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HOSPITAL FOR SPECIAL SURGERY

Physical Therapy following Distal Tibial Allograft Procedure

The following is a basic framework from which to work during rehabilitation following a Distal Tibial Allograft procedure for anterior shoulder instability. Every patient is different, so the time points are just guidelines – the emphasis should be on achieving the milestones of each phase prior to advancing to the next phase. Please feel free to communicate with our office with any questions or concerns.

PHASE 1 – PROTECTIVE/HEALING PHASE: (0-4 weeks)

PRECAUTIONS/ACTIVITY GUIDELINES

- Sling immobilization 24/7 except for grooming and physical therapy several times daily
- Avoid the 90/90 abduction/external rotation position for the first 6 weeks postoperatively
- External and internal rotation in plane of the scapula in loose packed position, at around 30 degrees abduction; ER to 45 degrees is encouraged to prevent excessive scarring of Subscapularis split. This exercise should be encouraged for at least 5x per day home program
- Limit forward elevation (supine forward elevation in the scapular plane) to 90°
- Elbow A/AAROM: flexion should be supported with well arm
- NO shoulder extension posterior the frontal plane (eg. No hand slide up spine/functional internal rotation)
- Do not perform pendulums
- Wrist and gripping exercises
- May shower after 5 days with incision/portals uncovered, maintain arm in sling position.
- No submersion in bath/pool for a month

GOALS

- Patient education about the nature of the surgery, associated precautions and expected rehabilitation progression
- Protect allograft fixation and create an environment for optimal healing
- Avoid scarring of the subscapularis to the conjoint tendon by encouraging frequent ER
- Control pain, swelling and inflammation
- Achieve PROM limits established above (45 deg ER at 30 deg abduction in scapular plane)

- Establish stable scapula

EXERCISES/PT INTERVENTIONS

- Wrist flexion/extension; pronation/supination; grip
- Well arm supported elbow flexion/extension
- Scapular retraction to neutral
- Shoulder elevation as tolerated: table supported, to active assisted with cane
- External rotation in scapular plane at 30 deg abduction to 45 deg
- Begin deltoid/cuff isometrics

CRITERIA TO PROGRESS TO PHASE 2

- Clearance from post op appointment with Dr. Brusalis' team
- Pain well managed at less than 3/10

PHASE 2 – MOTION RECOVERY PHASE:
(Weeks 4 through 5)

PRECAUTIONS /ACTIVITY GUIDELINES

- May wean out of sling at home; continue to wear in community as sign of vulnerability to others; use of abduction pillow is not necessary
- May perform elbow flexion actively, but no resistance greater than a coffee cup
- No shoulder extension posterior the frontal plane (no functional IR behind back)
- May progress ER in loose packed position (30 degrees abduction in scapular plane) as tolerated

GOALS

- Continued protection of healing allograft onto the anterior glenoid rim
- Little to no pain
- Prevent stiffness, particularly for external rotation

EXERCISES/PT INTERVENTIONS

- Pendulum
- Elbow flexion/extension unsupported
- Scapular retraction to neutral
- Elevation and ER In loose packed position as tolerated – passive and active assisted and active all allowed; active ROM not to be initiated until PROM is fully restored
- External rotation and deltoid isometrics (no IR isometrics yet due to healing Subscapularis split)
- Posterior capsule stretches: cross body; modified sleeper stretch if tolerated

CRITERIA TO PROGRESS TO PHASE 3

- Pain well controlled
- ER in loose packed position is at least 45°

Phase 3- FUNCTIONAL RECOVERY PHASE:
(Weeks 6 through 12)

PRECAUTIONS/ACTIVITY GUIDELINES

- Discontinue sling completely (no more use, even in community)
- May begin to initiate extension posterior the frontal plane (eg. Hand behind the back stretch)
- May initiate ER in scapular plane at higher levels of abduction (45 deg and 90 deg)
- May initiate resistance to biceps – slow progression of loading
- Avoid pectoral muscle strength training until next phase so that can acquire full ER motion and rotator cuff/scapular strength to support the glenohumeral joint

GOALS

- Full AROM in all planes with good mechanics
- Little to no pain that is low and transient with activity
- Gradual restoration of strength in biceps, rotator cuff, deltoid and scapular stabilizers

EXERCISES/PT INTERVENTION

- End range stretching for IR/posterior capsule (hand slide up spine OK now without excessive force)
- ER stretching toward full range in scapular plane with arm at side, 45 deg and 90 deg (symmetry to uninvolved shoulder is goal, though may accept slight decrease in ER)
- Isolated glenohumeral elevation with blocked scapula to achieve near 120 deg; normalize forward elevation ROM passively and actively with good mechanics: supine to incline to vertical AROM
- Rotator cuff (IR, ER and scaption) and scapular strengthening with TheraBand, dumb bells, Body Blade)
- May begin biceps curls with slow progressive resistance
- May resume jogging; leg press; squats with light hand weights

CRITERIA FOR RETURN TO WORK/SPORT

- Sufficient ROM and strength for job/sport demand
- Discuss with surgeon and therapist

Phase 4- STRENGTH RECOVERY PHASE: (weeks 12+)

PRECAUTIONS/ACTIVITY GUIDELINES

- Bone block allograft integration to glenoid should be solid
- Subscapularis split should be healed
- May increase loads across anterior shoulder progressively toward normal addressing remaining deficits more aggressively
- No collision sport or overhead throwing prior to 4 months
- All pectoral work should be done from the frontal plane and anterior – "always see elbows in peripheral vision"

GOALS

- Normalize all AROM/PROM for elevation, and IR; ER should be within 7-10 degrees of opposite side
- Symmetry of strength in rotator cuff, deltoid, and scapular stabilizers as measured by hand held dynamometer
- Return to chest level functional activity
- Gradual increase in load to the anterior shoulder

EXERCISES/PT INTERVENTION

- Address ROM deficits with low load long duration stretching frequently
- May advance pectoral work to include push up, bench press, chest flies remaining even with or anterior the frontal plane; gradual increase in force/load starting with low load and high reps
- Continue biceps PRE
- Subscapularis progression: Push up plus at wall, counter decline, prone on knees; prone on toes
- D2 diagonal pattern with TheraBand

CRITERIA FOR RETURN TO WORK/SPORT

- Clearance from surgeon
- No pain or feeling of instability
- Sufficient ROM and strength for task completion (throwers need 115 deg of ER)