COMPREHENSIVE ORTHOPAEDICS

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Megan R. Wolf, MD
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Pectoralis Major Tendon Repair
Post-Operative Protocol

Phase I- Maximum Protection

Weeks 0 to 4:

- Wear sling at all times
- No GHJ range of motion for 2 weeks
- Initiate passive and active assisted range of motion at 2 weeks within range of motionrestrictions

  Goals
  - Reduce pain and inflammation
  - Protect surgical repair
  - Postural education
  - PROM/AAROM restrictions
    - Flexion to 90 degrees at 4 weeks
    - Abduction to 90 degrees at 4 weeks
    - Internal rotation progress as tolerated
    - No external rotation past neutral
    - No extension past neutralManual

  therapy
  - Graded glenohumeral and scapulothoracic mobilizations
  - STM to shoulder and cervicothoracic complex
  - Passive range of motionExercise

  progression
  - No GHJ ROM x 2 weeks
  - Cervical ROM and basic deep neck flexor activation (chin tucks)
  - Elbow, hand and wrist AROM
  - Pendulums
  - Active shoulder retraction
  - Shoulder AAROM within restrictions (cane, pulleys)
  - Encourage walks and low intensity cardiovascular exercise to promote healing

Phase II- Progressive Range of Motion

Weeks 4 to 6:

- Discontinue sling
- Initiate AROM
- Initiate submaximal isometrics (extension and abduction only)

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Goals

- Reduce pain and inflammation
- Protect surgical repair
- Postural education with cervical spine and neutral scapular positioning
- Range of motion restrictions (PROM, AAROM, and AROM):
  - Flexion to 120 degrees by week 6
  - Abduction to 120 degrees by week 6
  - Internal rotation progress as tolerated
  - External rotation to 30 degrees at 0-45 degrees abduction by week 6
  - Extension progress slowlyManual therapy
- Graded glenohumeral and scapulothoracic mobilizations
- Scar tissue mobilization when incisions are healed
- STM to shoulder and cervicothoracic complex
- Gentle sub-maximal therapist directed isometrics in extension and abduction

Exercise progression

- Supine and upright AAROM using cane, pulleys, etc.
- DNF and proper postural positioning with shoulder retraction
- Initiate submaximal isometrics in abduction and extension direction only
- Prone scapular series and sidelying scapular activation less than 90 degrees
- Open chain serratus activation
- External rotation against gravity (no resistance)
- Posterior capsular stretching in sidelying (sleeper stretch)
- Low to moderate intensity cardiovascular work

Phase III- Progressive Range of Motion and Strengthening

Weeks 6 to 12:

- Progress to full PROM and AROM
- Normalize glenohumeral and scapulothoracic arthrokinematics
- Painfree, sub-max isometric activation in all directions
- Initiate strengthening and closed kinetic chain exercisesGoals
  - Reduce pain and inflammation
  - Protect surgical repair
  - Progress shoulder range of motion as tolerated in all directions
    - Full PROM in all directions by week 10
    - Full AROM by week 12Manual

therapy

- Graded glenohumeral and scapulothoracic mobilizations
- Scar tissue mobilization when incisions are healed
- STM to shoulder and cervicothoracic complex
- Gentle contract-relax and hold-relax to gain range of motion while respectingrepaired tissue
- Manual perturbations in supine with arm at 90 degrees flexion and ER/IR atneutral
- Rhythmic stabilization and perturbations in quadruped for scapular and corestrengthening- bilateral progressing to unilateral/tripod position

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Exercise progression

- Initiate UE bike at 6 weeks
- Open chain serratus activation
- Prone and sidelying scapular series in full range of motion
- Painfree sub-max 6 direction rotator cuff isometrics
- Gradual progression of resistive exercises while protecting anterior shoulder
- Initiate closed kinetic chain exercises at 8 weeks
- Low to moderate intensity cardiovascular work (able to perform elliptical)

Phase IV- Advancing Strengthening and Plyometric Drills

Weeks 12 to 16:

- Full PROM and AROM
- Normalize glenohumeral and scapulothoracic arthrokinematics
- Advance strengthening program while protecting anterior shoulder capsule
- Progress to plyometrics at 12 weeks

Goals

- Full PROM/AROM in all directions
- Progress strength of limb

Manual therapy

- PROM and glenohumeral mobilizations if needed
- Manual perturbations
- PNF patternsExercise

progression

- End range stretching at 12 weeks
- Progress PNF patterns with protected end range of 90/90
- Advance gym strengthening program
- Initiate push up progression at wall at 12 weeks and gradually progress
- Initiate plyometric and rebounder drills in double hand progressing to single hand

Phase V- Return to SportWeeks 16 to 24:

- Follow up examination with physician at 6 months for release to full activity
- Initiate bench/pressing motion at 16 weeks
- Initiate sport specific exercises at 16 weeksGoals
  - Full ROM
  - Advance gym strengthening program
  - Initiate interval throwing program for athletes at 16 weeksManual therapy
  - STM and joint mobilization to glenohumeral, scapulothoracic and cervicothoracicas needed
  - Manual perturbations
  - PNF patterns

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Exercise progression

- Full ROM in all planes with protected end range 90/90
- Advance gym strengthening program maintaining anterior shoulder precautionswith pressing and chest fly exercises
  - Bench motion at 16 weeks
- Plyometric drills in single limb
- Sport specific exercises focus on eccentric loading and deceleration

Criteria for return to play:

- Full, pain-free range of motion
- Normal glenohumeral and scapulothoracic arthrokinematics
- >90% MMT using handheld dynamometer
- Full progression through throwing interval program

Anticipated return to sports:

- 4-6 months for contact and non-contact athlete/throwing athlete

Revised ***