Distal and/or Proximal Patellar Tendon Realignment

Guidelines/Precautions

• No closed-kinetic chain exercises for 6 weeks
• Same rehab protocol is followed for proximal and distal procedures except weight-bearing and other limitations as noted
• After combined proximal and distal realignment, the protocol for distal realignment is used

Phase I (1 – 5 days post-op)

• Wound care: Observe for signs of infection
• Modalities: prn for pain and inflammation (ice, IFC)
• Brace
  o Locked in full extension for all activities except therapeutic exercises and CPM use
  o Locked in full extension for sleeping
• Gait
  o WBAT with two crutches for proximal realignment procedure
  o 50% weight bearing with two crutches for distal realignment
• ROM
  o 0 – 30 degrees of flexion
  o Ankle AROM
• Strengthening: none

Phase II (5 days – 4 weeks post-op)

• Wound care: Monitor site for signs of infection and initiate scar management techniques when incision closed
• Modalities: Modalities PRN for pain and inflammation (ice, IFC)
• Brace
  o 0-4 weeks locked in full extension for all activities except therapeutic exercises and CPM use
  o Locked in full extension for sleeping
• Gait
  o WBAT with two crutches for proximal realignment procedure
  o 50% weight bearing with two crutches for distal realignment
• ROM
  o 0 – 2 weeks: 0 – 30 degrees of flexion
  o 2 – 4 weeks: 0 – 60 degrees of flexion
  o Goal of full knee extension by week 6
• Strengthening
  o Quad sets for isometric adduction with biofeedback and E-stim for VMO (no E-stim for 6 weeks for proximal realignment). Goal of regaining active quad and VMO control by end of 6 weeks.
  o Heel slides from 0 – 60 degrees of flexion for proximal realignment, 0 – 90 degrees of flexion for distal realignment
  o CPM for 2 hr, bid from 0 – 60 degrees of flexion for proximal realignment, 0 – 90 degrees of flexion for distal realignment
  o NWB gastroc, soleus, and hamstring stretches
  o SLR in four planes with brace locked in full extension lying down or standing
  o Resisted ankle ROM with Theraband
  o Patellar mobilization (begin as tolerated)
  o Begin aquatic therapy at 3 – 4 weeks, emphasis on gait

Phase III (4 – 10 weeks post-op)
• Wound care: Observe for signs of infection, continue scar mobs
• Modalities: continue prn for pain and inflammation (ice, IFC)

4 weeks to 6 weeks:
• Brace: Unlocked for sleeping, locked in full extension for ambulation
• Gait
  o WBAT with two crutches for proximal realignment procedure
  o 50% weight bearing with two crutches for distal realignment
• ROM: 0 – 90 degrees of flexion
• Strengthening: continue same as phase II

6 weeks to 8 weeks:
• Brace: Discontinue use for sleeping, unlock for ambulation as allowed by physician
• Gait: As tolerated with two crutches
• ROM: Increase flexion gradually to normal range for patient
• Strengthening:
  o May begin NMES for proximal realignment
  o Continue exercises progressing to full flexion with heel slides
  o Progress to weight-bearing gastroc, soleus stretching
  o D/C CPM if achieved 90 degrees knee flexion
  o Continue aquatic therapy
  o Closed chain balance exercises
  o Stationary bike, low resistance, high-seat
  o Wall slides progressing to mini-squats, 0-45 degrees of flexion

8 weeks to 10 weeks
• Brace: D/C
• Gait: May D/C crutches if no extension lag is present, patient is able to achieve full extension, and gait pattern is normalized with one crutch.
• Strengthening:
  o Should be able to demonstrate SLR without extension lag
  o May begin closed chain strengthening including step-ups (begin at 2 inch step)
  o Moderate resistance for stationary bike
  o Four way resisted hip strengthening
  o Leg press for 0-45 degrees of flexion
  o Swimming and/or stairmaster for endurance
  o Toe raises, hamstring curls and proprioceptive exercises
  o Treadmill walking
  o Flexibility exercises continued

Phase IV (10+ weeks post-op)

• Criteria
  o Clearance from physician to begin more concentrated closed-kinetic chain exercises and resume full or partial activity level
  o At least 0 – 115 degrees AROM with no swelling and complete voluntary contraction of quad
  o No evidence of patellar instability
  o No soft tissue complaints

• Strengthening
  o Progression of closed-kinetic chain activities including partial squats (60 degrees), leg press, forward and lateral lunges, lateral step-ups, leg extensions 60 – 0 degrees, bicycle and/or stepper.
  o Functional progression, sport specific activities

• Functional testing: Performance to < 25% deficit compared to non-surgical side by D/C

Adapted from:
1) Brotzman SB, Wilk KE. Clinical Orthopedic Rehabilitation. 2nd Ed. Philadelphia: Mosby; 2003