Biceps Tenodesis Clinical Practice Guideline

Background

Biceps tenodesis is a surgical treatment recommended for various conditions involving the biceps tendon.

- Progression is time and criterion-based, depending on soft tissue healing, patient demographics, and clinician evaluation.
- For questions, contact Dr. Sujan Gogu's clinic.

Indications

- Partial tears greater than 25%
- Tendon subluxation
- Persistent tendinopathy
- Chronic tendon atrophy
- Impingement
- SLAP (Superior Labrum Anterior and Posterior) lesions
- Rotator cuff treatment

Procedure

- Surgically detaching the normal attatchment of long head of the biceps
- Reattaching to the humerous using either:
    - Soft tissue fixation
    - Hardware fixation techniques

Recommendations

Potential Risk Factor

- Avoid extension or horizontal extension for a period of 4 to 6 weeks.
- Additional surgeries: Concomitant surgeries.

Precautionary Measures

- Use sling for 2-4 weeks as recommended by the surgeon
- Avoid excessive biceps loading (8 weeks)
- Start soft tissue mobilization (2 weeks)

- Avoid cross friction massage (6 weeks)
- Refrain from isolated biceps activation with elbow flexion or straight arm resisted flexion/supination (6 weeks)

Rehabilitation Techniques

- PROM exercises , GH joint Mobilization (Phase I and II)
- Scar massage in Phase II

Pain Management and Support

- Using sling for comfort as per surgeon's recommendations
- Cryotherapy for pain and inflammation
- Manual therapy

Evaluation Tools (Questionnaires)

- DASH (Disability of Arm Shoulder and Hand)
- KJOC (Kerlan-Jobe Orthopaedic Clinic)

Discharge Criterion

- >90% in Patient-reported outcomes
- Attain full AROM
- Strength to perform pain-free, sports-specific movements without compensatory movements

Post-Operative considerations

- Rehabilitation should progress slowly during the first 2-4 weeks to protect the healing biceps tendon. It is time-based and criterion-based.
- Factors to consider for rehabilitation includes soft tissue healing, demographics and clinical assessment of patient.
- Prior to beginning rehabilitation, ensure:
    - Consultation with the surgeon
    - Review of the operative report
- In cases involving additional surgeries, discuss with the surgical team to determine the most restrictive protocol to follow.

Clinical course		
Phase	**Duration**	**Stage Details**
I **(Protection to**	0-2 weeks	**Pain and Inflammation Management:** • **Patient Education:** No extremity AROM, keeping

PROM)		incisions clean and dry, ace wrap and lymphatic drainage for upper extremity swelling control ● **Warm-up:** Passive Pendulums ● **Modalities:** Vasopneumatic devices, Electrical Stimulation machine (E-stim) ● **Restrictions:** no friction massage, sleep with sling, adjust a towel under elbow to avoid extension **Restoring Passive Shouder ROM:** ● For first 4 weeks: ✓ Limit shoulder external rotation to 40° ✓ Avoid extension and horizontal extension **Home Exercise Program (HEP) Initiatives:** ● **Posture Training** ● **Exercises**: ✓ Perform scapular retractions while keeping the arm immobilized ✓ Progress from scapular clocks to scapular isometric exercies ✓ Practice PROM and forearm pronation ✓ Engage in AROM for wrist and hand ✓ Perform ball squeezes ✓ Refrain from comupter use for 4 weeks **Criteria for Progression to Phase II:** ● Full passive ROM in shoulder ● Full passive elbw flexion and extension ● Full passive forearm pronation
II **(PROM to AROM)**	2-4 weeks	**Pain and Inflammation Control:** Avoid bicepts for 6 weeks **Weeks 2-4 Post-operation:** ● ROM ✓ Avoid shoulder ER beyond 40° ✓ Limit shoulder extension in the frontal and sagittal planes for 4 weeks

		✓ Progress from PROM to AROM for shoulder, wrist, and elbow within speified limits ✓ Apply scar massage but No cross friction ● Strengtening Exercises ✓ Submaximal isometric exercise for shoulder, IR, ER, ABD, ADD ✓ Increase muscle endurance from AAROM to AROM ✓ Progression from supine to standing for waist-evel activities ✓ Proper scapular kinematics (lawn chair progression) ✓ Adhust ROM progression based on pain levels **Criteria to Progress to Phase III:** ● Pain- free full passive ROM in shoulder ● Pain- free full passive elbw flexion and extension ● Pain- free full passive forearm pronation ● Maintain proper static posture with scapular control during AROM
III **(Strength Phase)**	4-12 weeks	**Pain Free Progressive Restoration of AROM and Strength:** ● No pain or inflammation before starting exercises ● Avoid long lever arm resistance for elbow flexion ● Aim to normalize strength, endurance and neuromuscular control ● Start with exercises below chest level and gradually advance towards overhead activities **Week 4-6 Post Surgery:** ● Continued Transition from PROM to AROM for shoulder and elbow ● High repetition and low-resistant exercises and Supine ABCs, Serratus Anterior punches for muscle endurance

		• Light resistance exercise for IR and ER • Start prone scapular stability program at week 6 **Week 7-12 Post Surgery** • Transition from Scap 6 to Supine 5 • Resisted IR and ER at 30° abduction, increasing to 90° • Start doing low rows from 30° and progressing to standing straight • Begin closed-chain stabilization and push-up plus exercises **Return to Activity after week 8:** • Cardiovascular activitie including runnig, biking, stairmaster , playing golf with proper mechanics **Criteria to progress to Phase IV:** • Pain free, full AROM in shoulder and elbow with normal scapulohumeral rhythm • Obtain 5/5 Manual Muscle Testing (MMT) for rotator cuff at 90° abudction and for scapulothoracic muscles
IV **(Return to Sports)**	12+ weeks	**Target:** • Aim to return to aport at 4 month at the earliest **Goals:** • Maintain full pain free AROM • Increase strength and power without compensatory movements • Avoid excessive stress on the anterior capsule • Analyze and improve sports-specific movements **Exercise (week 12+)** • Polymetrics: train from below shoulder level to overhead, beginning with both arms and progressing to single-arm exercises • Strength and plyometric: Perform low to high velocity strengthening and polymetric activities such as ball drops in prone position progressing to D2 rreverse throws

		Crtieria to return to sports (week 12+) ● Able to perform pain free, stable and controlled high-velocity movements related to sports and change of direction ● Demonstrate proper kinematics control, transferring motion from the hip and core to shoulder during dynamic activities