LARGE-MASSIVE ROTATOR CUFF REPAIR GUIDELINE

Background

The rotator cuff is responsible for stabilization and active movement of the glenohumeral joint. An acute or overuse injury may cause the rotator cuff to be injured and varying widths of tears may cause increased pain and dysfunction of the shoulder joint. A large size rotator cuff tear is defined as a tear 3-5cm, massive >5cm. Rotator cuff repair is performed, either arthroscopically or via mini-open procedure, by suturing the torn tendon to the humerus.

Disclaimer

Progression is time and criterion-based, dependent on soft tissue healing, patient demographics and clinician evaluation. Contact Ohio State Sports Medicine at 614-293-2385 if questions arise.

Superior Capsule Reconstruction Considerations

- Follow protocol timeframes
- Limit lifting to 5 lbs for 6 months

Summary of Recommendations

Risk Factors	• Low preoperative functional level • Poorer preoperative active ER • Younger age • Lower education level • Workman's comp claims • Smoking / Hypercholesterolemia / DM
Precautions	• Sling use for 6 weeks • **No PROM into pain** • Start physical therapy at 4-6 weeks • Emphasis on short-term activity modifications at 0-12 weeks ***Subscapularis Repair (12 weeks)*** • No ER past 30 degrees • No cross body adduction • No active IR or IR behind back • No supporting of body weight on affected side (i.e. pushing up from chair) ***Biceps Tenodesis*** • No extension or horizontal abduction for **4-6 weeks** • No resisted elbow flexion, shoulder flexion, or supination for **6 weeks**
Manual Therapy	• **Week 0-4**: continue post-operative home exercises (wrist and hand, pendulums, scap squeeze) • **Week 4-6**: posterior and caudal GH mobilizations, soft tissue mobilization as appropriate • **Week >6**: PROM, soft tissue and joint mobilization as appropriate
Corrective Interventions	• Pain and edema control modalities • Manual for glenohumeral and scapular mobility and shoulder ROM • Therapeutic exercise and neuromuscular re-education for UE strength, control and postural stability • Therapeutic activity for return to work simulations to increase strength and endurance • Sport-specific activity training
Outcome Testing	• Disability of Arm, Shoulder, Hand (DASH) • Quick DASH
Criteria for Discharge	• Full AROM with no scapular substitution • 5/5 MMT RTC strength • 65-70% IR/ER isokinetic testing

Phase 1: Protection (4-6 weeks)

ROM	• Sling or abduction brace (physician's decision)
	• Continue Protected PROM
	  ▪ Be sensitive to end feel and muscular guarding
	  ▪ Begin PROM in flexion and external rotation only
	  ▪ ER in scapular plane 0-45 (limit extension with towel roll in supine)
	  ▪ Do NOT push into pain
	• Shoulder joint mobilizations (grade II-III) – posterior and caudal
	• Scapular mobilization
	• Pectoralis minor flexibility
	  ▪ Supine postural stretch
	  ▪ Passive therapist overpressure
	• Table slides
	  ▪ Passive flexion and scaption produced with trunk flexion
	• Begin wand exercises in a supine and/or seated position
	  ▪ Shoulder external rotation
	  ▪ Shoulder flexion with physician's authorization
	• ***with Biceps Tenodesis***
	  ▪ No ER >40 deg, Limit shoulder extension in frontal and sagittal planes for **4 weeks**

Strengthening	• Begin isotonic scapular retraction/protraction
	  ▪ Serratus punches
	  ▪ PNF patterns in sidelying (scapular clock)
	  ▪ Sitting retraction
	• Begin manual resistance scapular stabilization (sitting, side lying)
	  ▪ Rows, pulldowns – light resistance

Modalities	• Ice and pain modalities as indicated
Goals for Progression to Next Phase	• Decrease pain • PROM Per Tolerance 0-130 • Sleeping through the night • Normal posture

Phase 2 (6-12 weeks)

Week 6-8	**Sling**	• D/C sling per physician
	ROM	• AAROM per patient tolerance - adding abduction, horizontal abduction (maintain subscapularis precautions) • UE swiss ball mobility – flexion/ER rollouts • Towel wipes on table – any direction

	Strengthening	• Closed-chain stability – elbow extension with hand on ball performing oscillations
		  • Progress scapular neuromuscular strengthening
		• Initiate **SUB-MAX/50% effort** strengthening
		  • Isometric flexion, extension, abduction, ER, IR
		  • Isometric lower trap

Week 8-10	**ROM**	▪ Progress PROM ER at 90/90 ▪ AROM per patient tolerance; avoid scapular substitution ▪ Pulleys

	Strengthening	• UBE light resistance
		• Begin prone exercise program <u>no weight, below shoulder level</u>
		  • Row
		  • Shoulder extension
		• Continue scapular strengthening progression – light band resistance
		• Begin closed chain UE activities
		  ▪ Towel wipes on wall – horizontal, diagonal and vertical
		  ▪ Quadruped weight-shifts

Week 10-12	**ROM**	▪ Continue AROM per patient tolerance ▪ Add gentle IR stretching

	Strengthening	• UBE moderate resistance
		• Continue isometric strengthening
		• Dynamic isometric walk-outs
		• Progress prone exercise program <u>no weight</u>
		  • Row
		  • Shoulder extension
		• Progress closed chain UE activities
		• Seated press-up
		• Serratus punches
		• Proprioceptive exercises
		  • Ball on wall
		  • Supine ABC's

	Goals for Progression to Next Phase	1. Full PROM 2. Full Functional AROM with no scapular substitution 3. No reactive inflammation with strengthening 4. Return to full ADLs pain free

Phase 3 (12-16 weeks)

Week 12-16	**Strengthening**	• T-band exercises
		  • Shoulder IR/ER
		  • Horizontal abduction/adduction
		  • Diagonal patterns
		• Begin Prone exercise program <u>with weight</u>
		  • Row
		  • Shoulder extension
		  • Horizontal abduction – T exercise position
		  • Lower trapezius – Y exercise position
		• Begin rhythmic stabilization exercises supine, starting at balance point position (90-100 degrees of elevation); progress to side lying, prone, standing
		• Functional eccentric strengthening
		  • Decelerations
		• Progress closed chain UE strengthening
		  • Push up with a plus
		  • Swiss ball activities
		  • Plank BOSU weight shifts
		• Trunk and lower extremity strengthening

	Goals for Progession to Next Phase	1. Full AROM with no scapular substitution between weeks 12-16 2. 5/5 rotator cuff strength 3. 65-70% IR/ER isokinetic testing 4. Return to work and functional goals are met

Phase 4 – Return to Sport / Activity (4-6 months)

Goal is to return to sport at 6 months

ROM	• Emphasis on posterior capsule stretching • General stretching/flexibility program

Strengthening	• Progress T-band exercises
	• Progress Dumbbell Program with weight
	  • Scaption
	  • Diagonal patterns
	  • Bent row
	  • Prone Retraction with ER
	• Incorporate work or sport simulated drills into program
	  • Material handling tasks
	  • Overhead work tasks
	  • Pushing/pulling tasks
	• Progress closed chain UE strengthening
	  • Push up with a plus
	  • Swiss ball activities
	• Continuation of trunk and lower-extremity strengthening
	• Initiation of throwing progression (See OSU Sports Med Throwing Program)
	• Begin short toss and overhead endurance activities per physician release
	• Continuation of functional UE/LE strengthening and endurance activity

Goals to Return to Sport	• Completion of throwing progression • No reactive effusion, pain and/or instability • 65-70% IR/ER isokinetic testing • Full functional mobility and strength

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