Objectives

- Understand the role of the physical therapist and the operational process with the patient immediately post breast cancer surgery
- Appreciate the delivery of patient education regarding sensations for patients with and without reconstruction
- Understand the purpose of lymphedema education in this early post surgical phase
- Distinguish the different activity restrictions and exercises instructed to patients following non reconstructive vs reconstructive surgery
- Realize the potential barriers to providing education and interventions to patients immediately post surgical breast cancer surgery
- Become aware of the multidisciplinary approach the patients receive in this early phase and through follow up

This presenter has no conflict of interest to report regarding any commercial product/manufacturer that may be referenced during this presentation.
Breast Cancer

- Statistics according to the National Cancer Institute:
  - 232,340 women will be diagnosed in 2013
  - 2,240 men will be diagnosed in 2013
- Treatment for breast cancer may include:
  - Surgery
  - Radiation
  - Chemotherapy
  - Hormonal therapy

Role of the Physical Therapist in the Acute Post-Surgical Phase

- Demonstrate and encourage immediate and safe upper extremity movement via surgery specific exercises to prevent post operative complications
- Teach and reinforce pre-surgical education regarding sensations and lymphedema

Operational Process and Procedures
Referral Review and Clarification

- Track and sort patients via real-time patient lists within the breast surgical service
- Review orders and charts of all patients who are post-op day one
- Sort patients into categories for education
  - Non-reconstruction
  - Reconstruction

Patient Inclusion by Procedure for Non-Reconstructive Education

- Axillary lymph node dissection (ALND)
- Lumpectomy/partial mastectomy with ALND
- Mastectomy with sentinel lymph node biopsy (SLNB)
- Mastectomy with ALND (aka modified radical mastectomy, MRM)

*all listed can be unilateral or bilateral procedures

Patient Inclusion by Procedure for Reconstructive Education

- Tissue expander (TE)
- Tissue transfer
  - Deep inferior epigastric perforator (DIEP)
  - Latissimus dorsi flap (usually done with TE)
  - Pedicle transverse rectus abdominus muscle (TRAM)
  - Free TRAM

*all listed can be unilateral or bilateral procedures
Format for Providing Intervention

• One-on-one format
  – All patients following unilateral and bilateral non-reconstructive and tissue expander surgeries
  – Patients remain in hospital as outpatients, shorter than 24 hour stay
• Group format
  – All patients following tissue transfer surgeries
  – Patients are in hospital as inpatients
• Verbal demonstration
• Educational handouts
  • Written booklet
  • Video DVD

Physical Therapy Intervention:
EDUCATION REGARDING SENSATIONS
Sensations Following Breast Surgery

- Incisional sensation
- Phantom sensation\(^3\)
  - Specifically for patients who have not had reconstruction
  - Short term vs. long term
- Chest tightness related to tissue expanders
- Referred sensation\(^4\)
  - Related to injury or resection of sensory nerves
  - Most often involved nerve: intercostal brachial nerve
  - All patients may experience
  - Short term vs. long term

Eighteen Sensations Following Breast Surgery\(^4\)

- Tender
- Sore
- Pull
- Ache
- Painful
- Twinge
- Tight
- Stiff
- Prick
- Throb
- Shoot
- Tingle
- Numb
- Burn
- Hard
- Sharp
- Penetrate
- Nag

Physical Therapy Intervention:
EDUCATION REGARDING LYMPHEDEMA
Lymphedema Education

• Education provided to all patients, SLNB and ALND\(^6,6\)
• Lymphedema defined
• Awareness of lymphedema
• Hand and arm precautions
• Frame of reference regarding need for one-on-one follow-up

Lymphedema Prevention Education\(^6,7\)

• Hand and arm precautions include:
  – Limiting risk when medical intervention requires venipuncture or peripheral line access
  – How to prevent and care for cuts, scratches, and burns
  – Importance of exercising the arm and being active in general

Physical Therapy Intervention:

ACTIVITY RESTRICTIONS
Activity Restrictions

• Patients who have not had reconstruction
  – Tolerance to exercise in relation to pain
• Patients who have had reconstruction
  – Lifting - 5 lbs or less
  – No aerobic activities/bouncing
  – ROM

Shoulder ROM Restrictions Based on Surgery Type

<table>
<thead>
<tr>
<th>90 degrees</th>
<th>60 degrees</th>
<th>45 degrees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tissue Expander</td>
<td>Latissimus Dorsi Flap</td>
<td>TRAM with Thoracodorsal Anastomosis</td>
</tr>
<tr>
<td>DIEP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pedicle TRAM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Free TRAM with Internal Mammary Anastomosis</td>
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</tbody>
</table>

Physical Therapy Intervention:
EXERCISE PRESCRIPTION
Patients without Reconstruction

- All exercises to begin on post-operative day (POD) 1
- Frequency - 5 times/day
  - 10 repetitions for ROM exercises
  - 1 repetition with 1 min hold for stretches
- Exercises include:
  - Shoulder rolls
  - Hands behind neck
  - Back climb
  - Forward wall climbs
  - Sideways wall climbs
  - Arm circles
  - W stretch

Patients Following Reconstruction

- Some exercises can be performed on POD 1 (see chart*)
- Frequency - 5 times/day
  - 10 repetitions for ROM exercises
  - 1 repetition with 1 min hold for stretches
- Exercises instructed while maintaining ROM restrictions include:
  - Shoulder rolls
  - Angle wings
  - Arm circles
  - W stretch
  - Back climb
  - Forward wall climbs
  - Hands behind neck

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<table>
<thead>
<tr>
<th>Exercise</th>
<th>Tissue expander</th>
<th>Latissimus flap</th>
<th>DIEP</th>
<th>Pedicle TRAM</th>
<th>Free TRAM</th>
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<tr>
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<td>Wings</td>
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<tr>
<td>Back climbs</td>
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<tr>
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<tr>
<td>Hands behind neck</td>
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</table>
Language and Cognition

• Language barriers
  – Use of interpreters
  – Provision of translated educational booklets

• Cognitive barriers
  – Pre-existing conditions
  – Caregiver training is essential

Pharmaceutical

• Inability to participate/tolerate education and exercises due to:
  – nausea
  – decreased arousal

• Significant improvements in this area due to recent changes in regimen

Psychosocial

• Inability to focus on education due to experience of any of the following:
  – Grief/loss
  – Fear
  – Body image/gender identity concerns
  – Sexuality concerns
Additional Patient Education, Activities, and Resources

During Hospital Stay…

• Nursing education
  – Drain care
  – Caring for incision
    • Signs of infection, hematoma, seroma
  – Surgical bra donning
• Social Support
  – Groups
  – One-on-one with Patient to Patient Support Program
• Look Good, Feel Better
  – Program offered weekly by patient volunteers
  – Free products provided by high-end cosmetic company
• Caring Canines

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Following Hospital Stay…

• Support groups
  – Within MSKCC
  – Referral to outside groups
• Boutique at MSKCC breast center
• Post-operative surgical team follow-up
  – Update activity restrictions
  – Encourage and progress exercises for ROM

Outpatient Physical Therapy

• Indications for referral include:
  – Shoulder ROM deficits
  – Strength deficits- overall or specific (ex. "core" muscle weakness)
  – Fascial restrictions
  – Axillary web syndrome, "cording"
  – Impaired performance in ADLs
    • can refer to Occupational Therapy
  – Lymphedema- clinical or subclinical
  – Postural deficits
  – Decreased endurance

Cording in the Axillary Region
Common Outpatient Physical Therapy Interventions

- ROM exercises
- Muscle/muscle group specific strengthening exercises  
  - Core  
  - Shoulder girdle
- Manual therapy  
  - Stretching  
  - Fascial mobilization  
  - Visceral mobilization
- Postural retraining  
  - Including bra fitting for postural correction
- Lymphedema/edema control

To Summarize:

- Acute post surgical involvement in the breast surgery population is multi-faceted and multidisciplinary
- Early exercise is KEY for preventing post-operative limitations
- Several barriers exist during this phase of recovery
- Think holistically and refer outside when necessary following hospital stay
References