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BICEPS TENODESIS PROTOCOL

This rehabilitation protocol has been developed for the patient following a tenodesis (reattachment) of the long head of the biceps tendon surgery. This protocol will vary in length and aggressiveness depending on factors such as:

- Quality of the repaired biceps tendon tissue
- Presence of additional procedures such as shoulder arthroscopy
- Degree of shoulder instability or weakness or deconditioning prior to surgery
- Acute versus chronic condition
- Length of time immobilized
- Strength/pain/swelling/range of motion status
- Rehabilitation goals and expectations

Early passive range of motion is highly beneficial to enhance circulation within the joint to promote healing. The protocol is divided into phases. Each phase is adaptable based on the individual and special circumstances. The **overall goals** of the surgical procedure and rehabilitation are to:

- Control pain, inflammation, and swelling
- Regain normal upper extremity strength and endurance
- Regain normal shoulder range of motion
- Achieve the level of function based on the orthopedic and patient goals

Physical therapy should be initiated after the first week post-op. The supervised rehabilitation program is to be supplemented by a home fitness program where the patient performs the given exercises at home or at a gym facility. **Important post-op signs** to monitor:

- Swelling of the arm or shoulder and surrounding soft tissue
- Abnormal pain response, hypersensitivity, increasing night pain
- Severe range of motion limitations
- Weakness in the upper extremity musculature
- Improper mechanics or scapular dyskinesia
- Core and peri-scapular strength deficits

Return to activity requires both time and clinical evaluation. To safely and most efficiently return to normal or high level functional activity, the patient requires adequate strength, flexibility, and endurance. Functional evaluation including strength and range of motion testing is one method of evaluating a patient's readiness

return to activity. Return to intense activities following a biceps tenodesis requires both a period of time to allow for tissue healing along with a graduated strengthening and range of motion program. Symptoms such as pain or swelling should be closely monitored by the patient and therapist. Specific exercises may be added, substituted, or modified where clinically appropriate by experienced sports/shoulder therapists or trainers who have expertise in the care of post-operative tendon repair procedures. While patients may be "cleared" to resume full activities at 6+ months following surgery, additional time spent in full activity or sport participation is often necessary to achieve maximal recovery.

Following biceps tenodesis, no resistive biceps work should be performed for 6 weeks.

BICEPS TENODESIS
PHASE 1: WEEK 1-2
Focus of this phase is symptom reduction, PROM, and protection of the repair
ROM

- Gradual ↑ Passive ROM of shoulder in all planes
- Pendulum exercises – keep circles small
- Elbow: Passive flexion and gentle passive extension
- Forearm: passive pronation and supination
- Wrist/hand/finger full AROM

STRENGTH

- Sub-maximal shoulder isometrics in all planes
- Scapular retractions
- Shoulder shrugs
- Supine rhythmic stabilizations
- Wrist/hand: grip strengthening

BRACE/SLING

- Brace for 4 weeks or as noted by Dr. Shybut
- Brace removed to perform exercises above

MODALITIES

- Hot pack before treatment
- E-stim, TENS as needed
- Ice 10-15 minutes after treatment

GOALS OF PHASE 1

- Promote healing of repaired tendon
- Control pain and inflammation
- Gradual increase of ROM
- Independent in HEP
- Delay muscle atrophy

PHASE 2: WEEK 2-6
Focus of this phase is protection of repair, gradual increase in ROM and strength
ROM

- Continue PROM and pendulums
- Initiate AAROM shoulder
    - Rope/Pulley into flexion and scaption
    - Supine cane/wand into flexion and ER
- Initiate gentle posterior and inferior shoulder mobilizations
- Elbow: Initiate AAROM flexion and extension, progress to active flexion and extension (week 4)
- Forearm: Initiate AAROM pronation and supination, progress to active pronation and supination (wk 4)

STRENGTH

- Continue scapular stabilizer strengthening: shrugs, shoulder retraction
- Continue grip strengthening as needed
- Initiate UBE with no resistance, forward only (week3)
- Prone rows—do not load biceps
- Resisted scapular retractions with bands
- Standing flexion and scaption
- Prone extension
- Side-lying ER
- ER with band
- Side-lying flexion
- Supine serratus punches
- Triceps
- Initiate IR walkouts with thera-band (week 5+)

BRACE

- D/C wk 4 per Dr. Shybut

MODALITIES

- Heat/hot pack before therapy
- E-stim as needed
- Ice 10-15 minutes

GOALS OF PHASE 2

- Control pain and inflammation
- Initiate light controlled loads on repaired tissue
- Gradual increase in ROM
- Increase activity tolerance and muscular endurance

PHASE 3: WEEK 6-12

Focus of this phase initiate biceps strengthening and progress RC and scapular strengthening

ROM

- Goal is to be near full AROM wk 8
- Continue/progress all ROM work from previous phases
- Initiate Grade II-IV joint mobs as needed

STRENGTH

- UBE forward and backward
- May begin biceps curls at week 6-8 per Dr. Shybut
- Initiate resisted forearm supination and pronation at week 8+
- Continue previous shoulder strengthening:
    - Shoulder retraction with resistance
    - Supine punches with resistance
- Prone shoulder extension

- Prone rowing
- May gradually progress rotator cuff and detoid strengthening, advance bands as tolerated after week 8
- Rhythmic stabilizations
- Initiate 2-handed plyotoss at chest week 12

MODALITIES
- Ice 10-15 minutes

GOALS OF PHASE 3
- Minimize pain and swelling
- Reach full ROM
- Improve upper extremity strength and endurance
- Enhance neuromuscular control
- Normalize kinematics

PHASE 4: WEEK 12+
Focus of this phase is functional activity/sports specific strengthening
STRENGTH:
- Progress strengthening program with increase in resistance and high speed repetition
- Initiate IR/ER exercises at 90° abduction
- Progress rhythmic stabilization activities to include standing PNF patterns with tubing
- Initiate single arm plyotoss
- Initiate military press, bench press, flys, lat pulldowns week 16+
- UBE for strength and endurance
- Initiate sport specific drills and functional activities
- Initiate interval throwing program week 16-20
- Initiate light upper body plyometric program week 16-20
- Progress isokinetics to 90° abduction at high speeds

MODALITIES
- Ice 15-20 minutes

GOALS OF PHASE 4
- Full painless ROM
- Maximize upper extremity strength and endurance
- Maximize neuromuscular control
- Optimize shoulder mechanics/kinematics
- Optimize core stability
- Initiate sports specific training/functional training