POSTOPERATIVE REHAB PROTOCOL: KNEE TIBIAL TUBERCLE TRANSFER/FULKERSON OSTEOTOMY

I. IMMEDIATE POST-OPERATIVE PHASE (Day 1 - Day 5)

Goals:
- Diminish swelling/inflammation (control hemarthrosis)
- Diminish post-operative pain
- Initiate voluntary quadriceps control
- Independent Ambulation

Brace: Brace for ambulation only (POD 1 - Week 4)

Weight Bearing: As tolerated two crutches (approx. 50% WB)

Swelling/Inflammation Control:
- Cryotherapy
- Compression Bandage
- Elevation & Ankle Pumps

Range of Motion:
- Full passive knee extension
- Flexion to 45 degrees (Day 1 to 4)
- Flexion to 60 degrees (Day 5)
- PROM and gentle AAROM only

Muscle Retraining:
- Quadriceps setting isometrics
- Straight Leg Raises (Flexion)
- Hip Adduction/Abduction
  * NO active Knee Extension

Flexibility:
- Hamstring and Calf Stretches
- PROM/AAROM within ROM limitations

II. ACUTE PHASE (Week 2-4)

Goals:
- Control swelling and pain
- Promote healing of realignment tibial tuberosity
- Quadriceps Strengthening

Brace: Continue brace for ambulation only
- Discontinue brace (week 4)

Weight Bearing: Progress WBAT (2 crutches for 4 weeks)

Swelling/Inflammation:
- Continue use of cryotherapy
- Compression bandage
- Elevation

Range of Motion:
- PROM/AAROM exercises
- Range of Motion 0-75 degrees (Week 1-3)
- Range of Motion 0-90 degrees (Week 4)
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ACUTE PHASE - Continued:

**Muscle Retraining:**
- Electrical muscle stimulation to quads
- Quad Setting Isometrics
- Straight Leg Raises (flexion)
- Hip Adduction/Abduction
- Hip Extension
  - Gentle submaximal isometric knee extension (multi-angle)

**Week 4:**
- Light Leg Press
- Vertical Squats (no weight)

**Flexibility:**
- Continue Hamstring, Calf Stretches

III. SUBACUTE PHASE - “MOTION” PHASE (Week 5-8)

**Goals:**
- Gradual improvement in ROM
- Improve muscular strength and endurance
- Control forces on extension mechanism

**Weight Bearing:**
- One crutch (week 4-6)
- Discontinue crutch week 6

**Range of Motion:**
- PROM 0-115 degrees (week 5)
- PROM 0-125 degrees (week 6)
- PROM 0-125/135 degrees (week 8)

**Exercises:**
- Continue electrical muscle stimulation to quadriceps
- Quadriceps setting isometrics
- Hip adduction, abduction, and extension
- Vertical Squats
- Leg Press
- Knee Extension Light (0-60 degrees)
- Bicycle (week 6-8)
- Pool Program [walking, strengthening (when able)]

**Flexibility:**
- Continue all stretching exercises for LE

IV. STRENGTHENING PHASE (Week 9-16)

**Goals:**
- Gradual improvement of muscular strength
- Functional activities/drills

**Criteria To Progress to Phase IV:**

1. ROM at least 0-115 degrees
2. Absence of swelling/inflammation
3. Voluntary control of quads

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Exercises:
- Vertical Squats (0-60 degrees)
- Wall Squats (0-60 degrees)
- Leg Press
- Forward Lunges
- Lateral Lunges
- Lateral Step-ups
- Knee Extension (60-0 degrees)
- Hip Adduction/Adduction
- Bicycle
- Stairmaster®

V. RETURN TO ACTIVITY PHASE

Goal: Functional return to specific drills

Criteria to Progress to Phase V:

1. Full Non-Painful ROM
2. Appropriate Strength Level (80% or greater of contralateral leg)
3. Satisfactory clinical exam

Exercises: Functional Drills
            Strengthening Exercises
            Flexibility Exercises