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PATELLOFEMORAL JOINT MICROFRACTURE

POST OPERATIVE PROTOCOL

Phase I – Tissue Protection/Healing Phase (0-8 weeks)

GOALS:

- 1) Reduce pain
- 2) Facilitate new cartilage formation
- 3) minimize scar adhesion formation
- 4) Improve knee ROM
- 5) Facilitate quadriceps activation

ROM:

PROM/AAROM/AROM
 Bike: Rocking to full revolution as ROM allows

EXERCISE:

Quad isometrics
 SLR—4 way (flex/abd/ext/add)
 Clamshells
 Hamstring Isometrics

MANUAL:

Patella Mobilization
 Patellar tendon mobilization
 Extension with overpressure

MODALITIES:

Functional Electrical Stimulation
 Biofeedback
 Cryotherapy

Criterion for Progression:

- 1) *Voluntary quadriceps isometric contraction*
- 2) *No extensor lag with SLR*
- 3) *Good patellar mobility*
- 4) *Knee ROM full knee extension equaling opposite LE to functional knee flexion*

Phase II – Tissue Proliferation Phase/Progression Phase (9-12 weeks)

GOALS:

- 1) Pain and edema control
- 2) Maximize knee ROM
- 3) Strength progression-develop functional quad control
- 4) Achieve normal gait

ROM:

PROM/AAROM/AROM
 Stationary Bike for ROM

EXERCISE:

Squats/leg press (60°-0°)
 Closed chain terminal knee extension
 Calf Raises
 LAQ OKC
 Weight shifting/balance/perturbation training
 Bridging progression
 Step ups, Step downs, lateral step downs

MANUAL:

Scar mobilization
 Patellar mobilization

MODALITIES:

Continue PRN

Weight Bearing

- NWB x ____ wks
- TDWB x ____ wks
- PWB ____% x ____ wks
- WBAT
- Brace Locked in Ext x ____ wks

ROM

- Full ROM
- Locked full ext x ____ wks
- Locked at ____° x ____ wks
- ROM limits
 ____° to ____° x ____ wks
 ____° to ____° x ____ wks
 ____° to ____° x ____ wks

CPM

- ____° to ____° x ____ wks
- 30-70° increase 10°/d @ dir
- None

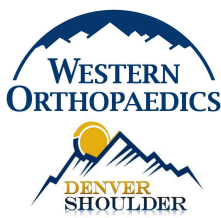
Recommended Clinical Guidelines

WB: TDWB x 2 weeks
 WBAT weeks 3-8
 (brace locked in ext)

ROM: CPM or AROM
 4-8 hours/day x 6-8 wks

Estimated Return to Sport:

Notes:



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CV EXERCISE:

Biking, Treadmill walking, retro-walking on treadmill, swimming

Criterion for Progression:

- 1) *Minimal to no effusion/edema*
- 2) *ROM equal to opposite LE*
- 3) *Full patellar mobility*
- 4) *Ambulate on level surfaced with normal gait*

Phase III – Tissue Remodeling/Hypertrophy Phase (12-24 weeks)

GOALS

- 1) Normalize eccentric quad control
- 2) Strength progression
- 3) Begin sport specific agility drills

ROM:

PRN

EXERCISE:

Advanced strength/proprioception/balance
Full squat to 90° (as tolerated)
Single leg squat to 60° (as tolerated)
Initiate jogging progression
Lateral motion/stepping

CV Exercise:

Outdoor walking/hiking
Swimming

Criterion for Progression:

- 1) *No pain or edema/effusion*
- 2) *Full ROM*
- 3) *20 reps to 60 degrees single limb squat with eccentric control and good lower extremity alignment*
- 4) *Quad strength >80% of uninjured LE (10RM single leg press or isokinetically if available)*

Phase IV – Sport Specific Training (6 months+)

If desired by and patient and cleared by MD

GOALS:

- 1) Begin sport specific drills
- 2) Normalize neuromuscular control
- 3) Normalize jumping/landing mechanics if indicated
- 4) Return to sport

EXERCISE:

Agility progression
Begin plyometric progression
Jogging progression/sports-specific training

Criterion for Return to Sport:

(Recommend combination testing of strength, agility, and power according to available resources/clinic setting)³

- 1) *Lower Extremity Functional Test (LEFT)*
- 2) *Hop Tests – Single Hop, X-Hop, Triple Hop, Timed Hop \geq 85% uninjured*
- 3) *Single leg squat to 60 degrees knee flexion with good control for 3 minutes*
- 4) *Quad strength > 90% of uninjured (10RM leg press or isokinetic testing)*
- 5) *IKDC (MCID 6.3@ 6mo; 16.7 @ 12 mo)*