MASSACHUSETTS GENERAL HOSPITAL SPORTS MEDICINE

HARVARD MEDICAL SCHOOL

PROCEDURE: ARTHROSCOPIC OR OPEN BICEPS TENODESIS

Please note: *This document is intended to provide guidelines for the postoperative rehabilitation of a patient who had undergone an isolated arthroscopic or open biceps tenodesis. The presence of other repairs (e.g. rotator cuff repair) would require a different rehabilitation protocol. The intent of this protocol is to not to supplant the decision making of the clinician, but to suggest a structure and progression of rehabilitation. When available, please refer to the operative note for further subtleties of the anticipated postoperative rehabilitation.*

If the clinician requires assistance in the progression of a postoperative patient, please contact Dr. O'Donnell's office.

SUMMARY:

- **Remain in shoulder immobilizer for 3 weeks, afterward sling only for comfort**
- **Immediate shoulder pendulums can be performed, shoulder PROM at week 1, AROM at week 3, and shoulder strengthening at week 8**
- **Immediate elbow PROM can be performed, elbow AROM at 4 weeks, and elbow strengthening at 8 weeks**

PHASE I – PASSIVE RANGE OF MOTION INITIATION (Weeks 1-4)

Goals:

- Minimize shoulder pain and inflammatory response
- Achieve gradual restoration of passive range of motion (PROM)
- Enhance/ensure adequate scapular function

Precautions/Patient Education:

- No active range of motion (AROM) of the elbow.
- No excessive external rotation range of motion (ROM) / stretching. Stop when you feel light tension.
- Use of a sling to minimize activity of biceps.
- Ace wrap upper forearm as needed for swelling control.
- No lifting of objects with operative shoulder.
- Keep incisions clean and dry.

- No friction massage or deep tissue massage to the proximal biceps tendon / tenodesis site.
- Patient education regarding limited use of upper extremity despite the potential lack of or minimal pain or other symptoms.

Activity**:**

- Shoulder pendulum hang exercise**.**
- PROM elbow flexion/extension and forearm supination/pronation.
- AROM wrist/hand as tolerated.
- Begin shoulder PROM all planes to tolerance/do not force any painful motion.
- Scapular retraction and clock exercises for scapula mobility progressed to scapular isometric exercises**.**
- Ball squeezes**.**
- Sleep with sling as needed supporting operative shoulder, place a towel under the elbow to prevent shoulder hyperextension**.**
- Frequent cryotherapy for pain and inflammation**.**
- Patient education regarding postural awareness, joint protection, positioning, hygiene, etc.
- May return to computer based work**.**

Milestones to progress to phase II:

- Appropriate healing of the surgical incision
- Full PROM of shoulder and elbow
- Completion of phase I activities without pain or difficulty

PHASE II – ACTIVE RANGE OF MOTION INITIATION (week 4-6)

Goals:

- Minimize shoulder pain and inflammatory response
- Achieve gradual restoration of AROM
- Begin light waist level functional activities
- Wean out of sling by the end of the 2-3 postoperative week
- Return to light computer work

Precautions:

- No lifting with affected upper extremity
- No friction massage to the proximal biceps tendon / tenodesis site

Activity:

- Begin gentle scar massage and use of scar pad for anterior axillary incision
- Progress shoulder PROM to active assisted range of motion (AAROM) and AROM all planes to tolerance
- Lawn chair progression for shoulder
- Active elbow flexion/extension and forearm supination/pronation (No resistance)

- Glenohumeral, scapulothoracic, and trunk joint mobilizations as indicated (Grade I - IV) when ROM is significantly less than expected. Mobilizations should be done in directions of limited motion and only until adequate ROM is gained.
- Begin incorporating posterior capsular stretching as indicated
- Cross body adduction stretch
- Side lying internal rotation stretch (sleeper stretch)
- Continued Cryotherapy for pain and inflammation
- Continued patient education: posture, joint protection, positioning, hygiene, etc.

Milestones to progress to phase III:

- Restore full AROM of shoulder and elbow
- Appropriate scapular posture at rest and dynamic scapular control with ROM and functional activities
- Completion of phase II activities without pain or difficulty

Phase III - Strengthening Phase (starts approximately post op week 6-8)

Goals:

- Normalize strength, endurance, neuromuscular control
- Return to chest level full functional activities

Precautions:

- Do not perform strengthening or functional activities in a given plane until the patient has near full ROM and strength in that plane of movement
- Patient education regarding a gradual increase to shoulder activities

Activity:

- Continue A/PROM of shoulder and elbow as needed/indicated
- Initiate biceps curls with light resistance, progress as tolerated
- Initiate resisted supination/pronation
- Begin rhythmic stabilization drills
- External rotation (ER) / Internal Rotation (IR) in the scapular plane
- Flexion/extension and abduction/adduction at various angles of elevation
- Initiate balanced strengthening program ○ Initially in low dynamic positions
    - Gain muscular endurance with high repetition of 30-50, low resistance 1-3 lbs)
    - Exercises should be progressive in terms of muscle demand / intensity, shoulder elevation, and stress on the anterior joint capsule
    - Nearly full elevation in the scapula plane should be achieved before beginning elevation in other planes
    - All activities should be pain free and without compensatory/substitution patterns
    - Exercises should consist of both open and closed chain activities ○ No heavy lifting should be performed at this time
        - Initiate full can scapular plane raises with good mechanics

        - Initiate ER strengthening using exercise tubing at 30° of abduction (use towel roll)
        - Initiate sidelying ER with towel roll
        - Initiate manual resistance ER supine in scapular plane (light resistance)
        - Initiate prone rowing at 30/45/90 degrees of abduction to neutral arm position
        - Begin subscapularis strengthening to focus on both upper and lower segments
- Push up plus (wall, counter, knees on the floor, floor)
- Cross body diagonals with resistive tubing
- IR resistive band (0, 45, 90 degrees of abduction
- Forward punch
- Continued cryotherapy for pain and inflammation as needed

Milestones to progress to phase IV:

- Appropriate rotator cuff and scapular muscular performance for chest level activities
- Completion of phase III activities without pain or difficulty

Phase IV – Advanced Strengthening Phase (starts approximately post op week 10)

Goals:

- Continue stretching and PROM as needed/indicated
- Maintain full non-painful AROM
- Return to full strenuous work activities
- Return to full recreational activities

Precautions:

- Avoid excessive anterior capsule stress
- With weight lifting, avoid military press and wide grip bench press.

Activity:

- Continue all exercises listed above ○ Progress isotonic strengthening if patient demonstrates no compensatory strategies, is not painful, and has no residual soreness
- Strengthening overhead if ROM and strength below 90 degree elevation is good
- Continue shoulder stretching and strengthening at least four times per week
- Progressive return to upper extremity weight lifting program emphasizing the larger, primary upper extremity muscles (deltoid, latissimus dorsi, pectoralis major) ○ Start with relatively light weight and high repetitions (15-25)
- May initiate pre injury level activities/ vigorous sports if appropriate / cleared by MD

Milestones to return to overhead work and sport activities:

- Clearance from MD

- No complaints of pain
- Adequate ROM, strength and endurance of rotator cuff and scapular musculature for task completion

Compliance with continued home exercise program

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