastectomy with or without reconstruction, a patient may develop rounded (pronated) shoulders, a hunched over upper back, and the head in a forward position. This occurs because the muscles become tight and shortened, which creates a muscle imbalance that can lead to future head, neck, and back problems. The goal for the patient postoperatively is to regain normal range of motion. Teaching mobilization stretch exercises preoperatively prepares the patient for the shoulder movements to be done postoperatively. All of the stretch exercises are coordinated with breathing. The objective of these stretches are to decrease chest and shoulder tightness, achieve full range of motion around the shoulder joint, improve posture and restore overall physical mobility.[11] Teaching the patient preoperatively may prevent postoperative problems such as frozen shoulder and chronic pain leading to muscular weakness. Consequently, baseline measurement is important during the preoperative assessment (see Table 1).

A goniometer, an instrument to measure angles, can be used to measure shoulder flexion of a patient