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Medial Patellofemoral Ligament Reconstruction Protocol

	WEIGHT BEARING	BRACE	ROM	EXERCISES
PHASE I 0-2 weeks	As tolerated with brace	On at all times during day and while sleeping** Off for hygiene	0-90°	Heel slides, quad and hamstring sets, patellar mobs, gastroc stretch, SLR in brace, modalities
PHASE II 2-6 weeks	As tolerated with brace	Discontinue at 6 weeks if able to obtain full extension w/o lag*	Maintain full extension and progress flexion	Progress weight bearing flexibility, begin toe raises and closed chain quad work Begin floor-based core and glutes work, balance exercises, hamstring curls and stationary bike
PHASE III 6 weeks - 4 months	Full	None	Full	Advance closed chain quads, progress balance, core/pelvic and stability work Begin elliptical, in-line jogging at 12 weeks under PT supervision
PHASE IV 4-6 months	Full	None	Full	Progress flexibility/strengthening, progression of function: forward/backward running, cutting, grapevine, initiate plyometric program and sport-specific drills @ 16 wks Return to play as tolerated after 16 weeks post-op when cleared by MD

I. Weeks 0-2:

- a. Restrictions:
 - i. Immobilizer must be on at all times when walking.
 - 1. Lateral knee foam pad is utilized while in the immobilizer.
 - ii. Avoid valgus stress to knee.
- b. Outcome measures:
 - i. PSFS: Patient specific functional scale.
 - ii. LEFS: Lower extremity functional scale.
- c. Goals:
 - i. Active flexion, passive extension ROM: 0-90 degree maximum.
 - ii. Reduce muscle atrophy.
 - iii. Reduce swelling.
- d. Weight bearing:
 - i. Partial weight bearing with immobilizer and crutches.
- e. Exercise examples:
 - i. Quad and hamstring sets.
 - ii. Gluteal sets.
 - iii. Hip belt abduction isometrics.
 - iv. Pillow adductor squeezes.
 - v. Crunches.
 - vi. Ankle dorsiflexion/plantar flexion isometrics or Theraband strengthening.
 - vii. Weight shifts.
 - viii. Cryotherapy multiple times during the day.

II. Weeks 2 to 6:

- a. Restrictions:
 - i. Avoid valgus stress to knee.
 - ii. Wear lateral buttress (Shield's brace) when walking.
- b. Goals:
 - i. Full weight bearing by six weeks without crutches
 - ii. Active flexion, passive to active extension ROM: 0-90 degree maximum.
 - iii. Reduce pain.
 - 1. Electrical stimulation.
 - 2. Soft tissue mobilizations and myofascial release.
 - iv. Reduce effusion.
 - v. Minimize hip, core and lower extremity atrophy.
- c. Weight bearing:
 - i. Weight bearing as tolerated with immobilizer, Shield's brace and

- crutches.
- ii. When patient regains quadriceps control, immobilizer discontinued.
- iii. When gait mechanics normalize, crutches discontinued.
- iv. Advance proprioception training as weight bearing status allows.

- d. Exercise examples:
 - i. Isometric leg press with angle no greater than 85 degrees of knee flexion.
 - ii. Straight leg raises in all planes of motion.
 - iii. Clam.
 - iv. Prone plank.
 - v. Crunches.
 - vi. Ankle Theraband in all planes.
 - vii. Seated upper body strengthening.

III. Weeks 6 to 8:

- a. Restrictions:
 - i. Avoid valgus stress.
 - ii. Avoid any patellofemoral pain with exercise program.
 - iii. Immobilizer discontinued when patient can perform straight leg raise flexion and abduction, and the physical therapist determines they have proper quadriceps control.
- b. Goals:
 - i. Full active range of motion of the involved knee at 8 weeks post-op.
 - ii. No effusion.
 - iii. Improved core and hip strength and endurance.
- c. Weight bearing:
 - i. Normal walking with Shield's brace on.
 - ii. Advance proprioception training.
- d. Exercises:
 - i. Maximize core, hip and lower extremity strength in all planes of motion.
 - ii. Maximize knee, hip and ankle mobility.

IV. Weeks 8 to 12:

- a. Restrictions:
 - i. Avoid valgus stress to involved knee/lower extremity during training and activities of daily living.
- b. Goals:
 - i. Maximize core, hip and lower extremity strength in all planes of motion.

- c. Weight bearing:
 - i. Full weight bearing activity no Shield's brace required.
 - ii. Advance to functional perturbation/proprioception training.
- d. Exercises:
 - i. Begin stationary bike.
 - ii. Continue to maximize core, hip, lower extremity mobility and stability programs.

V. Months 3 to 4:

- a. Restrictions:
 - i. Continue to maintain proper hip, knee and foot alignment during training and activities.
- b. Testing:
 - i. Y-balance test.
 - ii. Functional movement screen.
 - iii. Single leg press at body weight.
 - 1. 0-80 degree arc of motion.
 - iv. Address any asymmetries found in balance, movement and strength.
- c. Goals:
 - i. Begin to lay the foundation for return to sport.
- d. Exercises:
 - i. Initiate sport specific drills.
 - ii. Advance core, hip, lower extremity mobility and stability exercises.
 - iii. Advance aerobic and anaerobic energy systems by use of non-impact conditioning such as bike and elliptical trainer.

VI. Months 4-6:

- a. Restrictions:
 - i. Continue to maintain proper hip, knee and foot alignment during training and activities.
 - ii. Isokinetic testing.
 - 1. 60 and 180 degrees/second.
 - 2. Concentric.
- c. Outcome measures:
 - i. PSFS: Patient specific functional scale.
 - ii. LEFS: Lower extremity functional scale.
- d. Goals:

i. Full, unrestricted return to play.

e. Exercises:

i. Advance core, hip, lower extremity mobility and stability exercises. ii. Advance to appropriate plyometric exercises for the individual's sport or occupation.

iii. Advance aerobic and anaerobic energy systems by use of non-impact conditioning such as bike and elliptical trainer.