Arthroscopic Rotator Cuff Repair

This protocol is intended to provide Physiotherapists with guidelines for the post-operative management of a patient who has undergone an arthroscopic rotator cuff repair. This protocol is not a substitute for a Physiotherapist's clinical reasoning during a patient's post-operative healing/progress. Clinical reasoning should be based on individual symptoms, physical signs, progress, and/or the presence of operative complications. If a Physiotherapist requires assistance or guidance at any stage of recovery they should consult with Dr. Rajaratnam's office.

Postoperative Guidelines:

- Physiotherapy commencing before 2 weeks post-op

- Protect surgical repair
    - 12 weeks is required for sufficient tendon-to-bone healing post-operatively

- Prevent post-op rehabilitation complications:
    - Failed tissue repair due to insufficient tendon-to-bone healing from overstretching

- [Protected] Mobility before strengthening
    - Gaining ROM too slowly may result in residual stiffness and delayed recovery
    - Early emphasis on rotational mobility should be performed in resting position of the glenohumeral joint (scapular plane)
    - Strengthening when range is not available can lead to compensatory movement strategies and poor muscle activation patterns.
    - N.B. Exercises must not reproduce pain

- Return to Work
    - Determined by Dr. Rajaratnam – generally occurs between 3-6 months post-op
    - Often associated with graduated hours and modified duties

- Return to Sport
    - Determined by Dr. Rajaratnam – generally occurs between 6 & 12 months post-op
        - Dependent on contact vs. non-contact, as well as level of play

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Phase I (Protection): *0-2 weeks*

Patient Name: Date:

D.O.B.:

Short Term Goals of Phase I:

1. Education: posture, joint protection, positioning, hygiene, restrictions
2. Immobilization with sling (abduction pillow/wedge) to protect surgical procedure
3. Minimize pain and inflammatory response
4. Maintain/restore ROM of uninvolved joints (neck, thorax, elbow, wrist/hand)

Restrictions/Precautions for Phase I:

1. Remain in sling at all times; remove only for showering and ROM exercises
    a. *when sleeping with the sling a reclining chair is often most comfortable*
2. Avoid getting incisions wet
3. No driving
4. No active motion (AROM) of shoulder
5. No mobilizations/manipulations/traction to GHJ
6. No lifting/pushing/pulling objects with operative shoulder
7. No arm use beyond ROM guidelines/restrictions

Management Recommendations for Phase I:

1. **Mobility**
    - Pendulums (*for passive pendulums arm should dangle and muscles be completely relaxed. Move the arm by swaying your body forward/back and side-to-side **NOT** by moving your arm)*
    - Neck, thorax, elbow, wrist/hand*:* general ROM (as needed)

2. **Muscle Activation / Awareness**
    - Posture awareness/correction (prevent depression/dumping of shoulder blade)
    - Ball squeezes

3. **Scar Management -** keep incisions clean and dry

4. **Modalities -** home cryotherapy for ~ 20 min every few hours for pain and inflammatory control

Comments:

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Phase II (Mobility): *2-8 weeks*

Patient Name: Date:

D.O.B.:

Requirements to progress to Phase II:

1. Follow-up with Dr. Rajaratnam
2. Appropriate healing from surgery by following precautions & immobilization guidelines
3. ROM guidelines met but not exceeded
4. Pain control within allowed ROM

Short Term Goals of Phase II:

1. Education: posture, joint protection, positioning, hygiene, restrictions
2. Immobilization with sling (abduction pillow/wedge) to protect surgical procedure
3. Minimize pain and inflammatory response
4. Maintain/restore ROM of uninvolved joints (neck, thorax, elbow, wrist/hand)
5. Achieve recommended ROM through gentle and painfree ROM activities
6. Prevent post-operative stiffness
5. Normalize scapular position and mobility (dissociation from GHJ)
6. Improve stability and neuromuscular control of cervical spine (if necessary)

Restrictions/Precautions for Phase II:

1. Remain in sling (include sleeping); remove only for showering and ROM exercises
2. No driving
3. Weeks 2-4 = PROM; 4-8 = AAROM; No active motion (AROM) of shoulder
4. Limit passive shoulder abduction to 120^{o} (2-4 weeks); slowly progress to full abduction by 8 weeks
5. Do not over-stress rotator cuff with terminal stretching (beyond R2) within first 8 weeks
6. Avoid Active Release Techniques
7. No mobilizations (arthrokinematics)/manipulations/traction to GHJ
8. No lifting/pushing/pulling objects with operative shoulder
9. No arm use beyond ROM guidelines/restrictions

Special considerations:

Management Recommendations for Phase II:

1. **Manual Therapy**
    - Passive ROM (passive physiological ROM) within R2
        - isolate GHJ (ensure full ROM) before progressing to full elevation
        - begin in scapular plane to reduce stress on healing tissue and maximize humeral head/glenoid congruency
    - Soft tissue massage to shoulder complex (as needed)

2. **Mobility - PROM** *(2-4 weeks)* and **AAROM** *(5-8 weeks)*
    - Pendulums (*for passive pendulums arm should dangle and muscles be completely relaxed. Move the arm by swaying your body forward/back and side-to-side **NOT** by moving your arm)*
    - Shoulder*:* use opposite arm for self PROM (follow ROM guidelines; respect R2)
        - can progress to wall walking or a stick/cane for AAROM if appropriate timeline and follow ROM restrictions and ensure patient does not push beyond R2
        - perform ROM in scapular plane to maximize humeral head/glenoid congruency
    - Neck, thorax, elbow, wrist/hand*:* general ROM (as needed)

3. **Muscle Activation/Awareness**
    - Posture awareness/correction
    - Ball squeezes (gentle grip strengthening)
    - *Scapular awareness / stabilization*
        - Scapular set to restore optimal position (counteract anterior tilt, depression and downward rotation)
        - Unilateral elevation/depression/protraction/retraction (commence in sling); progress to scapular clock exercises (as able)
    - *Rotator Cuff:*
        - None (see precautions)

4. **Scar management** (once incisions have closed)

5. **Proprioceptive Awareness**
    - *Must fit within ROM guidelines/restrictions; utilize non-operative arm*

6. **Modalities** *(if no contraindications present)*
    - Pain management (e.g., Ice 10-15 minutes every few hours; TENS / IFC)
    - Cryotherapy ↔ Heat

7. **Recommended Concomitant Service(s):** Massage Therapy *(ensure complimentary to PT Rx)*

Comments:

Arthroscopic Rotator Cuff Repair

Phase III (Neuromuscular Retraining): *8-12 weeks*

Patient Name: Date:

D.O.B.:

Requirements to progress to Phase III:

1. Follow-up with Dr. Rajaratnam
2. Compliant with recommendations/restrictions to ensure appropriate healing from surgery
3. ROM improving and guidelines not exceeded
4. Pain control within allowed ROM

Short Term Goals of Phase III:

1. Education: restrictions
2. Prevent/eliminate pain and inflammatory responses
3. Restore full active shoulder mobility within correct movement patterns
4. Maintain/restore appropriate capsular extensibility
5. Improve scapular awareness and stability
6. Improve neuromuscular control and endurance of rotator cuff musculature
7. Increase endurance of cervical spine stabilizing musculature (if applicable)

Restrictions/Precautions for Phase III:

1. Continue to avoid any pain with stretching; do not stretch beyond R2
2. Slowly increase active motion (AROM) of shoulder
3. Avoid terminal stretching
4. No mobilizations (arthrokinematics)/manipulations/traction to GHJ
5. No lifting/pushing/pulling objects with operative shoulder

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Special considerations:

Management Recommendations for Phase III:

1. **Manual Therapy**
    - Restore full mobility (*avoid aggressive terminal stretching*)
        - i.e., Passive Physiological ROM, METs
        - i.e., Soft tissue release to antagonistic muscle(s)

2. **Mobility - AROM**
    - Perform AROM in all movement planes of the shoulder with good scapular control and avoidance of compensatory movements
        - Begin in scapular plane to maximize humeral head/glenoid congruency

3. **Muscle Activation/Endurance**
    - *Scapular stabilization*
        - Restore and challenge optimal mechanics & positioning (facilitate upward rotation)
        - include OKC & CKC exs; consider requirements for ADLs, sport, work

    - *Rotator Cuff* - improve neuromuscular control (recruitment) then endurance
        - As enhance muscular recruitment, begin to address low intensity endurance retraining (using active ROM; no resistance)
            - Prescribe <u>appropriate</u> parameters; gradually address muscle demand/intensity
            - Neuromuscular Electrical Stimulation (if no contraindications present) can help facilitate muscle activation/awareness
            - Start neutral & progress t/o range at limits of good scapular positioning and control
            - Start in scapular plane; progress to all motion planes (coronal & sagittal)
            - Begin strength/hypertrophy after 12 weeks post-op
            - **** Exercises must be performed within available active ROM***

4. **Proprioceptive Awareness** – OKC and CKC beginner exercises

5. **Modalities** *(if no contraindications present)*
    - Neuromuscular Electrical Stimulation

6. **Recommended Concomitant Service(s):** Massage Therapy *(ensure complimentary to PT Rx)*

Comments:

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Phase IV (Strength and Function): *12^{+} weeks*

Patient Name: Date:

D.O.B.:

Requirements to progress to Phase IV:

1. Follow-up with Dr. Rajaratnam
2. Compliant with recommendations/restrictions to ensure appropriate healing from surgery
3. Full active shoulder mobility within correct movement patterns
4. Improved neuromuscular control and stabilization of scapula
5. Improved neuromuscular control and recruitment of rotator cuff musculature

Short Term Goals of Phase IV:

1. Increase strength and endurance of rotator cuff musculature
    a. Progress t/o range at limits of good scapular positioning and control
        i. ***exercises must be performed within available active ROM***
    b. Include all planes of motion (scapular, coronal and sagittal)
    c. Introduce parameters to address endurance and strength/endurance
    d. Introduce parameters to address both concentric and eccentric loads
    e. Integrate CKC exercises (not only OKC)
2. Improve functional strength of shoulder girdle
3. Improve Proprioceptive awareness of shoulder girdle – both OKC and CKC exercise
4. Introduce return to work retraining
5. Introduce sport-specific retraining (approx. 16^{+} weeks post-op)

6. *Improve functional stability and neuromuscular control of cervical spine (if necessary)*

Precautions for Phase IV:

1. Avoid aggressive terminal stretching
2. No manipulations to GHJ
3. Light- lifting/pushing/pulling objects with operative shoulder
4. Plyometric retraining must be cleared by Dr. Rajaratnam

Special considerations:

Glossary of Terms:

CKC	= Closed Kinetic Chain
GHJ	= Glenohumeral joint
HOH	= Head of humerus
OKC	= Open Kinetic Chain
R2 (end of range)	= end of a joint's available ROM; not necessarily the end of normal physiological limits