TWIN CITIES ORTHOPEDICS

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POSTEROLATERAL KNEE RECONSTRUCTION REHABILITATION

Procedure

The popliteus tendon, the popliteofibular ligament, and fibular collateral ligament are reconstructed.

This protocol can be combined with cruciate reconstruction protocols adhering to all restrictions for each protocol.

Postoperative Restrictions

1. Patient remains in the knee immobilizer in full-knee extension at all times during the first 6 weeks postoperatively other than when working on knee range of motion (ROM) or performing quadriceps exercises.
2. Patient remains non-weight bearing for 6 weeks.
3. Patient to avoid tibial external rotation, and external rotation of the foot/ankle, especially in sitting for the first 4 months postoperatively.
4. Patient avoids open-chain hamstring exercises until 4 months postoperatively.

Postoperative Red Flags

Signs and symptoms of infection (excessive swelling, body temperature (fever greater than 101°, increasing redness around surgical incisions), calf swelling or tenderness, lack of full knee extension, complaints of knee instability, complaints of catching or locking, and increased effusion following activity/therapy.

Phase I

Weeks 1-2

1. Edema management: R.I.C.E. = Rest, ice, compression, elevation
2. Quadriceps sets and straight leg raises (SLR's) performed in the knee immobilizer. Quadriceps sets can be performed hourly up to 30 repetitions and SLR up to 30 repetitions 4 to 5 times per day.
3. Four times a day gentle passive and active assisted ROM exercises. Goal is 90° of knee flexion by the end of 2 weeks, and 0° of knee extension.
4. Core (lumbopelvic and hip) stabilization exercises in knee immobilizer that do not increase knee forces in varus, hyperextension, or tibial external rotation.

Weeks 3-6

1. Continue with passive and active assisted ROM exercises 4 to 6 times per day. Patient should achieve full extension at this time, and 120° of knee flexion.
2. Continue with quadriceps sets and SLR's.

Phase II

Weeks 7-12

1. Start partial weight bearing using crutches. Goal is to ambulate full weight bearing without crutches within 2 weeks. Patient must be walking without a limp to discharge crutches. Discontinue knee immobilizer if able to perform SLR without knee extension lag.
2. Initiate use of stationary exercise bike 105° if knee flexion ROM is achieved. Working on motion, beginning with 5 minutes every other day and increasing to 20 minutes daily, based on the knee's response to increased activity. If soreness or effusion is evident reduce time or days utilizing the bike.

Weeks 13-16

At this time the patient should have a normal gait pattern, without the presence of a limp or Trendelenburg sign.

The physician should be notified if the patient is lacking 5° or more of extension or has less than 110° of flexion.

1. Leg press up to 25% of the patient's body weight to fatigue. Knee flexion allowed to a maximum of 70°.
2. Squat rack/squat machine: using weight up to 50% body weight 10 repetitions, again not exceeding 70° of knee flexion. Slow progression to full body weight.
3. Closed kinetic chain exercise progression: double-limb squatting, lunges, single-limb squatting, etc. All exercises performed with less than 70° of knee flexion.
4. Daily biking or swimming. If swimming, no whipkicks or flip turns.

Phase III

Months 4-6 (Weeks 16-24)

Physical therapy goals: improve quadriceps strength and function, increase endurance, improve coordination, and improve proprioception.

1. Walking program: 20 to 30 minutes daily with a medium to brisk pace. Add 5 minutes per week.
2. Resistance can be added to bicycling as tolerated. Biking done 3 to 5 times per week for 20 minutes, and the lower extremities should feel fatigued post biking.
3. Advanced closed kinetic chain exercise progression: addition of unstable surface, movement patterns, resistance, etc.
4. Return to run program once patient is able to perform 20 repetitions of involved lower extremity single-limb squatting to greater than 60° of knee flexion with good control.
5. Plyometric progression: supported jumping, jumping, leaping, hopping, etc.

Month 7 and beyond (Week 28)

Goals: achieve maximum strength of operative extremity

1. Maintenance of home exercise program 3 to 5 times per week.

   Note: Physician will give clearance for cutting and pivoting and sports simulation activities as appropriate. Physician clearance is based on favorable outcomes with imaging studies, clinical exam findings, and functional progression with therapy. The coordination of care between the surgeon and physical therapy staff is critical for a complete assessment of patient function and a complete recovery from the surgery.

   Functional testing often performed at this time. A progressive return-to-play program is initiated if the limb symmetry index is greater than 85% with functional testing and satisfactory varus stress radiographs.