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SUBPECTORAL BICEPS TENODESIS- REHABILITATION PROTOCOL

The intent of this protocol is to provide the clinician with a guideline of the post-operative rehabilitation course for a patient that has undergone a subpectoral biceps tenodesis. It is by no means intended to be a substitute for one's clinical decision making regarding the progression of a patient's post-operative course based on their physical 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.

Initial Post Operative Immobilization

- Elbow immobilization at 90° for 5-7 days with forearm in neutral (Unless otherwise indicated by surgeon)

Phase 1 – Immediate Postoperative Phase

Goals: Protect the anatomic repair
 Prevent negative effects of immobilization
 Gradually increase PROM
 Promote dynamic stability
 Diminish pain and inflammation

Principles: Progress through rehab once specific criteria met
 Follow evaluation based protocol, but adapt to individual
 Remember biologic healing tendon to bone (8-12 weeks or longer)

Postoperative Day 2 visit

- Educate patient in wound care and hygiene
- Educate patient in proper posture
- Educate patient in precautions
 - Abduction sling for 4 weeks during awake hours
 - Sling is worn for 6 weeks while sleeping
 - Pillow from sling removed at 4 weeks, but patient is to wear sling only from 4-6 weeks.
 - No shoulder AROM, lifting of objects, shoulder motion behind back, excessive stretching or sudden movements, supporting of any weight, and lifting of body weight by hands
 - No active or active assistive biceps contraction.
- Codman's exercises with Elbow Bent
- Shoulder shrugs seated with elbows slightly bent with patients arms resting on their lap
- Scapular squeezes with elbows slightly bent with patients arms resting on their lap
- Gripping exercises. Make sure arm is relaxed with arms on laps so there is no biceps contraction.

- Elbow/forearm PROM – **No active elbow flexion for 4 weeks and no resisted elbow flexion for 8 weeks for biceps tenodesis. No active or passive shoulder extension beyond neutral with the elbow extended for 8 weeks.**
- Cervical ROM

Week 1-Week 3

- At 1 week post-op, begin codman's exercise in the elbow straight as long as patient can do these exercises without pulling in the biceps
- Begin gentle PROM of the shoulder (flexion/abduction/ER/IR) to tolerance with elbow slightly bent to take stress off the repaired biceps tendon
- Avoid passive shoulder extension beyond the plane of the body so as to not putting any stress on the biceps tenodesis repair
- Begin scapular PNF

Week 3

- Patient continues to wear the sling
- Continue gentle PROM but NOT stretching: flexion, abduction, scaption, ER/IR to tolerance
- Continue Codman's exercises with elbow straight
- Gentle oscillation – Grade I-II mobilization of glenohumeral and scapulothoracic joint.
- Manual scapular resistive exercises – scapular protraction, retraction, and depression in sidelying with a towel roll or pillow between arm and body. Hand contacts on scapula
- Wand exercises supine on towel roll – ER/IR in scapular plane.
- Table slides in flexion – the body should be the driving force, not the UE.
- Rhythmic stabilization ER/IR with arm supported on a towel roll.
- Submaximal Isometrics for shoulder musculature – shoulder in scapular plane with towel roll between body and arm and elbow flexed to 90° – extension (arm in neutral and elbow even with the plane of the body), internal rotation, external rotation, adduction, and abduction. **No resisted shoulder flexion with Biceps tenodesis)**
- Add resistance to forearm, wrist, and finger.

Week 4

- Progress wand exercises to supine flexion/scaption with elbows extended
- Pulley flexion/scaption
- Continue PROM and mobilizations as needed.
- Begin Rhythmic stabilizations in 90° of flexion and progress ER/IR to unsupported.
- Balance point exercises – passively raise the arm to 90° and have the patient move the arm from 90 to 110° back and forth in a protracted position.
- AAROM – supine flexion, D2 with wand or support of therapist. May start with elbow flexed and progress to elbow straight.
- Wall climb- May use the unaffected side to support and help under the elbow or crawl up the wall with their fingers.
- AROM – sidelying ER with towel roll between arm and body.

- Table top exercises – scapular protraction/retraction, elevation/depression during ball roll or table slide with weight of arm supported by ball or table.
- Active punches - arm raised passively to 90° then punches (protraction & retraction). Then passively lower arm also.
- Prone Row and extension by side (stop at the plane of the body). Begin with no resistance and gradually increase resistance as tolerated.
- Supine active extension (triceps) with shoulder stabilized at 90 degrees of shoulder flexion with the support of the other arm.

Week 5

- Supine active flexion, scaption, and D2 – may start with elbow flexed. Progress to elbow straight and then to dumbbells. Begin from 90-60, progress from 90-45 and then 90-20 degrees as tolerated
- Continue PROM and mobilizations if needed. Goal is near full PROM @ this point.
- UBE for ROM only (slowly, minimal resistance).

Phase 2: Protection and active motion

Goals: Gradually restore full ROM and capsular mobility

Preserve the integrity of the surgical repair

Restore muscular strength and balance

Normalize scapulohumeral rhythm

***Patient must be able to elevate their arm without shoulder or scapular hiking. If the patient is unable to perform this, then continue scapular strengthening and stabilizing exercises.**

Week 6

- Continue PROM. Continue inferior and posterior glides if needed.
- Begin active elbow flexion for biceps
- Wall washes - incorporate squat with scapular retraction to overhead arm with protraction as hips and knees extend.
- Progress resisted sidelying ER
- Standing theraband exercises - ER with towel roll between arm and body, IR with towel roll between arm and body, extension and rows to the plane of the body.

Weeks 7-8

- Continue PROM at all angles to tolerance.
- Add sidelying IR/sleeper stretch.
- Add crossbody stretch.
- Prone scapular exercises – horizontal abduction palm down.
- Progress prone horizontal abduction to thumb up and thumb down as tolerated.
- Un-supported rhythmic stabilization in various degrees of elevation. ER/IR in the scapular plane and at 90-90 with arm in neutral if tolerable.

- Progress active flexion/scaption/abduction/D2 to standing when able to perform without shoulder hiking. Limit flexion/scaption and abduction to 90° only and make sure thumb is up to avoid impingement
- Prone flexion @ 145° (may require assistance to complete full ROM to plane of body).
- Wall push up plus exercises (serratus emphasis with elbows straight).

Week 8:

- Begin resisted biceps exercise. Start with 1 lb. and gradually increase resistance by 1 lb. increments
- Begin slowly adding resistance to shoulder flexion/scaption and abduction as tolerated. Start with 1 lb. and gradually increase resistance by 1 lb. increments. Do not go over 5 lbs.

Weeks 9-10

- Progress push up plus exercise – scapula motion only with elbows kept straight. Progress to quadruped, table top.
- Week 9: Bodyblade ER/IR @ 0°, 90° flexion & scaption
- Week 10: Impulse –ER/IR @ 0°.
- Progress resistance on standing flexion/scaption/abduction/D2 as tolerated without shoulder hiking.

Phase 3: Minimal Protection Phase

Goals: Establish and maintain full functional ROM and capsular mobility

Dynamic shoulder stability

Optimize neuromuscular control

Improve muscular strength, endurance, power and stability

Initiate functional activities and gradually return to full functional activity

Criteria to enter Phase 3:

1. Full non-painful ROM
2. Good Scapulohumeral rhythm
3. Muscular strength graded good(4/5) or better
4. No tenderness

Weeks 11-14

- May initiate light upper extremity weight training on exercise machines and progress as tolerated.
- Non-athletes initiate endurance program that simulates desired work activities/requirements.