Pilates after Breast Cancer Surgery

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Abstract

No one knows the exact causes of breast cancer. A risk factor is something that may increase the chance of getting a disease. Some risk factors can be avoided, such as drinking alcohol, but most risk factors, such as having family history of breast cancer can’t be avoided, and many women having risk factor never develop breast cancer.

Recovery after surgery involves healing both physically and emotionally. Pilates is being used to support treatment and recovery for breast cancer patients.

This case study tells a story about myself after breast cancer surgery, during the treatment, and how Pilates correcting my posture using BASI block system.
Table of content

Abstract..................................................................................................................2
Anatomical description.........................................................................................4
Study Case.............................................................................................................8
Desired result after breast cancer.................................................................9
BASI conditioning program for breast cancer survivors......................11
Conclusion..........................................................................................................14
Bibliography.......................................................................................................15
Anatomical Description

Breast are made up of glands, duct and fatty tissue. Groups of glands are called lobules and this can produce milk. The milk then flows from the lobules through thin tubes called ducts toward the nipple. The fatty tissue lies between and around the ducts and lobules.

Breast tissue contains lymph nodes and lymph vessels that help make up the lymphatic system. The purpose of the lymphatic system is to help fight infection in the body. It does this by carrying lymph, a clear fluid containing immune system cells and waste products to the lymph nodes. The lymph nodes trap harmful bacteria as well as cancer cells. Most lymph vessels of the breast lead to lymph nodes under the armpit, called axillary nodes.
What is breast cancer?

Cancer in the breast is malignant tumor that begins most commonly in the cells of either ducts or the lobules. If it spreads to the lymph nodes, there maybe noticeable swelling under the armpit in the axillary nodes. There are both non – invasive and invasive forms of breast cancer. Non-invasive refers to a cancer that has not spread beyond either the milk ducts or lobules whereas invasive refers to a cancer that has -spread further.

Mastectomy

A mastectomy is surgery to remove a breast or part of breast. It is usually done to treat breast cancer. Types of breast surgery include:

- Total (simple) mastectomy: removal of breast tissue and nipple
- Modified radical mastectomy: removal of the breast, most lymph nodes under the arm and often the lining over the chest muscles
- Lumpectomy: surgery to remove tumor and small amount of normal tissue around it

The surgery depends on the stage of cancer, size of the tumor, size of the breast, and weather the lymph nodes are involved. Many women have breast reconstruction to rebuild the breast after mastectomy.

Lymphedema

Lymphedema is a potential side effect of breast cancer surgery and radiation therapy that can appear in some people during the months or even years after treatment ends. Lymph is a thin, clear fluid that circulates throughout the body to remove wastes, bacteria, and other substances from tissues. Edema is the buildup of
excess fluid. So Lymphedema occurs when too much lymph collects in any area of the body. If lymphedema develops in people who've been treated for breast cancer, it usually occurs in the arm and hand, but sometimes it effects the breast, underarm, chest, trunk, and/or back.

As part of surgery, many people with breast cancer have at least 2 or 3 lymph nodes removed from under the arm (sentinel lymph node biopsy), and sometimes many more nodes (axillary lymph nodes dissection). If the cancer spread, it has more likely moved into to those underarm lymph nodes first because they drain lymph from the breast. Many people also need radiation therapy to the chest area and/or underarm. Surgery and radiation can cut off or damage some of the nodes and vessel trough which lymph moves. Over time, the flow of lymph can overwhelm the remaining pathways, resulting in backup of fluid into the body’s tissues.

-Lymph-node dissection and side effect

If someone has a lymph-node dissection, she may experience a frozen stiff or frozen shoulder a month after breast surgery. When the armpit hurts, it’s natural to protect it by keeping the arms immobilized. But when they don’t use arm, the shoulder muscles grow weak and the tendon and ligaments tighten. This can lead to more pain and, in some instances, to frozen shoulder, where joint becomes locked.

-Radiation side effect

Radiation can result in muscle soreness, especially in the pectoralis major muscle, which runs above behind the breast. That’s because radiation causes inflammation of the muscle, and as it begin to regenerate, it can get sore and stiff.
Chemotherapy side effect

- The most common problems are: difficulty paying attention, learning new things, and speedily processing information.

- Chemotherapy can cause fatigue: the body is still trying to heal from surgery, radiation, and chemotherapy. Much of the fatigue while on chemotherapy and after is caused by anemia. This can be treated by transfusions or by a drug that stimulates the bone marrow to produce more red blood cells.

- Chemotherapy can cause weight gain: although the cause of weight gain with chemotherapy is not clear, one study revealed that 50 percent of patients gained more than 10 pounds. This was independent of type of chemotherapy, age, and menopause status.

- Chemotherapy and hormone treatments can lead to bone loss: Premenopausal women those chemotherapy and hormone treatments lead to premature menopause and postmenopausal women who aromatase inhibitors may experience accelerated bone loss.

-Frozen Shoulder

The shoulder is a ball and socket joint. The end of upper arm bone (humerus) sits in contact with the socket of shoulder blade (scapula). The shoulder capsule is fully stretched when raise arm above the head, and hangs down a small pouch when arm is lowered. In frozen Shoulde, bands of scar tissue from inside the shoulder capsule, causing it to ticken swell and tighten. This means there is less space for upper arm bone in the joint, which limit movements.
-Why Pilates after breast cancer?

Many women feel unable to function and perform daily activities while undergoing chemotherapy or radiation treatments, and this fatigue can be overwhelming as treatments are combined surgery is added to the mix. Pilates offer a gentle, low-impact to regular exercise that can help one regain strength and endurance. Pain and loss range of motion in the shoulder and the chest area other common issues for survivors who are considering exercise after treatment. Because many Pilates exercises are performed in the supine position, the neck and the back are supported, making it easier to feel which muscles are working in the back and to ensure that using the right ones, and correct the muscular imbalance.

Postures is another area concern for many survivors after surgery, often woman’s back will become rounded following the surgery.

STUDY CASE

My name is Lie Ching Ching, I am a mother with 3 children, and I work as a pilates teacher since 9 years ago. I was 34 years old when I was diagnosed with breast cancer. I decided to see the Oncologist and referred me to Breast Surgeon. The doctor asked me to take ultrasonogafi, mammogram and bioption. The result showed I diagnosed a breast cancer at my right breast. 1 week after bioption result im having a surgery and reconstruction on my right breast at the same times as doctor suggested.

At first and second week when I got home from hospital. I’m having a problem to move my right arm, especially when I needed to lift up my arm, like combing my hair or take off my clothes. Doctor suggest me to not carry any heavy object using my right arm or my right shoulder. When the nights comes I felt
uncomfortable at my back when lying on my right side on the bed. I was given a pamphlet with exercise to do from hospital, and I have tried it everyday but it doesn’t helped much. 1 month after the surgery I have to take 6 times chemotherapy every 3 weeks and 15 times radiation.

**Desired result after breast cancer**

The muscles of the shoulder either connect the scapula and clavicle to the trunk, or connect the clavicle, scapula and body wall to the proximal (top) end of humerus. The trapezius, levator scapulae, and rhomboids originate from the base of the skull and/or spine and connect to the scapula and clavicle to the trunk of the body. The pectoralis major, pectoralis minor, lattisimus dorsi, teres major and deltoid connect to the proximal end to the humerus and anchor it to the body.

The most important shoulder muscle are the four rotator cuff muscles- the subscapularis, susprapinatus, infrapinatus, and teres minor muscles- which connect the scapula to the humerus and provide support for glenohumeral joint.

Muscle of the arm enter into the shoulder complex are separated into anterior (flexor) and posterior (extensor) compartments. These include biceps brachii, triceps brachii, coracobrachialis.
It is important to do exercise after breast cancer surgery to get the arm and shoulder moving again. Exercise help to decrease any side effect of the surgery and help me to get back to my usual activities. Exercise after radiation therapy are more important to keep arm and shoulder flexible. Surgery and radiation therapy will affect the arm and shoulder long after treatment is finished, because of this, it is important to develop a regular habit of doing exercise to maintain arm and shoulder mobility after radiation treatments for breast cancer.
**BASI conditioning program for breast cancer survivors**

It is important to talk with the doctor before starting any exercises. The doctor might suggest to see physical therapist or occupational therapist. Some exercise shouldn’t be done until drain and stitches are removed. But some exercise can be done soon after surgery.

I started to practice these exercises using BASI block system 8 weeks after my surgery. Start from fundamental progress to intermediate using mat and apparatus. The training will be focus to strengthening and stabilizing the shoulder. I practice 5 days a week and can be alternated between mat and equipment. And nothing should be painful during the exercise.

**Warm Up:**

Mat-Pelvi curl, spine twist supine

Cadillac- Mini roll up, mini roll up obliques, roll up with roll up bar

**Footwork:** exercise can be done on reformer, Cadillac or wunda chair

Reformer/Cadillac/Wunda Chair: heels, toes, V toes, open v heels, open V toes, calf raises, prances, single leg heel, single leg toes

**Abdominal work:**

Spine Corrector – Chest lift, The reach, Overhead

Reformer: - 100, coordination
**Hip work:**

Reformer: - Frog, circles (up, down), opening

Cadillac: - single leg supine (frog, circles up+down, hip extension, bicycle)

**Spinal Articulation**

Reformer: Short Spine

Cadillac: Tower Prep, tower

**Stretches:**

Spine Corrector: - Shoulder stretch lying side

Pole series: - shoulder stretch, Overhead stretch

I also do this after arm work to keep the shoulder flexible as part of the work

**Full body Integration:**

Mat: - Front support, back support, leg pull front, leg pull back

Reformer: - Up stretch 1, Up stretch 2, Elephant

Cadillac: - Sitting forward, side reach, saw

**Arm work:**

Side effect from surgery include decrease mobility in the shoulder and decrease stability and strength in the shoulder girdle. All the arm work will be improving range of motion, build shoulder strength and scapular stabilization.
Reformer:

Arm supine series (extension, adduction, circles up and down, triceps)

Sitting Arm series (Chest expansion, Rhomboids, Biceps, hug a tree, salute)

Rowing series (Rowing back 1 and 2, rowing front 1 and 2)

Cadillac: Push Trough Series: -Shoulder Adduction sitting side, shoulder adduction sitting forward, Scapulae Glide, sitting side

Leg work:

Mat: -Glute kneeling series (Hip extension bent knee, hip abduction, hip extension straight leg, adductor lift)

Lateral flexion/Rotation:

Mat: Side lift, side kick, kneeling side kick

Reformer: Mermaid

Back extension:

Reformer: Pulling strap 1, pulling strap 2

Wunda chair: Swan basic, swan on floor, back extension single arm
Conclusion:

After breast surgery, arm feel stiff, very important to get the shoulder motion back so arm will function normally. Pain from surgery can keep me from moving my shoulder normally, but the less I move my shoulder, the more stiff can become. Exercise are important to do every day to regain full mobility. Pilates exercise re-patterning my body back to essential of movement, and training body in a safe and efficient movement pattern, improve my core strength, and recruit correct muscle which is reduce my chest, upper back, and shoulder pain.

After 2 months of consistent work, my pain disappeared. The strength of my upper back extensor muscle bring my head, neck, and shoulder back into proper alignment. Pilates has improved my quality of life.
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