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PCL & PCL/ACL Reconstruction
Post-surgical Rehabilitation Protocol

GENERAL GUIDELINES:

- No open chain hamstring work
- Caution against posterior tibial translation (gravity, muscle action)
- No CPM
- PCL with posterolateral corner or LCL repair follows different post-op care, i.e., crutches x 3 months
- Resistance for hip PREs placed above knee for hip abduction, adduction. Resistance may be distal for hip flexion
- Supervised physical therapy takes place for approximately 3-5 months **post-op**

GENERAL PROGRESSION OF ACTIVITIES OF DAILY LIVING (ADLs):

Patients may begin the following activities at the post-op dates listed (unless otherwise specified by the physician):

- Bathing/showering without brace (surgical incisions should be healed before immersion in water): 1 week post-op
- Sleep without brace: 8 weeks post-op
- Driving: 6-8 weeks post-op
- Full weightbearing without assistive devices: 8 weeks post-op (With physician clearance)

PHYSICAL THERAPY ATTENDANCE:

The following is an approximate schedule for supervised physical therapy visits:

- Phase 1: 0 to 1 month: 1 x week
- Phase II: Ito 3 months: 2-3 x week
- Phase III: 3 to 9 months: 2 x month
- Phase IV. 9 to 12 months: I x month

REHABILITATION PROGRESSION

The following is a general guideline for progression of the rehabilitation program following PCL or PCL/ACL reconstruction. Progression through each phase should take into consideration patient status (e.g., heating, function) and physician advisement. Please consult the attending physician if there is uncertainty regarding the advancement of a patient to the next phase of rehabilitation.

PHASE I

Begins immediately following surgery and lasts approximately one month.

Goals:

1. Protect healing bony and soft tissue structures
2. Minimize the effects of immobilization through:
   - Early protected range of motion (protect against posterior tibial sagging)
   - PREs for quadriceps, hip and calf with an emphasis on limiting patellofemoral joint compression and posterior tibial translation
3. Patient education for a clear understanding of limitations and expectations of the rehabilitation process

Brace:

Locked at 0 degrees for one week.
At one week post-op, the brace is unlocked for passive range of motion performed by a physical therapist or athletic trainer.
Technique for PT/AT assisted ROM is as follows:

PT/AT assisted knee flexion ROM: Patient supine - for PCL patients: maintain anterior pressure on proximal tibia as knee is flexed. For combined PCL/ACL patients, maintain neutral position of proximal tibia as knee is flexed. It is important to prevent posterior tibial sagging at all times.

Patients will be instructed in self administered PROM with the brace on with emphasis on supporting the proximal tibia.

Weightbearing Status:WBAT with crutches, brace is locked.
Special Considerations:Pillow under proximal posterior tibia at **rest to prevent** posterior sag.
Ther. Ex.:

First post-operative week:

- Quad Sets
- SLR
- Hip AB/AD
- Hip Alphabet
- Ankle Pumps

Add at first post-op visit:

- Hamstring and calf stretching
- Calf press with Theraband progressing to standing calf raises with full knee extension
- Standing hip extension from neutral
- Continue exercises as above
- Note: Functional Electrical Stimulation may be used for trace to poor quad contraction

PHASE II

Begins approximately one month post-op, and extends to the 12th post-op week.

Expectations for advancement to Phase II:

1. Good quad control (good quad set, no lag with SLR)
2. Approximately 60 degrees of knee flexion
3. Full knee extension
4. No signs of active inflammation

Goals:

1. Increase range of motion (flexion)
2. Restore normal gait
3. Continue quadriceps strengthening and hamstring flexibility

Brace.

4 - 6 weeks: Brace is unlocked for controlled gait training only (patient may ambulate with brace unlocked while attending physical therapy or when at home)

6 - 8 weeks: Brace is unlocked for all activities

8 weeks:Discontinue brace as allowed by physician

WB Status:

4 - 8 weeks: WBAT with crutches

8 weeks:May d/c crutches if patient exhibits:

No quad lag with SLR
Full knee extension
Knee flexion 90-100 degrees
Normal gait pattern (patient may utilize one crutch or cane until normal gait is achieved)

Ther. Ex.:

4 - 8 weeks: When patient exhibits independent quad control, may begin open chain extension

Wall slides (0 to 45 degrees)
Begin isometric, progress to active against body weight. Progress to minisquats, etc.
Eagle 4-way hip for flexion, AB, AD, ext from neutral with knee fully extended
Ambulation in pool (work on restoration of normal heel-toe gait pattern in chest deep water)

8 - 12 weeks: Stationary bike: Foot is placed forward on the pedal without use of toe clips to minimize hamstring activity. Sent slightly higher than normal
Closed kinetic chain terminal knee extension utilizing resisted band or weight machine. Use caution to place point of resistance to minimize tibial displacement
Stairmaster
Balance and proprioception activities (e.g., single leg stance)
Seated calf raises
Leg press. Knee flexion should be limited to 90 degrees during exercise

PHASE III

Begins approximately three months post-op, and extends to nine months post-op.
Expectations for advancement to Phase III:

1. Full, pain-free range of motion. Note that it is not unusual for flexion to be lacking 10-15 degrees for up to 5 months post-op
2. Normal gait
3. Good to normal quadriceps strength
4, No patellofemoral complaints

S. Clearance by physician to begin move concentrated closed kinetic chain progression

Goals:

1. Restore any residual loss of motion that may prevent functional progression
2. Progress functionally and prevent patellofemoral irritation
3. Improve functional strength and proprioception utilizing closed kinetic chain exercises
4. Continue to maintain quadriceps strength and hamstring flexibility

Ther. Ex.:

Continue closed kinetic chain exercise progression
Treadmill walking
Jogging in pool with wet vest or belt
Swimming - no breaststroke

PRASE IV-.
Begins approximately nine months post-op and extends until the patient has returned to work or desired activity.
Expectations for advancement to Phase IV:

1. Release by physician to resume full or partial activity
2. No significant patellofemoral or soft tissue irritation
3. Presence of the necessary joint range of motion, muscle strength and endurance, and proprioception to safely return to work or athletic participation

Goals:

1. Safe and gradual return to work or athletic participation
   This may involve sports specific training, work hardening or job restructuring as needed
   Patient education is essential to provide the patient with a clear understanding of their possible limitations
2. Maintenance of strength, endurance and function

Ther. Ex.:

- Cross-country ski machine
  Sports specific functional progression which may include, but not be limited to:
  - Slide Board
  - Job/Run Progression
  - Figure 8, Carioca, Backward Running, Cutting
  - Jumping (Plyometrics)
- Work hardening program as directed by physician prescription