Blackrock Clinic

Ms. Ruth A. Delaney, MB BCh BAO, MMedSc, MRCS

SSC

Consultant Orthopaedic Surgeon, Shoulder Specialist.
+353 1 5262335 ruthdelaney@sportssurgeryclinic.com

Modified from the protocol developed at Boston Shoulder Institute by the Massachusetts General Hospital and Brigham & Women's Hospital Shoulder Services.

Biceps Tenodesis Protocol:

The intent of this protocol is to provide the physiotherapist with a guideline of the post-operative rehabilitation course of a patient who has undergone a 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 physiotherapist has a query or concern regarding the progression of a post-operative patient, he or she should consult with the referring surgeon.

A patient may undergo a biceps tenodesis in conjunction with another procedure such as rotator cuff repair or shoulder arthroplasty – in that case, the more conservative rehabilitation protocol overrides this isolated biceps tenodesis protocol.

If a subacromial decompression is performed with a biceps tenodesis, again the more conservative rehabilitation protocol is used, which in that case is this biceps tenodesis protocol.

Progression to the next phase based on Clinical Criteria and/or Time Frames as appropriate.

<u>Phase I – Passive Range of Motion Phase</u>
(start at 2 weeks post-operatively)

<u>Goals:</u>

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

Precautions:

• No active range of motion (AROM) of the elbow
• No excessive external rotation range of motion (ROM) / stretching. Stop when you feel the first end feel.
• Use of a sling at all times until 3 weeks post-operatively 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 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
• 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.

Criteria for Progression to Next 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 Phase
(start approximately post op week 4)

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 of 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.

Criteria for Progression to Next 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
(start at approximately post-op week 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 in shoulder activities
• No resisted biceps curls or resisted supination until Phase IV/10 weeks

Activity:

- Continue A/PROM of shoulder and elbow as needed/indicated
- 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

Criteria for Progression to Next 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
(start at 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
• Initiate biceps curls with light resistance, progress as tolerated
• Initiate resisted supination/pronation
• 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 surgeon

Criteria for return to overhead work and sport activities:

• Clearance from surgeon
• No complaints of pain
• Adequate ROM, strength and endurance of rotator cuff and scapular musculature for task completion
• Compliance with continued home exercise program