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Medial Patellofemoral Ligament Reconstruction Physical Therapy Protocol/Prescription

Patient Name:_____

Surgery: s/p MPFL Reconstruction

Date of Surgery:_____

Frequency: 1 2 3 4 times/week Duration: 1 2 3 4 5 6 Weeks

POST-OPERATIVE PHASE I - PROTECTION (WEEKS 0-6)

Critical Aspects of this Phase:

Ambulation w/ brace locked in extension, improve quad contraction, control pain/effusion, compliance w/ icing, CPM, and quad reactivation

Goals:

- ROM: 0° - 90° (can go slightly more if tolerating well)
- Weightbearing:
  - Progressive weight bearing to WBAT with brace locked in extension
  - Ok to use assist device to help normalize gait and minimize knee swelling
- Control post-operative pain / swelling
- Prevent quadriceps inhibition
  - Ok to use stim
- Promote independence in home therapeutic exercise program

Treatment Recommendations:

- Emphasize patient compliance with Home Exercise Program (HEP)
  - WBAT with knee locked in extension and appropriate assist devices
  - Cryotherapy (home unit)
  - **C**ontinuous **P**assive **M**otion (CPM) 2-3 hours/day; increase to 6-8 hours/day w/ cartilage procedure

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- Electrical stimulation for quadriceps re-education; quad sets w/ towel under knee

❖ Sitting knee ROM exercise (AAROM for knee extension, PROM for knee flexion)

❖ Distal strengthening

❖ Quad sets w/ towel roll under knee

❖ Hip progressive resistance exercise, pain free SLR (use brace if lag is present)

❖ Work on flexibility of hamstrings and gastrocnemius (band stretches)

Precautions:

❖ Avoid ambulation without the brace

❖ Avoid lateralization of the kneecap

❖ Avoid symptom provocation as this can lead to an effusion and quad shut down

Minimum Criteria for Advancement to Next Phase:

❖ Good quad contraction

❖ Good medial patellar mobility

❖ ROM: 0° to at least 90°

❖ No pain at rest

❖ Able to demonstrate unilateral (involved extremity) weightbearing without pain

❖ Able to SLR pain free and without a lag

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POST-OPERATIVE PHASE II - GAIT (WEEKS 7-10)

Critical Aspects of this Phase

Symptom control w/ ADLs, Normalize gait, Minimize effusion, Postural stability

Goals:

- ROM: 0-110° at 8 weeks, 0-125° at 10 weeks, progressing to full ROM
- Continue to work on patella mobility and quad contraction
- Minimal swelling
- Restore normal gait with assist device and progress to no assist device
  - Patient should have a non-antalgic gait before stopping assist device
- Postural stability, alignment, and neuromuscular control in single limb stance
- Promote independence in home therapeutic exercise program

Treatment Recommendations:

- Continue phase I exercises as appropriate, continue HEP
- Patellar mobilization
- Gait training: heel to toe with brace unlocked to 90°, or with functional brace and assist device (with good quad control [SLR without a lag, able to achieve full knee extension]). Low grade elevation or retro-walking to promote neuromuscular control with knee flexion during loading response. Hydrotherapy if available
- Bicycle progression from short crank to standard crank as ROM permits (115° knee flexion in sitting, 80 RPMs)
- Quad strengthening, progress pain free ROM (closed chain)
  - Continue w/ E-stim, biofeedback, quad sets, sub-maximal multi-angle isometrics
  - Leg press: monitor arc of motion (bilateral, eccentric)
  - Initiate forward step up (FSU) progression 6" step w/ adequate strength
- Flexibility exercises – based on evaluation (AROM knee flexion w/ hip extension in standing)
- Advance proximal and core strengthening (side planks, bridge)

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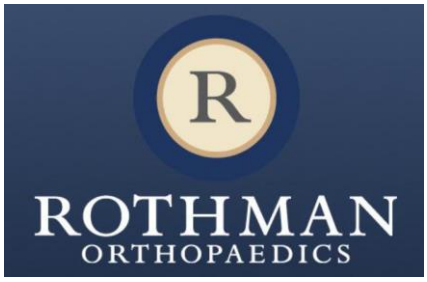

- Hydrotherapy for gait, single limb alignment and stability, proximal strengthening
- Initiate balance and proprioceptive training, double limb support on progressively challenging surfaces to single limb support on flat surface only once patient demonstrates good alignment and stability with neuromuscular control
- Progress/advance patients home exercise program (evaluation based)

Precautions:

- Avoid pathologic gait pattern (stiff knee, bent knee, quad avoidance)
- Avoid lateralization of the kneecap
- Avoid symptom provocation as this can lead to an effusion and quad shut down

Minimum Criteria for Advancement to Next Phase:

- ROM 0→115°
- Normal gait pattern
- Good patella mobility
- Postural stability, alignment, and neuromuscular control in single limb stance
- No pain w/ ADL and therapeutic exercises
- Independent HEP

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POST – OPERATIVE PHASE III – STRENGTHENING (WEEKS 11-18)

Critical Aspects of this Phase

Normal gait, Identify and correct muscle/tissue imbalance, Neuromuscular control, Quality of movement, Functional progression

Goals:

- Restore full ROM
- Pain free knee with no effusion
- Normalize gait on level surfaces and stairs
- Correct any imbalances
- Core stability: single leg bridge = 30s; Sahrmann > level 3
- Initiate running program, plyometrics
- Symmetry, quality, alignment during selected movement patterns: squat, jump in place

Treatment Recommendations:

- Progress quad strengthening as tolerated (closed chain)
  - Progress forward step up to 8”
  - Begin forward step down at 6” and progress to 8”
  - Squat progression: chair squats (assisted with ball if necessary) to free squats
- ROM exercises
  - AAROM w/ knee extension to AAROM w/ knee flexion in sitting, to supine wall slides, to stair stretch
- Continue to advance proximal (bridge progression, hip extension w/ knee flexion, clock, windmill, lawn mower), and core (planks, Sahrmann) strengthening
- Progress balance w/ postural alignment and neuromuscular control (static to dynamic, introduce different planes of motion, challenging surfaces)
- Cross training elliptical initiated w/ good strength/quality of 6” step up, bicycle (80 RPMs), swimming (crawl, back stroke)

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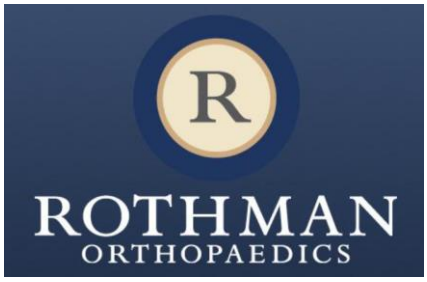

- Begin running progression once patient has good eccentric quad control w/ 8" step up
  - Begin w/ 30 second intervals
- Begin plyometric program once patient has good quad control
  - Begin w/ jump up and progress to jump in place
- Emphasize patient compliance to both home and gym exercise program

Precautions:

- Don't overdo it too quickly and ensure patient's gait has normalized
- Avoid symptom provocation
- Be careful not to disregard the quality of movement

Minimum Criteria for Advancement to Next Phase:

- Normal ROM, no pain/swelling, normal gait
- Ability to demonstrate alignment, control, stability in single leg stance during dynamic activities
- Core stability: single leg bridge = 30s; Sahrmann > level 3
- Able to ascend/descend 6"/8" step w/ good control and alignment
- Functional progression pending functional assessment

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POST – OPERATIVE PHASE IV – ADVANCED STRENGTHENING AND FUNCTION (WEEKS 19-24)

Goals:

- No pain or instability w/ sport specific activities/movements
- Maximize strength and flexibility to meet demands of sports
- Demonstrate strategy, symmetry, quality, control and alignment during selected movements (squat, jump (vertical and horizontal), single leg squat)
- Maximize strength and flexibility as to meet demands of ADLS
- Cardiovascular endurance to meet demands of sport
- Hop Test > 75% limb symmetry

Treatment Recommendations:

- Advance lower extremity strengthening, flexibility, and agility (single and double leg)
- Correct any muscle imbalances
- Advance core stability
- Cross training
- Advance plyometric program with evidence of good quad control
  - Vertical jump progression (jump down)
  - Horizontal jump progression (broad jump, single leg landings)
  - Progress running program
  - Cutting, deceleration, change of direction, and dynamic single limb stability

Precautions:

- Avoid pain with therapeutic exercise & functional activities
- Avoid inadequate strength, ROM, stability, fitness, and flexibility when RTS

Minimum Criteria for Advancement to Next Phase:

- Has excellent symmetry, quality, and alignment during sporting activity movements

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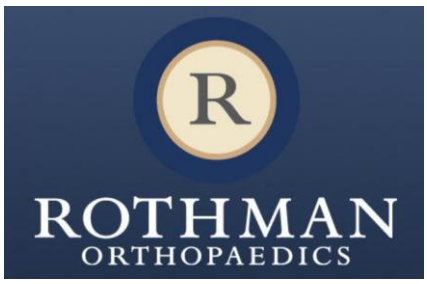

- No apprehension w/ sport specific movements, 85% limb symmetry index (LSI)

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POST – OPERATIVE PHASE V – RETURN TO PLAY (WEEKS 25-30)

Goals:

- No pain or apprehension w/ sport specific activities/movements
- Maximize strength and flexibility to meet demands of sports
- Demonstrate excellent ability to decelerate under control
- Cardiovascular endurance to meet demands of sport
- Hop Test > 85% limb symmetry

Treatment Recommendations:

- Advance cutting and deceleration training
- Advance plyometric program with evidence of good quad control
  - Horizontal jumping progression: Broad jump to hop to opposite to single leg hop

Precautions:

- Avoid pain with therapeutic exercise & functional activities
- Avoid inadequate strength, ROM, stability, fitness, and flexibility when RTS

Minimum Criteria for Discharge:

- Ability to decelerate with good control and alignment on single limb
- Has excellent symmetry, quality, and alignment during sporting activity movements
- No apprehension w/ sport specific movements, 85% limb symmetry index (LSI)
- Independence w/ gym program for maintenance and progression of program
- Has quality movements with sport specific activity
- Hop Test > 85% limb symmetry