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Postoperative therapy protocol

Latissimus dorsi tendon transfer protocol

This protocol provides the therapists with a general guideline for patients after this type of procedure. Each patient's surgery and postoperative progress may be different, and this protocol is not intended to substitute for one's clinical decision making based on exam findings, individual progress, and/or the presence of post-operative complications. If a clinician requires assistance in the progression of a post-operative patient they should consult with the referring surgeon.

Passive Range of Motion (PROM): PROM for patients who have undergone a LDTT is defined as ROM that is provided by an **external source** (therapist, instructed family member, or other qualified personnel) with the intent to gain ROM without placing undue stress on either soft tissue structures and/or the surgical repair. Note: **PROM is not stretching**

The **scapular plane** is defined as the shoulder positioned in 30 degrees of abduction and forward flexion with neutral rotation. ROM performed in the scapular plane should enable appropriate shoulder joint alignment.

Weeks 1-4 --

- Abduction sling or gunslinger orthosis should be worn 24 hours a day; patient is directed to do sponge bath; if for some reason patient needs to have brace removed, an assisted need to maintain the abducted and slightly external rotation position
- No passive shoulder internal rotation, adduction, and extension
- No forced forward flexion PROM
- No upper extremity weight bearing with the operative shoulder
- Active range of motion (AROM) elbow, wrist, and hand as indicated
- AROM cervical spine as indicated

Week 5-6

- Passive range of motion can begin
    - Forward flexion as tolerated
    - Forward elevation in scapular plane as tolerated
    - External rotation as tolerated
    - Avoid: adduction, internal rotation
- Brace to be worn at all times except administered therapy
- Continued frequent cryotherapy
- Start strengthening: scapula retraction, shoulder shrugs, sub maximal pain free deltoid isometrics
- Interferential or high volt electrical stimulation for pain control as tolerated

Weeks 7-12

- Goal for this important period of therapy is to:
    - restore functional AROM
    - Facilitate latissimus dorsi to function as an external rotator and depressor of the shoulder
    - Restore proprioception
    - Encourage use of the operative upper extremity for light activities of daily living

    - Enhance strength to allow for active motions
- Wean brace; surgeon may provide a sling to use during the transition phase; this wean process should take no more than 7-10days
- PROM
    - Forward flexion as tolerated, no forceful stretching
    - Forward elevation in the scapular plane as tolerated
    - External rotation neutral to end ROM as tolerated
    - Internal Rotation as tolerated, no forceful stretching
    - Extension to tolerance, no forceful stretching
    - Horizontal adduction, no forceful stretching
- Active assisted range of motion (AAROM) and AROM -- begin in supine and sidelying then progress to antigravity positions as appropriate
    - Forward Flexion (lawn chair progression)
    - Forward elevation
    - External Rotation
    - Internal Rotation
    - Prone Rowing AROM Exercises for periscapular musculature
    - Joint Mobilizations as indicated
    - **use of a biofeedback device is helpful for visual and auditory feedback to re-educate the Latissimus muscle to function as an external rotator and elevator. Neuromuscular electrical stimulation (NMES) is useful to assist in muscular recruitment as well.**
- Strengthening
    - Scapular retraction
    - Shoulder shrugs
    - Rotator Cuff Isometrics
    - Wall or table push-up plus
- Proprioception & Stability
    - Light open chain proprioceptive and rhythmic stabilization exercises as tolerated
- Precautions
    - No forced shoulder internal rotation, adduction, or extension stretching
    - No forced forward flexion PROM
    - No shoulder strengthening exercises
    - No lifting or carrying with the operative upper extremity

Weeks 13-16

- Continue ROM exercises as before
- Initiate gentle terminal stretching as indicated in all planes
- Joint mobilization as indicated
- No forced stretching all planes
- No heavy lifting or carrying with the operative upper extremity
- No sports activity
- No strengthening with heavy weights or weight equipment
- Strengthening (sport cord / resistance tubing / light free weights): begin in supine and sidelying then progressed to antigravity positions as appropriate
    - Deltoid
    - Periscapular musculature
    - External Rotation (isometrics progressed to isotonics)

    - Internal Rotation
    - Biceps, Triceps, general UE conditioning
    - Light closed chain activities
- Proprioception:
    - Position awareness exercises (Sport Rac, if available)
    - Rhythmic Stabilization exercises

Week 17-

- Precautions:
    - No forced stretching all planes
    - No heavy lifting or carrying with the operative upper extremity
    - No strengthening with heavy weights or weight equipment
- Strengthening:
    - Progress Resistive Exercises as tolerated
    - Initiate push-up plus progression
    - Gentle weight training
        - Hands in sight / no wide grip exercises
        - Avoid cross body activities (avoid combined IR and adduction activities)
        - Minimize overhead activities
- Light sport / recreation activity specific skills
- Progress proprioception activities
- Advance closed chain exercises