Anterior Cruciate Ligament Reconstruction

Autograft

Post-Operative Rehabilitation Protocol

General Considerations:

- Timing and prognosis are approximate and will depend on many factors including but not limited to surgical complexity, compliance with recommendations made by Surgeon and Physical Therapist, individual physiological factors, and positive mental outlook
- Protocols are not absolute and clinical judgment should be used in each individual case to determine best practices for favorable outcomes.
- Protocols are not to be substituted for care under a Physical Therapist's supervision.

Goals/Focus/Precautions:

- Brace worn all the time, except to bathe. Brace will be locked in extension at 0 degrees. Crutches or a walker are used to assist.
- Emphasis on full extension in the first few weeks post operatively, equal to the opposite side as soon as possible.
- No direct palpation or mobilization to incisions or portals until roughly 4 weeks post-op.
- Special attention to stabilization of the patella by engaging the vastus medialis oblique (VMO).
- Focus on lumbopelvic stabilization in all planes of motion and during all transfers.
- No resisted leg extension machines at any point during the rehabilitation process.
- No cutting, twisting or pivoting activities, until cleared to do so.
- Patient should be aware that healing, remodeling, and tissue maturation occur for well up to a year post operatively.

Phase I – (Week 1-2): Maximal protection phase

Goals: Decrease pain and edema, range of motion 0-90 degrees. Pain <3/10. Minimal edema present. Brace locked in extension at zero degrees at all times except during bathing.

M.D./ P.A./ Nurse visit after hospital discharge to change dressings and review home exercise program.

- Icing, elevation, and edema control are especially important during the first few days after surgery. (20 minutes every hour)

Manual: soft tissue treatments to quadriceps, posterior muscle groups, suprapatellar pouch, popliteal fossa, iliotibial band and adjacent tissues. Extensive patellar mobilizations (caution if patellar autograft was used).

Exercises: seated edge of bed knee dangle in flexion, propped knee extension. Initiate quadriceps/gluteal sets, hip abduction, heel raises, gait training, balance/proprioception, straight leg raise with quad set. Hamstring sets if a hamstring graft was not used).

Phase II –(Week 2-4): Early Post-Operative Phase

Goals: Minimal to no edema, active range of motion equal extension to uninvolved side and flexion to 90 degrees. Weight bearing as tolerated with the brace locked in extension at zero degrees. Brace locked in extension at zero degrees at all times except during bathing. May unlock the brace during ambulation if no quad lag is present and the therapist and/or MD approves. Single leg balance 60 seconds on a level surface.

Nurse/PA visit at 14 days post-op for suture removal and check up

Manual: Continue with soft tissue treatments, effleurage for edema. Extensive patellar mobilization. Respect either healing hamstring or patellar harvest site.

Exercise: Range of motion and functional strengthening exercises. Core training

Phase III – (Week 4-6): Intermediate Post-Operative Phase

Goals: Improved range of motion within 15 degrees to the uninvolved leg. Hip, knee and ankle strengthening. Bicycling with minimal resistance for 20-30 minutes (seated), walking for 30 minutes, Elliptical, or water walking (no swimming).

- M.D. visit at 4 weeks post-op.

Manual: Soft tissue mobilization, Apply direct scar tissue mobilizations, may use instruments and tools

Exercise: Emphasis on stretching periodically throughout the day to bilateral lower extremities, increase intensity of resistive exercise, introduction of eccentric lowering exercises, increase single leg strength and single leg proprioceptive training.

Phase IV- (Week 6-10): Late Post-Operative Phase

Goals: Brace should be discharged. Activities should be pain free, Able to descend stairs with reciprocal gait, able to hold a double leg squat for >1 minute. Bike for >30 minutes with moderate resistance, Elliptical with interval training, Flutter kick swimming (no breast stroke kick, no flippers).

Manual: Soft tissue mobilization and joint mobilization as needed.

Exercise: Additional of training in the lateral plane. (no cutting, no pivots)

Phase V – (Week 10-16): Training for Sport phase

Goals: Criterion based sport re-entry assessment

Manual: Only if needed.

Exercises: Pre-running program begins at 3 months post-op, bilateral low-level jumping exercises, continue with strengthening, endurance and add sport specific training drills.

Phase VI – (Week 16+): Return to Sport phase

Goals: Initiate sagital plane plyometrics, work towards single leg plyometrics. Sport specific clearance by MD prior to returning full athletic participation.

Criterion for advancement: After 12 weeks, and once a patient reaches 80% strength, effusion is trace or less, and patient can demonstrate an understanding of "soreness rules", a running progression can commence (all patients athletes or not).

Exercise: Once running program is initiated, implementation of jump training, acceleration and deceleration drills, changing directions, agility training, education of "at-risk" sports, at 6 months add lateral plyometrics, agility ladder, etc.