Dublin Shoulder Institute

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Biceps Tenodesis Protocol:

This protocol is intended as a guideline to the post-operative rehabilitation pathway for a patient who has undergone a biceps tenodesis procedure. It is not intended as a substitute for a Chartered Physiotherapist's clinical decision-making regarding how their patient is progressing. Clinical exam findings, individual progress, and/or the presence of post-operative complications will determine progress through the pathway. If there are any concerns as to how your patient is progressing, please contact Dublin Shoulder Institute.

A patient may undergo a biceps tenodesis in conjunction with another procedure such as rotator cuff repair or shoulder arthroplasty – please follow the more conservative rehabilitation protocol, which overrides this 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 will be the biceps tenodesis protocol.

Patients who have had an isolated biceps tenodesis or a tenodesis with subacromial decompression will be discharged in a simple sling (those who have additionally undergone another reconstructive procedure, such as a rotator cuff repair, will be discharged in a shoulder immobilizer with an abduction pillow, the DonJoy Ultrasling III).

Patients will attend for a 2 week post-op review before attending with their Chartered Physiotherapist.

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

Phase I – Passive Range of Motion Phase (from 2 weeks post-op)

Goals:

- Reduce shoulder pain and enhance healing process
- Achieve gradual restoration of passive range of motion (PROM)
- Enhance/ensure adequate scapular function

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
- Sling to be worn while sleeping - support operative shoulder , and place a towel under the elbow to prevent shoulder hyperextension
- Ice for pain relief
- Patient education regarding postural awareness, joint protection, positioning, hygiene, etc.

Precautions:

- No active range of motion (AROM) of the elbow
- No excessive external rotation range of motion (ROM) or 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 (will be longer if Rotator Cuff procedure was also performed)
- No lifting of objects with operative shoulder
- Keep incisions clean and dry
- **NO** friction massage to the proximal biceps tendon / tenodesis site
- Advise patient to protect operated arm and limit use even though they may have minimal or no pain.

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:

- Reduce pain and enhance healing response
- Achieve gradual restoration of AROM
- Begin waist level functional activities (light load)
- Wean out of sling by the end of the 2-3 postoperative week
- Can return to light daily activities (e.g. computer work)

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 (will be easier for patient in supine)
- Age appropriate Kinetic chain exercises (bridge, 1 leg bridge, Hip hinge etc)
- 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 use of ice for pain relief
- Continued patient education: posture, joint protection, positioning, hygiene, etc.

Precautions:

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

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:

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

Activity:

- Continue A/PROM of shoulder and elbow as needed/indicated
- Nearly full elevation in the scapula plane should be acheived before beginning elevation in the other planes.
- 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:
    - 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
    - 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

- Program must include Kinetic Chain and Thoracic mobility exercises
- Use of ice for pain relief as necessary.

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

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

Activity:

• Continue all exercises listed above (including Kinetic Chain and T spine mobility)
• 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

Precautions:

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

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
- Continued participation in ongoing home exercise program