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Anterior Cruciate Ligament (ACL) Hamstring Graft Rehabilitation Protocol

Pre-Op Instructions

1. Gait training instruction with crutches.
2. Instruction in immediate post-op exercises.

Post-Op: Day of surgery at home.

1. Hinged brace locked at 0° or straight leg brace.
2. Ice & elevation of knee. Compression wrap should be worn to control swelling.
3. Do not allow incisions to get wet while bathing.
4. Range of motion exercises:
 - a. Ankle range of motion (ABC's),
 - b. Heel Slides, and
 - c. Passive Patellar Mobilization.
4. Begin strengthening exercises as tolerated:
 - a. Quadriceps and hamstring sets,
 - b. Straight Leg Raises (SLR): Supine, Abduction, Adduction, Prone,
 - c. Seated knee extension, hip flexion, and terminal knee extension,
 - d. Partial weight bearing to tolerance with crutches, and
 - e. Well body exercises.
 - f. **No Active Hamstring Flexion Exercises for 4 weeks (Passive or Active-Assisted Only.)**
5. Ice before and after exercise and 20 minutes every 2 hours while awake.

Post-Op: Day 1

1. Continue ice, elevation, and compression wrap.
2. Continue range of motion exercises 2 - 3 times per day and add:
 - a. Stationary bike riding with seat height as low as tolerable with low resistance.
3. Continue strengthening exercises and add:

- a. Heel raises with balance assistance, and
 - b. Partial squats with balance assistance.
4. Ice before and after exercises and 20 minutes every two hours while awake.

Post-Op: Day 2 - 7

1. Continue ice and elevation.
2. Discontinue crutches no later than day three.
3. Continue range of motion exercises.
4. Continue strengthening exercises by utilizing PRE principle and add:
 - a. Weight to all SLR's, Knee Extension, Hip Flexion, and TKE, and
 - b. Side Step-Ups.
5. Ice before and after exercise and continue use of compression wrap.
6. Physician examination 6 - 8 days post-op for evaluation and suture removal.

Post-Op: Week 1 - 3

1. Continue ice and elevation as needed.
2. May shower or bathe after sutures have been removed.
3. Continue range of motion exercises (Full ROM allowed).
4. Continue strengthening exercises and add:
 - a. Gait training program on smooth, flat surface,
 - b. Squats progressing to Single-leg parallel squats,
 - c. Calf Raises progressing to Single-leg, then elevated heel raises,
 - d. Balance and proprioception activities, and
 - e. StairClimber exercises.
5. Ice before, if indicated, and after exercise.

Post-Op: Week 4 - 12

1. May apply lotion to incisions sites using heel of thumb and pressure as tolerated.
2. Continue range of motion exercises if needed.
3. Continue strengthening exercises utilizing PRE principles, add
 - a. Active Hamstring Curls,
 - b. Seated Leg Press 0° - 90°,
 - c. Squats in weight room with emphasis on form over weight,
 - d. Slide Board (week 6), and
 - e. Swimming with straight kicks only, after full wound healing.
4. Discontinue brace for daily living activities at 6 weeks post-op or as directed by physician.
5. Begin Jog program at 10 weeks post-op, with physician approval, on smooth flat surface, jog straight-a-ways only, walk curves. Slowly increasing time and/or distance. If painful or a limp is present, do not increase intensity until pain-free and gait is normal.

Post-Op: Week 12 - 6 Months

1. Continue active exercises.
2. Begin functional activities after fitting of functional brace:
 - a. Light plyometrics,
 - b. Begin light cutting or agility activities, and
 - c. Begin sport specific non-contact drills.
3. Return to non-contact, non-competitive individual sports (running, swimming, biking) at 3 to 4 months if contralateral strength is 85% or more.
4. Return to competitive sports (4 - 12 months) when:
 - a. Contralateral strength is 85% or greater,
 - b. Range of motion is equal,
 - c. Girth measurements are equal, and
 - d. Knee is functionally stable.

Meniscal Repair Restrictions

If a meniscal repair is performed in conjunction with an ACL Reconstruction, the following limitations are added:

1. Non-weight bearing with crutches for 4 weeks.
2. Knee Flexion limited to 0° - 90° for 4 weeks.
3. Walk/Jog program instituted at week 12 post-op only if adequate strength, coordination, and range of motion has been regained.

Patients heal at different rates, possess various pre-operative deficiencies, and require specific attributes to perform normal function. Due to these factors, this protocol must be individualized to each patient to allow for optimal return to desired activities.