Clavicle Repair Protocol

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PHASE I: Generally 0 - 6 Weeks Post-Op

GOALS:

1) Control pain and swelling
2) Protect surgical repair
3) Normal shoulder ROM

PRECAUTIONS:

- Sling full-time for 4 weeks, wean by 6 weeks post-surgery

Week	Forward Flexion	ER in Scaption	IR in Scaption	Abduction
Week 1-2	≤90°	≤60°	≤60°	≤90°
Week 3-6	≤120°			≤120°

- No lifting greater than 1-2 lbs for 6 weeks

WOUND CARE:

- Post-op dressing removed at PT eval
- Shower at post-op day #3
- Submerge in water after wound is fully healed
- Suture removal @ 7-14 days post-op by Ortho

MODALITIES:

- Cryotherapy
  - Hourly for 15 minutes for the first 24 hours after sensation is restored from nerve block
  - Continue use until acute inflammation is controlled
  - Once controlled, use 3x per day for 15 minutes or longer as tolerated
- Soft tissue mobilization and other integrative medicine techniques
  - Soft tissues/trigger point work to the kinetic chain (i.e. cervical spine, scapular, and forearm)

REHABILITATION:

- Frequent use of cryotherapy and/or ice
- Begin scar massage after incision site has healed and scar is formed
- Consider dry needling with avoidance of incision sites (discuss with Ortho)

	- Consider blood flow restriction (BFR) on uninvolved arm or LE for physiological benefits at 1-2 weeks from surgery - As tolerated, progress rehabilitation exercises as wound healing occurs and the inflammatory response decreases
~1-6 weeks	- ROM exercises: • Shoulder PROM/AAROM within above ROM guidelines in non-impingement position (i.e. hammer grip) • Scapular mobilizations • Modified pendulums in sling; progress to full pendulums after 3-5 days - Strengthening: • Ball squeezing exercises • Elbow/wrist AROM and grip strengthening with shoulder in neutral position at side • Gentle submaximal ("2-finger") shoulder isometrics • Scapular retraction • BFR (elbow FLEX/EXT) on uninvolved arm or LE - Cardiovascular training: • Recumbent bike while wearing sling • No running or high-impact activity for aerobic training
FOLLOW-UP:	- Supervised rehab: 1-2x per week - PT re-eval: ~10-14 days - Ortho re-eval: ~2 weeks and ~6 weeks

PHASE II: Generally 7-12 Weeks Post-Op	
PHASE II GOALS:	1) D/C Sling 2) Achieve full shoulder ROM 3) Minimize shoulder pain 4) Begin to increase strength and endurance 5) Increase functional activities
PRECAUTIONS:	- **DO NOT** lift objects heavier than 1 or 2 pounds - **NO forceful pushing or pulling:** push-ups, bench press, pec flys, throwing, or overhead activities - **NO** running or high-impact activity for aerobic training
REHABILITATION:	Continue Phase I exercises as needed Progress to the following exercises and increase intensity gradually when patient is ready (i.e. no increase in knee pain or effusion since the previous exercise session)
~7-12 weeks	- Increase functional activities - ROM exercises - Trunk stabilization (NWB)

	- Scapular strengthening emphasizing scapular retractors and upward rotators
	- Shoulder strength and endurance progression: IR, ER, Rows & Serratus Anterior
	  • Continue base strengthening/isometrics as needed
	  • PREs
	- Proprioception drills
	- Rhythmic stabilization
	- Initiate push-up progression starting at wall at week 8
	- Cardiovascular training: continue recumbent bike; progress to elliptical (no push/pull with surgical arm) and/or treadmill walking
	- Adjunct treatments to consider: BFR on involved arm for AROM and isometric activities, dry needling, cervicothoracic manual therapy, aquatic walking with water at chest level or below (no UE movement or resistance; no swimming)

FOLLOW-UP:	- Supervised rehab: 2-3x per week - PT re-eval: ~10-14 days - Ortho re-eval: ~12 weeks post-op
CRITERIA FOR PROGRESSION	- Pain-free ROM within stated goals - Achieve ROM goals to normalize AROM/PROM - Normal/near-normal scapular stabilization and coordination

PHASE III: Generally 13-18 Weeks Post-Op	
GOALS:	1) Normalize AROM/PROM 2) Normalize strength, endurance, neuromuscular control, and power 3) Perform functional and kinesiological assessment (i.e. FMS) 4) Perform initial functional testing
PRECAUTIONS:	Avoid overhead lifting
REHABILITATION:	Continue Phase II exercises as needed Progress to the following exercises and increase intensity gradually when patient is ready (i.e. no increase in knee pain or effusion since the previous exercise session)
~13-18 weeks	- AROM/AAROM - ER at 90° abduction stretch, sleeper stretch, behind back IR - Theraband progressive resistive exercises: IR,ER, dynamic hug, bicep curl - Prone I's, Y's, T's - Sidelying shoulderER - Continued proprioceptive training - Continue push up progression
FOLLOW-UP:	Physical therapy: monthly Ortho: ~6 months post-op Supervised rehab: 1-2x per week as needed
TESTING:	Closed Kinetic Chain Upper Extremity Stability Test [CKCUEST] Upper Quarter Y-Balance Test

PHASE IV: Generally 19-28 weeks Post-Op	
GOALS:	1) Maintain full ROM 2) Continue strengthening progression 3) Protect the surgical repair 4) Return to sport-specific training/practice
PRECAUTIONS:	Weight Training to be initiated based on surgical clearance
REHABILITATION:	Continue Phase III exercises as needed Progress to the following exercises and increase intensity gradually when patient is ready (i.e. no increase in knee pain or effusion since the previous exercise session)
~19-28 weeks	- 'Rebounder' throws: arm at side and then progress - Wall dribbles at 90° • Circles • overhead
FOLLOW-UP:	Physical therapy: monthly Ortho: ~6 months post-op Supervised rehab: 1-2x per week as needed
TESTING:	Closed Kinetic Chain Upper Extremity Stability Test [CKCUEST] Upper Quarter Y-Balance Test
MISCELLANEOUS:	After 6 months post-op, exercises in Phase III are continued, gradually increasing intensity and duration as needed based on patient specific limitations and sport specific activities. The recommendation is to wait until 6 months post-op to return to contact/collision sports or aggressive military training (i.e. airborne school). This time period may be adjusted slightly by the surgeon and therapist according to patient progress and functional outcomes.

References:

Catapano M, Hoppe D, Henry P, Nam D, Robinson LR, Wasserstein D. Healing, Pain and Function after Midshaft Clavicular Fractures: A Systematic Review of Treatment with Immobilization and Rehabilitation. *PM R*. 2019;11(4):401-408. doi:10.1002/pmrj.12065