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REHAB PROTOCOL FOR ACL RECONSTRUCTION USING PATELLAR TENDON AUTOGRAFT

General Guidelines

- **Brace**: Locked in full extension for walking and sleeping for first week
May allow 90 degrees flexion after first week given:
 - 1) Full extension
 - 2) Solid, isometric quad contraction
 - 3) SLRBrace will be worn for 4 weeks to protect graft, 0 to 90 degrees
 - **Crutches**: Wean from use after first week given full extension, solid, isometric quad set and SLR
 - **Weight bearing**: Full weight bearing as tolerated allowed immediately
 - **Bathing**: Showers allowed after 4 days post-op. Baths allowed after sutures removed at follow up with physician 7-10 days post-op.
 - **Driving**: Allowed 1 week after left leg procedures and automatic transmission. Allowed after 4-6 weeks with right leg procedures or standard transmission.
 - **Healing**: Assume 8 weeks for graft revascularization
- ~ **Meniscal Repair**: Brace locked in extension for 3 weeks, weight bearing as tolerated.
- ~ **Chondral Drilling**: Maintain 30% weight bearing with crutches for 3 weeks, brace as above.

Physical Therapy

Anticipate 1 visit per week for 2 to 3 weeks' then 2 visits per week for 20 weeks. Return to sport or full workload will take at least 6 months.

Rehabilitation Progression

Progression through these phases is provided as a general guideline; actual progression will take into account the patient's motivation, cooperation, healing and function.

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Phase I

0 to 4 weeks

Goals

- Protect graft and fixation
- Full active extension (compared to uninvolved knee) to 90 degrees flexion
- Control pain and effusion
- Tonic, sustained isometric quad contraction with SLR
- Normal gait pattern

Exercises:

- Patellar mobilization
- Quad set
- SLR
- Hip adduction SLR
- Hip extension SLR
- Knee flexion (prone)
- Hip abduction SLR
- SAQ (no resistance)
- Knee flexion (standing)
- Shallow squat/Toe raise
- Proprioceptive drills (with uninvolved leg):
Star reaches, Foam pad, Wobble board
- UE workouts

After two weeks add:

- Stationary bike - progress time and resistance, emphasis on "pull up" with toes
- Pool exercises - walking, hip flexion, hip adduction, hip abduction, hip extension, knee flexion, semi squats, toe raises

Phase II

4 to 10 weeks

Criteria

Sustained quad contraction throughout 4" lateral step down, 5 to 10 reps with good control.

Goals

- Protect graft
- Discontinue use of brace
- Full active flexion
- Normal gait pattern

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Exercise

- PRE's:
 - Hip adduction
 - Hip abduction
 - Hip extension
 - Knee flexion
 - Squats (to 45 degrees knee flexion, loading not to exceed body weight until six weeks post op)
 - Toe raise
 - Leg press (to 90 degrees knee flexion, loading not to exceed body weight until 6 weeks post-op)
- Stairmaster
- Stationary bike
- Proprioceptive drills:
 - Star reaches, Foam pad, Mini tramp, BAPS/Wobble board
 - Step ups/Step downs
- Patellar Mobilization
- Pool exercises:
 - Running (forward and backward), Lunges, Side steps, Carioca, Jumping Jacks, Hopping, Semi squats, Toe Raises

Phase III

8 to 20 weeks

Criteria:

- Normal gait pattern
- Able to perform HS curl within 10 lbs.

Goals:

- Protect graft
- Full AROM
- Increase strength, endurance, proprioception

Exercises:

- PRE's, Aerobic and Proprioceptive drills - Continue progressions from Phase II
- Patellar mobilization

After 10 to 12 weeks with 75% strength on leg press and HS curl (1 RM), add:

- Open chain knee extension (optional) 90 degrees to 45 degrees with supervision, progress to eccentrics
- Forward lunges
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- Running - 25% to 50% effort to start, begin on mini-tramp ¼ mile on balls of feet, progress ¼ to ½ mile per week, straight course Backwards running 200 yards per ¼ mile forward running
- Jump rope up to 20 minutes, varying foot work
- Progress to agility drills: Side steps, Cariocas, Figure 8's (20 yards---10 yards), Shuttle runs (alternating front leg for touch downs), Unilateral hops (multi-directional), Lateral slides

Phase IV

20 plus weeks

Criteria:

- Necessary strength, balance and endurance for return to sport or work
- 80% to 100% strengths on leg press, HS curl and knee extension (1 RM)
- Physician clearance

Goals:

- Safe return to pre-injury activities
- Assume independent continued exercise program

Exercises:

- Sport/Work specific drills
- Resistance running
- Plyometrics

