

GARRETT COUNTY ORTHOPAEDICS

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Tibial Tubercle Osteotomy and/or Medial Patellofemoral Ligament Reconstruction (Fulkerson)

Guidelines:

- ROM is protected at the start to decrease stress on the healing osteotomy.
- Foot flat weight bearing with post-op immobilizer locked until signs of healing on x-ray (usually 6th weeks)
- Avoid valgus stress to the knee with ROM, especially with MPFL reconstruction
- Pt may benefit from taping into a medial glide to decrease stress on the healing osteotomy
- Once Pt starts to advance his weight bearing and functional activities monitor for any increase in osteotomy pain which can be a sign of a stress reaction

PHASE I: Hospital d/c through Week 8 – PROTECTION PHASE

PT Sessions: Directed by physical therapist

Ambulation: TTWB with crutches

Brace: Ambulate with brace unlocked to allow flexion for swing-thru while NWB

Exercise: *(followed by 20 min ice with towel under heel cord – full extension)*

1. Quadriceps E-stim x 15 min (muscle re-education)
2. SLR x 10
3. Heel slides x 30
4. Prone hangs 5-10 min
5. Calf / ankle pumps with tubing
6. Gentle hamstring (HS) stretching and multi-angle HS isometrics
7. Patellar mobilizations
8. Hip strengthening

Goals and Criteria for Progression to PHASE II:

1. Passive and active ROM of 90° and good patella mobility
2. Pain under control and minimal effusion

PHASE II: Week 8 through Week 12 – FULL ROM & STRENGTHENING PHASE

PT Sessions: 3 supervised sessions per week with outpatient physical therapist

Ambulation:

1. Crutches – progress to WBAT over next 4 weeks **once cleared by surgeon after checking post-op x-rays at 6-8 weeks post-op**
2. (25%WB wk 8, 50%WB wk 9, 75%WB wk 10, 100%WB by wk 12)
3. D/C crutches when satisfactory quad strength (30 SLRs w/o lag)

Brace: Wear at all times, unlocked, while ambulating and gait training, D/C as quad improves, may need pat stabilizing brace

Exercise: Continue with PHASE I exercises including quad sets x 100
Initiate mini-squats 0-45 deg
Closed chain leg press 0-60 deg
Open kinetic chain knee ext 90-30 deg w/o resistance
Stationary Bike
Stair Machine or elliptical at week 12
Balance drills
Mini front and lat step ups wk 9-10

Goals and Criteria for Progression to PHASE III:

3. Full passive and active ROM and good patella mobility
4. Good quad control (< 5° extensor lag)
5. Pain under control and minimal effusion

PHASE III: Week 12 through Week 18 – ADVANCED STRENGTHENING PHASE:

PT sessions: Directed by physical therapist

Brace: Discontinued after 12 weeks or when:

1. Pt has at least 0-120° AROM
2. Performs single leg balancing for 30 seconds
3. Demonstrates normal gait

Exercise:

1. Continue with PHASE II exercises
2. Initiate closed chain strengthening when gait is normal
 - a. mini squats (if no pain or crepitus)
 - b. heel raises and heel to toe rocking
 - c. single leg press 25% of body wt
 - d. AVOID active, open-chain quad extension
3. Initiate cardiovascular exercise
 - a. stationary bike for ROM (low resistance, seat high)
 - b. treadmill walking – forward
 - c. elliptical trainer
4. Proprioception drills:
 - a. single body blade
 - b. BAPS board (progress through levels w/ eyes open & closed)
 - c. plyoback training
5. Aquatic (pool) therapy
 - a. pool walking – forward and lateral
 - b. flutter kicks (knee remains extended)
 - c. weightless jogging

Goals and Criteria for Progression to PHASE IV:

1. Full AROM (95% strength of uninjured knee)
2. Normal quad and HS control; no quadriceps extension lag
3. Minimal pain; no effusion
4. Normal patellar mobility
6. Normal gait without crutches
5. Stair ambulation w/ minimal difficulty (no sensation of giving-way)

PHASE IV: Week 18 through Week 24 –BASIC FUNCTIONAL TRAINING:

PT sessions: Directed by physical therapist

Exercise:

1. Continue with PHASE III exercises
2. Muscle strengthening
 - a. Leg press progression up to 50% of body weight (single leg)
 - b. Quad and HS strengthening – exercise to muscle failure
3. Cardiovascular exercise:
 - a. Retro-walking on treadmill (2mph @ 1% grade – progress prn)
 - b. Add resistance to stationary bike at 60 RPM (if no pain / crepitus)
4. Advanced pool therapy
 - a. Treading water
 - b. Kickboard swimming
 - c. Pool running, shuffling, and carioca
 - d. Modified aquatic sports

Goals and Criteria for Progression to PHASE V:

1. Walking/biking for 20 min at normal pace w/o pain, swelling, giving-way
2. No effusion

PHASE V: 6 Months + -- ADVANCED FUNCTIONAL TRAINING

Exercises:

1. Continue with PHASE IV exercises with increasing weight
2. Progress leg presses up to 75% of body weight
3. Begin leg extension machine from 90-45° only (if no pain or crepitus)
4. Jogging (50-75% normal pace) on level surfaces – progress prn
No cutting, jumping, twisting, or contact sports

Optional: Kincom/Biodex Isokinetic Strength Test @ 6 months

When rehabilitation goals are met

1. Initiate straight line running when walk & slow jog is normal
2. Functional hop test as appropriate when running is normal
3. Functional progression to cutting and jumping
3. Begin full body weight, plyometrics prn
4. Return to sports prn when full strength and agility achieved
(Low-profile sports brace when required by surgeon)

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