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Anterior Cruciate Ligament Repair

Post-Op Physical Therapy Protocol

PHASE I (Weeks 0 – 2): 2-3x/week, beginning 2-5 days post-op

Rehabilitation Goals

- Full extension symmetrical to contralateral knee before the first post-op visit at 2 weeks
- Flexion to 120°
- 20° SLR without quad lag
- Off of crutches Hinged Knee Brace

Precautions

WB: WBAT with crutches

Brace:

- Brace locked in extension until first PT visit, then unlocked at all times.
- May remove brace for sleep and exercises after 1 week

Suggested Therapeutic Exercises

- Prolonged extension- prone hang, supine with roll under ankle
- Heel slides, wall slides, prone knee flexion
- Isometric quad set, then SLR
- Hamstring isometrics
- 4-way hip and ankle exercises including calf pumps
- Initiate proprioceptive/balance exercises to include single leg stance, weight shifts forward, retro, lateral
- Patellar mobilizations (especially cranially)
- Ice 5x/day, 20 min each time, especially after exercises

Cardiovascular Exercises

- Stationary bike- no resistance

Progression Criteria

- DC crutches when quad control returns, full extension achieved, stable with low fall risk.; wean to 1 crutch if steady in gait

PHASE II (Weeks 2-4) Continue PT 2-3x/week

Rehabilitation Goals

- Full ROM
- Advanced strengthening
- Consider early neuromuscular retraining

Precautions

- Wear brace unlocked until good quad control except for sleeping, exercises

Suggested Therapeutic Exercises

- AVOID OPEN CHAIN RESISTIVE ESPECIALLY WITH WEIGHTS (resistance bands OK for hamstring/quad)
- Quad: Mini squats/wall squats, step ups
- Calf: heel raises, calf press
- Hamstring: Bridge, standing hamstring eccentrics
- Hip extension, ABD, ADD
- Consider balance board/wobble board for early NM retraining

Cardiovascular Exercises

- Stationary bike: as soon as motion (0-115 degrees) allows
- Elliptical
- Stairmaster
- Pool: Walking, Deep water aqua-jogging, NO KICKING (begin at 4-6 weeks)

Progression Criteria

- Full ROM
- Minimal Effusion
- Functional control for ADLs achieved
- DC brace: with adequate quad control for gait on level surfaces, inside. 6 weeks post-op.

PHASE III (Weeks 4-8) Continue physical therapy 1-2x/week as indicated

Rehabilitation Goals

- Maintain full ROM (should be full extension and to 135° flexion)
- Progress neuromuscular retraining program
- Core integration

Precautions (Phase III continued)

- No downhill walking/running, downhill skiing, downhill biking until 4.5 months

Suggested Therapeutic Exercises

- HEP 5x per week
- Progress neuromuscular proprioceptive/balance exercises including single leg balance progression- varying surfaces
- Pool: - 4-way hip, lateral movement, deep water jogging in place (no freestyle or frog/breaststroke kick)
- Strengthening: - lunges, sport cord, wall squats, step up/down

Cardiovascular Exercises

- May begin road biking outdoor on flat roads only
- May begin treadmill walking

Progression Criteria

- Neuromuscular exercises without difficulty

Phase IV (Week 8-3 months) Continue physical Therapy 1-2x per week

Rehabilitation Goals

- 12 weeks: light running/hopping without pain or swelling, progress to running patterns at 75% speed
- Good jumping mechanics- NO DYNAMIC VALGUS
- Hop drills without difficulty

Precautions

- No downhill walking/running, downhill skiing, downhill biking until 4.5 months

Suggested Therapeutic Exercises

- HEP 5x per week
- Agility drills: shuffling, hopping, running patterns (Ex: figure 8)
- Sport specific closed-chain exercises: - leg press (0-60°), step ups, mini squats (0-60°), short arc quad (30-90°), hamstring curls with light weight/high repetition

Cardiovascular Exercises

- Begin endurance closed-chain exercises 3-4x/week
 - Stairmaster, stationary bike, elliptical, NordicTrack (short stride)
 - Focus on increasing endurance.
- Progress jogging on treadmill or even ground to running patterns at 75%
- Pool: may start freestyle swimming (avoid frog/breaststroke kick), progress to shallow water jogging

Progression Criteria

- Running without knee effusion
- Hopping/agility drills without knee pain or effusion

Phase V (3-6 months): Continue physical therapy 2 visits per month to review HEP

Rehabilitation Goals

- Able to complete a running program
- May begin plyometric program: jump rope exercises
- Hamstring and quadriceps strength 90 % of normal leg
- Return to sport testing at 9 months post-op, prior to MD visit

Precautions

- Earliest return to full sports = 9 months.

(Phase IV continued) Suggested Therapeutic Exercises

- HEP 4-5x per week
- Agility drills: - Shuffling - Hopping - running patterns (Ex: figure 8)
- Sport specific: - plyometric program - fast straight running - backward running - cutting, cross-overs, carioca, etc. in controlled environment

Cardiovascular Exercises

- Pool available: may advance swimming (avoid frog/breaststroke kick)

Progression Criteria (Return to Sport)

- quadriceps and hamstring strength at least 90% of opposite leg
- Single leg hop test and vertical jump at least 90% of opposite leg
- Jog, full speed run, shuttle run, and figure of 8 running without a limp
- Full controlled acceleration and deceleration
- Squat and rise from a full squat
- No effusion or quadriceps atrophy