Disclosures

• None
Objectives

- Therapy techniques for post-mastectomy syndrome
- Rehabilitation precautions for post-mastectomy syndrome
- Medications for post-mastectomy syndrome
- Interventional procedures for post-mastectomy syndrome
- Psychological considerations in post-mastectomy syndrome
- Prevention of post-mastectomy syndrome
Therapy Techniques

Effectiveness of Postoperative Physical Therapy for Upper-Limb Impairments After Breast Cancer Treatment: A Systematic Review

Therapy Techniques: Multifactorial

• Two studies showed multifactorial therapy consisting of manual stretching and active exercises effectively treated impaired shoulder ROM at 6 months post-op

Therapy Techniques: Passive Mobilization

• One study showed beneficial effects of passive mobilization on shoulder pain and ROM

Therapy Techniques: Stretching

• One study investigating pectoral stretching program did not find any added value.

Therapy Techniques: Exercise Therapy

• Five studies investigated the effectiveness of exercise therapy
  – All found beneficial effect on shoulder ROM
  – One found positive effect on pain
  – Great variability in terms of type of exercises, frequency, intensity, and duration of program

Therapy Techniques: Timing of Therapy

- Three studies showed early start (POD#1) more beneficial for recovery of ROM
- Four studies showed greater incidence of seromas and wound drainage in group with early start vs those starting >7 days post-op

Therapy Techniques: Authors’ Recommendations

• First week post-op: low-intensity program involving elbow/wrist
• 7-10 days post-op: gradually increase intensity  
  – Passive mobilization, manual stretching, active exercises
• No recommendations can be made on timing, content, intensity
Postmastectomy Syndrome: OT

- Patients need help with ADLs
- Difficulty with household chores, dressing

Therapy Techniques for Specific Syndromes:

• Incisional pain
• Cording
• Shoulder dysfunction
• Postreconstruction pain syndrome
• Neuropathic syndromes
  – Intercostobrachial neuralgia
  – Phantom breast pain
Incisional Pain

- From local adherence of incision to chest wall
- Presents with incisional hypersensitivity
- Decreased mobility of incision
Therapy Management: Incisional Pain

- Scar massage/mobilization
- Desensitization techniques
Cording (Axillary Web Syndrome)

• Common after ALND shortly after surgery
  – Incidence between 6-48%


• Sclerosed/thrombosed lymphatics that feels like “cords”
  – Can be in axilla and into arm
  – Radiation may be a risk factor
Cording (Axillary Web Syndrome)

- Restricts ROM
- Usually self limiting in 2-3 months
- **NOT** indicative of lymphedema
Therapy Treatment for Cording

- Soft tissue techniques
- Nerve glides
- ROM
- May have audible “snap”
Shoulder Dysfunction: Impingement

Protective posturing/radiation

Shortening of pec muscles

Decreased size of subacromial arch due to forward depressed shoulder girdle

Rotator cuff impingement
Shoulder Dysfunction: Range of Motion in Breast Cancer

• Decreased planes of motion:
  – flexion
  – abduction
  – external rotation

Shoulder Dysfunction: Scapular Mechanics

• Scapulothoracic motion altered in all planes
Shoulder Dysfunction: Muscle Performance in Breast Cancer

• Multiple studies have shown weakness in:
  – Abduction
  – Flexion
  – Extension
  – External/internal rotation
  – Scapular upward rotation/depression/adduction
Based on above findings, a sensible PT rx might include:

• Pec stretching
• Scapular stabilization/mechanics exercises
• Strengthening in all planes
Post-Reconstruction Pain Syndrome (PRPS)

- Neuromuscular symptoms including: paresthesias, dysesthesias, cramping, spasms, or other characteristically neuropathic discomfort in the chest wall, shoulder, upper arm, abdomen, and/or back following breast surgery with reconstruction for breast cancer.
Etiology of PRPS
PRPS Therapy

• Stretching of pectoralis and serratus
• Manual release of tissues around implant/tissue expander
Intercostobrachial Neuralgia
Intercostobrachial Nerve

- Cutaneous branch of 2nd intercostal nerve (T2)
- Supplies the posterior and medial upper arm, axilla, and lateral chest wall
  - Much anatomic variation
- Increase risk of injury during ALND
Intercostobrachial Neuralgia Therapy

• Desensitization
Phantom Breast Pain

• May affect up to 53% of patients
Phantom Breast Pain Therapy

- Desensitization
- Mirror therapy
Therapy Precautions

- Caution to tissue expander/implant
- Common sense lymphedema precautions
  - Avoid aggressive deep tissue work to lymphedematous limb or limb at risk of lymphedema
“ABSOLUTE” Precautions

• Avoid physical agents or e-stim directly over active tumor
• Avoid heat/ice in potentially ischemic or insensate areas
• Avoid heat in patients at high bleeding risk
• Avoid heat/ice, e-stim, TENS in areas at risk for fracture
• Avoid traction in area of malignancy
  – Fracture risk
Postmastectomy Syndrome: Medications
Postmastectomy Syndrome: Oral Medications

• Anti-depressants
  – Venlafaxine showed significant pain relief vs placebo
  – Amitriptyline 25-100 mg daily resulted in >50% pain relief in 8/15 patients
Postmastectomy Syndrome: Topical Medications

• Capsaicin
  – 5/13 patients had >50% pain relief

• Lidocaine patch
  – 28 patients randomized to lidocaine patch vs placebo patch
  – No difference in pain scores between the two groups
Postmastectomy Syndrome: Other Medications

- Anti-inflammatories: topical or oral
- Nerve stabilizers: gabapentin, pregabalin
- Opioids
- Topical compounds
Postmastectomy Syndrome: Modalities

- TENS no better than placebo for postmastectomy pain
Postmastectomy Syndrome: Acupuncture

• Randomized controlled trial of acupuncture vs usual care showed decreased pain and improved ROM in the acute postoperative period after breast surgery
Injections in Postmastectomy Syndrome

Can they be performed?
Injections in Postmastectomy Syndrome

Can they be performed?
Injections in Postmastectomy Syndrome

Can they be performed?

Yes for the most part…
Injections in Postmastectomy Syndrome

Can they be performed?

Yes for the most part…

Precautions to consider:
- Skin issues during radiation
- Blood counts during chemotherapy
- Lymphedema/infection risk
Injections in Postmastectomy Syndrome: Musculoskeletal

• Rotator cuff impingement → subacromial injection

• Adhesive capsulitis → glenohumeral injection
Intercostobrachial Neuralgia Management

- Intercostobrachial nerve block
Intercostobrachial Nerve Block Technique
# Case Series for Intercostobrachial Nerve Block

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Neuroma Injections

• 19 patients injected
• 93% had complete relief of pain after injection of T4 and/or T5 neuromas with bupivacaine and dexamethasone
• http://cancer.ucsf.edu/videos/Esserman_v4.mp4

Neuroma Injections
Botulinum Toxin for Postmastectomy Reconstruction Syndrome

• Consider injecting pectoralis major, serratus anterior

• Don’t pop the implant!
  – Can use ultrasound
Botulinum Toxin for Postmastectomy Reconstruction Syndrome: Evidence

• 75-100 units botulinum toxin A in pec major resulting in 100% pain relief
• 250 units of abobotulinumtoxin A into pec major resulting in 100% pain relief
Psychosocial Factors in Postmastectomy Syndrome

- Depression
- Anxiety
- Self-image
- Sexuality
Psychosocial Factors in Postmastectomy Syndrome

• No association with surgical factors, disease-related variables, radiation, or chemotherapy

• **Catastrophizing**, somatization, depression, anxiety, stress, sleep disturbance association with postmastectomy pain
  
Postmastectomy Syndrome Prevention

- Regional anesthesia
  - 40 patients assigned to general anesthesia vs general anesthesia plus paravertebral nerve block
  - Patients in the nerve block group had significantly less chronic pain than general anesthesia alone 4-5 months post-op

Postmastectomy Syndrome Prevention

- **EMLA**
  - 46 patients randomized to chest wall EMLA cream vs placebo peri-operatively
  - Pain intensity significantly less in EMLA group 3 months post-op

Postmastectomy Syndrome Prevention

- Gabapentin peri-operatively
  - Single dose of 600 mg gabapentin one hour pre-operatively
  - Treatment group had less post-op pain and less opioid consumption

Postmastectomy Syndrome Prevention

- Minimizing pre-op pain/ROM restrictions

PREHAB!!
Intercostobrachial Neuralgia Prevention

• Prevention:
  – Nerve sparing surgery may or not help prevent this pain syndrome
    • Meta-analysis showed that complaints when nerve is severed are typically **numbness** which may be less bothersome

Postreconstruction Pain Syndrome Prevention

• Botulinum toxin injected into pec major, serratus, rectus abdominus intra-operatively during mastectomy and tissue expander placement

• Botox group had significantly less post-op pain and narcotic use than control group
Summary

- Postmastectomy syndrome rehabilitation often requires a multimodal approach
- Patient assessment should look for specific cause of symptoms which will dictate treatment options
- So much is still not known so plenty of research possibilities
Questions???

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