ValleyOrtho Rehabilitation Playbook Series

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Surgical Procedure: Large-Massive Rotator Cuff Repair (without Regeneten Graft) Red Playbook

The intent of this information is to inform the treating clinician on the evidence based considerations to be used as a guideline regarding the surgery noted above. This is not a substitute for appropriate clinical decision making but a supplement to that effect. If at any time a clinician feels uncertain about a given phase discrepancy or patient presentation they are strongly encouraged to discuss this with the referring physician and his/her team. If specific comorbidities create unattainable goals for phase progression, discuss this with the treating physician group before progressing to the next phase. Always check the prescription for potential patient specific ROM variations.

****It is the responsibility of the therapist to read the operative report before providing care to the patient to improve treatment communication as variations to treatment plan may occur because of surgical details and patient response to treatment****

Therapeutic Activity Progression Disclaimer: Progression to the next phase should be strongly based on meeting clinical criteria (not solely based on the post-operative timeframes) and in collaboration with the referring surgeon. Exercise prescription should be clinically directed by pain and performance absent of detrimental compensation with respect to proper arthrokinematics of the glenohumeral joint (GHJ).

Communication Recommendations from Therapist to Surgical Team: When a treating therapist feels the need to reach out to the physician, and his/her team, at any point for any reason they are strongly encouraged to do so. All concerns are not explicitly written and clinical judgement is paramount. Below is a handful of reasons and suggested methods of contact to promote communication:

Urgent Red Flag Communication: the patient is in clinic and an action is required as directed by referring staff office

- Uncontrollable and unremitting pain
- Signs of infection at incision or treated limb
- Severe palpation tenderness, swelling, tachycardia (UE or LE DVT)
- Labored breathing (PE)
- Drastic improvement or decline in ROM (failed repair)
- Excessive muscle guarding or motion phobia evident after the first 1-2 outpatient visits
- After a fall/trauma, or near fall/trauma, resulting in a clinical change

Preferred Contact Method: Immediate phone call to speak with MA or ATC until answer.

Administrative Needs

- Rehabilitation Prescription needed or prescription change requests
- Appointment needed with the physician office, or medication refill

Preferred Contact Method: Phone call to MA/ATC

Other Patient Concerns During Clinic Hours M-TH 9-5pm F 9-3pm

- Abnormal pain, comorbidities or complications that may prevent attainment of established discharge criteria
- Patient is noncompliant with rehabilitation process
- Adverse work or home practices negatively impacting recovery
- Patient expresses discontent or concerns with the current POC established by PT/OT and/or by MD/PA

Preferred Contact Method: Phone call to MD &/or PA

Preferred Updates before checkup visits with MD

During Clinic Hours M-TH 9-5pm F 9-3pm

- Information regarding adherence/participation in rehabilitation process
- Comments on progress and trending nature of the patient's rehab course

Preferred Contact Method: Phone call to MD &/or PA. **Or** Fax update

Phase 1: Healing & PROM Recovery (*weeks 0 to 6*)

Goals:

- Protect repair & optimize healing environment via postural control
- Pain, swelling and sling/cryotherapy management
- Intense emphasis on PROM via Manual therapy in this phase
- Improve passive scapula-humeral disassociation
- Establish appropriate cardiovascular exercise program

Precautions:

- Sling use 100% of the time for 6-8 weeks except during periods of bathing, dressing or prescribed therapy activities (sling D/C by MD)
- Postural EXT limited to neutral in all positions until week 7
- Therapist provided PROM only (caution repair's antagonistic rotation)
- No lifting, pushing, pulling, GHJ isometrics, or RROM of involved UE

Phase 1 Therapeutic Activities:

- PROM to restrictions in prescription, do not work through a guarded reaction. Avoid EXT and caution into repair's antagonistic rotation
- GHJ protected PROM/mobs without deformation of surgically involved tissue and without pain increase (verbal/non-verbal) from patient
- Cervical, thoracic and scapular manual treatment and postural exercises to improve healing environment and decrease effects from interscalene block
- Clavicle posterior rotation and elevation mobilizations at AC/SC joints
- AROM at elbow, wrist, hand, scapula, cervical and thoracic
- Tubigrip and/or glove compression to manage distal swelling as needed
- Scar management on healed incisions (≈ 2 weeks)

Criteria for Progression to Phase 2:

- Tolerates therapeutic progressions without undue discomfort, compensation or guarding
- Achieves without exceeding rotational and elevation restrictions in prescription

Progression Note:

- If the patient has not reached ROM restrictions, forceful stretching and mobilization without respect for soft tissue restraints is not indicated in this phase. Continue current phase approach unless cleared with the physician

Phase 2: ROM & Early strengthening (weeks 6 to *8*)

Goals:

- Continue strong emphasis of PROM and Manual therapy in this phase: Restore ≈ 50% full PROM (caution into antagonistic rotation until 8 wks)
- Gently restore RTC function for proper GHJ arthrokinematics (AAROM)
- Minimal to no pain at rest
- Consistent and independent with HEP and cardiovascular program

Precautions:

- No RROM or uncontrolled active movements, CKC <10% BW
- Begin AAROM elevation to 90^0 and agonistic rotation in sitting/standing
- Begin PROM into EXT at 7 weeks and PROM IR in 90/90 at 7 weeks
- Do not over stress surgically involved healing tissue (Therapist's target activity goal is for mild tissue deformation)

Phase 2 Therapeutic Activities:

- GHJ and scapular mobs emphasizing posterior capsule mobility
- P/AAROM scapula-humeral disassociation as appropriate
- AAROM in sitting or standing without excessive compensations
- Clavicle posterior rotation and elevation mobilizations at AC/SC joints
- Cervical, thoracic and scapular manual work and postural exercises

Criteria for Progression to Phase 3:

- Tolerates therapeutic progressions without undue discomfort, compensation or guarding
- **PROM to Achieve without exceeding:** (**Flexion** = 130^0) (**ABD** = 90^0) (**ER in RP** = 60^0) (**ER @ 60^0 ABD** = 50^0) (**ER @ 90^0 ABD** = 40^0) (**IR in RP**= 40^0) (**IR @ 90^0 ABD** = 20^0) (**EXT** = 20^0)

Progression Note:

- If the patient has not reached the above PROM, forceful stretching and mobilization without respect for soft tissue restraints is not indicated in this phase. Continue current phase approach unless cleared with the physician

Phase 3: AROM & Intermediate strengthening (*weeks 8 to 12*)

Goals:

- Gradual restoration of near full GHJ PROM with arthrokinematic focus
- Increased emphasis on gradual restoration of shoulder AROM endurance and postural endurance
- Improve neuromuscular coordination of T-spine, scapula, and GHJ
- Return to light ADL's below shoulder level without discomfort

Precautions:

- No heavy lifting, aggressive strengthening, or sudden lifting / pushing
- Begin shoulder AROM, continue AAROM within ROM guidelines
- Begin light RROM biceps/triceps (absent BT or labral repair)
- Begin sub-max RTC isometrics in neutral GHJ and scapular position
- NWB rhythmic stabilization, CKC <10% BW
- Slow progression of P/AA/AROM IR behind back at 10 weeks

Phase 3 Therapeutic Activities:

- GHJ protected PROM and mobilizations with target intensity for mild to moderate tissue deformation to patient's tolerance
- Endurance focused AROM exercise without compensations
- Gentle NWB rhythmic stabilization activities

Criteria for Progression to Phase 4:

- Tolerates AA>AROM without undue soreness
- AROM within 15% of uninvolved UE with good GHJ arthrokinematics
- Maintains scapula and thoracic posture during exercise without cueing
- **PROM to Achieve without Exceeding: (Flex = 170^0) (ABD = 150^0) (EXT = 50^0) (ER in RP = 80^0) (ER @ 90^0 ABD = 70^0) (IR in RP= 70^0) (IR @ 90^0 ABD = 60^0)**

Progression Note:

- If the patient is having difficulties attaining the above mentioned functional ROM at 12 weeks, more forceful short lever mobilizations and stretching with GHJ protection may be used with respect to the patient's pain tolerance
- If excessive shoulder shrugging occurs with AA/AROM elevation do not progress to additional exercise above shoulder level (increase Manual focus). Poor humeral head inferior glide with elevation

Phase 4: Advanced strengthening and Final HEP (week 12-D/C)

Goals:

- Finalize full PROM, then achieve and maintain full non-painful AROM
- Progress muscular endurance, strength and power
- Return to light duty work and modified recreational activity absent of forceful repetitive overhead tasks
- Patient understands appropriate exercise progressions/regressions for long term success with HEP to prevent likelihood of re-injury

Precautions:

- Continue to avoid sudden reactional motions and heavy/repetitive lifting overhead early in phase 4
- Begin RROM for RTC progressing from neutral GHJ to 90/90 ABD as tolerated
- CKC to 50% progressing to FWB at 18 weeks

Phase 4 Therapeutic Activities:

- Slow progression of low elevation RROM IR/ER *followed by RROM* flexion, scaption and extension
- Ensure gradual exercise and activity progression
- Home program maintenance and progression education
- Return to work and recreation specific exercise
  - ☐Suggested sport specific progressions for overhead throwing, softball pitching, swimming, tennis, golf and volleyball can be found in the Post-Surgical Return to Shoulder Sports Playbook at vvorthocare.org

Criteria for Discharge / Expected Outcomes:

- Pain free AROM to 95% uninvolved extremity with normal mechanics
- Pain free isometric muscle strength to 85% uninvolved extremity
- Compliant with prescribed HEP and understanding of commitment to shoulder care

Physician Alert Recommended:

- If comorbidities create unattainable goals for discharge, discuss this with the treating physician group
- If patient has been unable to make consistent/adequate gains in A/PROM and strength Dr. George would like more information to decide whether injections or revisions may be indicated ≈12-16 weeks in order to meet a patient's functional and pain control goals

Abbreviation List:

AARROM: Active assisted range of motion
ABD: Abduction
ADD: Adduction
ADL: Activity of daily Living
AROM: Active range of motion
BT: Biceps tenodesis
BW: Body Weight
CKC: Closed kinetic chain
D/C: Discharge
DVT: Deep vein thrombosis
ER: External rotation
EXT: Extension
FWB: Full weight bearing
GHJ: Gleno-humeral joint
HEP: Home exercise program
IR: Internal rotation
LE: Lower extremity
MA: Medical assistant
MD: Medical doctor
Mobs: Mobilizations
NWB: Non weight bearing
PA: Physician assistant
PE: Pulmonary embolism
PROM: Passive range of motion
ROM: Range of motion
RP: Resting position
RROM: Resisted range of motion
RTC: Rotator Cuff
UE: Upper extremity
WB: Weight bearing
#: Pounds
≈: Approximately
≠: Without
Wks: Weeks

Risk Factors for a Failed Structural Repair

Approach → Factors ↓	Conservative
Age	Over 65 years old
Bone Density	Osteopenia/Osteoporosis
Smoker	Yes
Tear size / #	> 3cm / multiple tendon
Tissue Quality	Poor
Pre-op Strength	Poor

Adapted from: Kokmeyer D[1] et al.

ROM & Activity Quick Guide

Wk	ROM Restrictions	Activity
0-6	●90⁰ elevation ●30⁰ ER in RP ●20⁰ER @90⁰ABD ●20⁰ IR in RP ●0⁰ Ext	- Therapist PROM only
6-8	●130⁰ Flex ●90⁰ ABD ●60⁰ ER in RP ●50⁰ ER in 60⁰ ABD ●40⁰ ER in 90⁰ ABD ● 40⁰ IR in RP **●20⁰ EXT ●20⁰ IR in 90⁰ ABD @ 7 Wks**	- Begin AAROM elevation & Agonistic Rotation - CKC <10% BW - Begin PROM EXT and IR in 90⁰ ABD **@ 7 Wks**
8-10	● 140⁰ Flex ● 110⁰ ABD ● 30⁰ EXT ● 60⁰ ER in RP ● 50⁰ ER in 90⁰ ABD ● 45⁰ IR in RP ● 40⁰ IR in 90⁰ ABD	- Begin AROM - Begin Sub-max Isometrics - Begin Light Elbow RROM ≠ BT
10-12	● 170⁰ Flex ●150⁰ ABD ●50⁰ EXT ● 80⁰ ER in RP ● 70⁰ ER in 90⁰ ABD ● 70⁰ IR in RP ● 60⁰ IR in 90⁰ ABD	- P/AA/AROM IR behind back
@ 12	Full P/AA/AROM As Tolerated	Begin RTC RROM CKC to 50% BW
18+	Full P/AA/AROM As Tolerated	CKC to 100% BW Progressive RTC RROM into elevated ranges as tolerated

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