BEACON
Orthopaedics & Sports Medicine

Meniscal Repair Protocol-Dr. McClung

Brace:

- Normally patients will be wearing post-op knee brace locked in full extension for ambulation and sleeping but drop-locked for sitting and knee ROM.
- Patients will wear the brace for 3 months.
- Brace Settings
- Week 1-2 brace 0-30
- Week 3-4 brace 0-60
- Week 4-5 brace 0-90

Weight Bearing:

- Patients are on strict NWB for 6 weeks with gradual weaning of the crutches over 1-2 additional weeks as long as patient has good quad control, full knee extension. Once crutches are discontinued, patient still needs to continue walking with brace locked in extension until 3 months post-op.

Swelling Control

- Ice, elevation, compression, and modalities as needed to decrease swelling

Range of Motion (ROM)

- Immediate motion exercise day 2
- Full passive knee extension immediately
- Active Assistive knee flexion ROM at least 2-3 times daily per protocol ROM restrictions
- Patellar mobilization (4-6 times per day)

ROM Restrictions:

- Week 1-2 0-30 (sometimes MD will allow 0-60 depending on repair)
- Week 3-4 0-60 (sometimes MD will allow 0-90 depending on repair)
- Week 5-6 0-90 (sometimes MD will allow >90 depending on repair)

Strengthening Program:

- Quadriceps Sets, Glut Sets, Adductor Sets
- Electrical muscle stimulation and/or biofeedback during quadriceps exercises can begin at 2 days post-op
- Straight leg raises-flexion-Can begin at 2 days post-op
  - -8 sets of 10 repetitions-gradually increase weights in 1 lb increments up to 5-7 lbs.
- Straight leg raises-abduction/adduction/extension-Can begin at 3 weeks post-op

- Stationary bicycle when MD protocol allows at least 105 degrees and patient has no pinching with end range flexion. This generally will not occur until 8-12 weeks post-op. Perform bike with low resistance and seat raised.

I. Phase I: Proliferation Phase (weeks 0-6)

Phase I: Proliferation Phase Goals:

- Protection of healing tissue from load and shear forces
- Decrease pain and effusion
- Restoration of full passive knee extension
- Gradual improvement of flexion within ROM restrictions of the MD protocol
- Regaining quadriceps control

Day 2-Week 1 Post-op

- Ambulation-2 Crutches and NWB with brace locked in extension
- Perform dressing change-notify MD if any signs of excessive drainage, signs of infection or DVT or any other potential complications
- Can use vasopneumatic pump and cryotherapy to decrease swelling
- High volt galvanic stimulation (HVG) can also be used along with ice to decrease swelling
- Patient should be instructed to keep leg elevated (knee fully extended), wear ace bandage and to ice knee for 15-20 minutes at least 4-5 times per day
- Pre-modulation or interferential electrical stimulation can be used to decrease post-operative pain
- Biofeedback and/or electrical muscle stimulation can be used to facilitate quadriceps contraction
- CPM machine can be used based on MD preference
- Patellar mobilization-medial, lateral, superior and inferior
- Long sit hamstring stretch
- Gastroc stretch with towel
- Ankle pumps to prevent lower leg edema and to prevent DVT
- Patient can begin active assisted knee flexion seated over the edge of the bed or table within ROM restrictions outlined by MD (generally not greater than 0-30)
- If patient can not get knee fully extended, perform heel prop is supine to get full passive extension
- Quad sets, gluteal sets, adductor sets in supine
- SLR-Hip Flexion,

Weeks 1-3 Post-op

- Continue to use Biofeedback and/or electrical muscle stimulation
- Add weights for SLR-Hip Flexion

Weeks 3-6 Post-op

- AA Knee Flexion using other leg if patient having difficulty regaining knee flexion (don't go beyond ROM restrictions which are generally 0-60 degrees)
- Continue passive knee extension if patient doesn't have full knee extension

- Multi-angle (MAI) quadriceps isometric exercise within ROM restriction
- Manual hamstring and gastroc stretches
- Scar massage to improve scar mobility
- SLR-Hip Abduction/Adduction/Hip Extension-add weights as tolerated

II. Phase II: Transition Phase (weeks 6-12)

Criteria to progress to Transition Phase

- Full passive knee extension
- Knee Flexion to 90
- Minimal pain and swelling

Phase II: Transition Phase Goals:

- Gradually increase ROM and WB
- Gradually improve quadriceps strength/endurance
- Gradual increase in functional activities

Brace

- Continue brace for additional 6 weeks with brace locked in extension for ambulation with WBAT without assistive device

WB Status

- Progress WB as tolerated (Physician Direction)
- Discharge crutches at 6-8 weeks

ROM:

- Gradual increase ROM generally to 90 degrees unless otherwise directed by MD
- Maintain full passive knee extension
- Continue patellar mobilization and soft tissue mobilization, as needed
- Continue stretching program

Week 6-9 Post-op

- Active SAQ can begin if patient can lift at least 3 lbs on SLR hip flexion with no extensor lag and no pinching in the knee
- If patient can lift 3 lbs on 4 way SLR- progress to hip strengthening on the cable column or multi-hip machine. Can do cable column hip flexion/abduction/extension but do not do hip adduction
- Can begin aquatic exercise for open chain hip flexion/abduction/adduction/ extension
- Standing gastroc and soleus stretch
- Standing bilateral heel raise with brace locked in extension

Week 9 post-op

- Stationary bike if range of motion per MD ROM restrictions allows, begin with low resistance and seat elevated
- Gradually add resistance for SAQ's

Weeks 12 + post-op

- D/C brace for ambulation
- Cone walk-forward and laterally
- Begin stationary bike if ROM restrictions didn't allow it to begin earlier
- Stationary bike (gradually increase time and resistance)
- Leg Press (2 legged)-begin at 0-30, progress to 0-45 and then 0-60
- Do not do any closed chain exercise beyond 60 degrees knee flexion (leg press or squats
- Two leg bridge on table
- Physioball two leg bridge with knees extended
- One leg standing balance
- Progress to one leg balance-Airex
- Begin physioball wall squats or wall squats 0-30 progressing to 0-45 degrees
- Front step-ups
- Lateral step-ups
- Quadriceps stretch in sidelying or prone
- BOSU forward/back and side to side
- One leg heel raise
- Physioball wall squats or wall squats 0-45 degrees
- Begin Resisted knee extension (FAQ) with ankle weights (0-90 degrees)
- Treadmill walking to increase endurance and cadence
- Elliptical machine to increase endurance
- Leg Press-one leg from 0-30 degrees and progressing to 0-45 and 0-60 degrees as tolerated

Week 14-16 Post-op

- Progress to leg extension machine as tolerated (0-90 degrees)
- Step down
- BOSU mini-squats (0-30)
- Physioball wall squats or wall squats 0-60 degrees
- Physioball one legged bridge with knee extended
- Physioball two legged curl for hamstrings

4 month Post-op

- Begin hamstring curl machine
- Lateral shuffle with band
- Monster walk with band
- Airex box drill with band for 4 way hip
- Cone reach with knee straight
- Cone reach with knee bent slightly
- Forward lunge (limited range of motion)

Criteria to Start Running/Agility Program

- MMT at least 5/5, ROM equal to uninvolved side or at least 0-125
- Normal gait pattern at least 20 minutes without symptoms

- Leg Press test within 75-80% of contralateral LE
- Hamstring and quadricep strength 70 % of the involved side isokinetically,
- Lateral step test within 75-80% of contralateral LE
- No pain, crepitus, edema or giving way
- Clearance from MD

5-12 Months Post-op

- Lateral shuffle/Carioca
- Agility Ladder
- Sport Cord jogging
- Treadmill jogging or Aquatic jogging and Water Aerobics