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ORTHOPAEDIC SURGERY | SPORTS MEDICINE

Rehabilitation Protocol:
Posterior Cruciate Ligament Reconstruction

Precautions

- NO active knee flexion and open chain hamstring isometrics x8 weeks
- Knee flexion during weightbearing exercise limited to 70 degrees until 16 weeks postop, then progressed*
- Avoid open chain isolated hamstring contractions for first 16 wks after surgery*

Phase I: 0-2 weeks

- Brace:
> Knee immobilizer/Hinge knee brace in extension for 3-5 days until good quadriceps control
> Then transition to Dynamic PCL brace (to be used for minimum 6 months)
> Brace in extension for sleeping
- ROM: Prone only: passive flexion 0-90 degrees, active assisted extension 70 to 0 degrees
- Weightbearing: NWB in brace at all times in extension for sleeping
    - Exercises:
    - Patella mobilization
    - Towel extensions
    - Prone hangs
    - Straight leg raise supine with brace locked at 0 degrees
    - Quadriceps isometrics at 60 degrees

Phase II: 2-6 weeks

- Brace: Dynamic PCL brace (to be used for minimum 6 months)
- ROM: Prone only: passive flexion 0-90 degrees, active assisted extension 90 to 0 degrees
- Weightbearing: NWB in brace, in extension for mobilizing and sleeping
- Exercises:
    - Short crank (90mm) ergometry
    - Straight leg raises (all planes)
    - Multiple-angle quadriceps isometrics: 60 to 20 degrees

Phase III: 6-12 weeks

- Brace: Dynamic PCL brace (to be used for minimum 6 months)
- ROM: progress slowly to full
- Weightbearing: progressive weightbearing: TTWB (50%) to PWB (75%) with crutches. Can D/C crutches when gait is non-antalgic (>8 wks) in Dynamic PCL brace with goal of full WB by ~8 weeks post-op.
- Exercises:
    - Initiate forward step up program (6-8 weeks) after patient can tolerate non-antalgic gait pattern for 20 minutes of walking
    - Stationary bike with low resistance settings and leg presses to a maximum of 60 deg flexion

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- Leg press, mini-squats (60-0 degree arc)
- Standard ergometry (if knee ROM >115 deg)
- AAROM exercises
- Stairmaster (8 wks+)
- Proprioception training (Prop board, BAPS)
- Aquacisor (gait training)
- Retrograde treadmill ambulation
- Initiate step down program (8-10 weeks)

Phase IV: 12-20 weeks

- Brace: Dynamic PCL brace (to be used for minimum 6 months)
- ROM: full
- Weightbearing: WBAT in Dynamic PCL brace
- Exercises:
  - AAROM exercises
  - Knee flexion during weightbearing exercise limited to 70 degrees until 16 weeks postop, then progressed
  - Avoid open chain isolated hamstring contractions for first 16 wks after surgery
  - Leg press/squats (70 to 0 degree arc)
  - Proprioception training (Prop board, BAPS)
  - Lunges
  - Advanced proprioception training (perturbations)
  - Agility exercises (sport cord)
  - Versaclimber
  - Retrograde treadmill jogging
  - Quadriceps stretching

Phase V: 20-26 months

- Brace: Dynamic PCL brace (to be used for minimum 6 months)
- ROM: full
- Weightbearing: WBAT in Dynamic PCL brace
- Exercises:
  - Start forward jogging (if descend 8" step satisfactorily)
  - Continue lower extremity strengthening, flexibility, proprioceptive & agility programs
  - Initiate plyometric program (if sufficient strength base)
  - Functional hop test (goal >85% contralateral)

Phase VI: 26+ weeks

- Brace: Dynamic PCL brace can be discontinued if kneeling stress x-rays demonstrate <2mm of difference
- ROM: full
- Weightbearing: WBAT
- Exercises:
  - Continue lower extremity strengthening, flexibility, proprioceptive & agility programs
  - Advance plyometric program
  - Advance agility and sport-specific program

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- Return to sport guided by MD clearance, typically ~12 months postop after functional sports test