MEDIAL PATELLO-FEMORAL LIGAMENT RECONSTRUCTION

Patient Information & Exercise Folder

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Introduction

Patellofemoral dislocations are common, and tend to occur with as a result of quadriceps contraction across a flexed, valgus knee with the weight bearing tibia externally rotated compared to the femur. The dislocation usually reduces spontaneously or with muscle relaxing drugs.

Once the normal relationship of the patellofemoral joint is restored, patients may begin their rehabilitation. Non operative management is the recommended option following primary patellar dislocation

What are the options?

Non-operative treatment

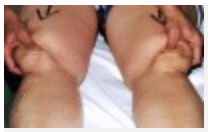
Conservative management focuses on concentric exercises to strengthen the quadriceps, and especially the vastus medialis, to prevent further instability.

Operative treatment

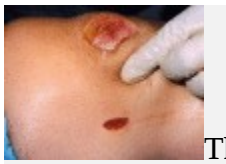
If the dislocation recurs after a trial of rehabilitation, operative intervention is considered, with the aim of restoring the soft tissue anatomy to normal. Ninety four percent of patients suffer a tear to the medial patellofemoral ligament (MPFL) following a patellar dislocation.

Operation

The patient is placed supine, with an above knee tourniquet, following the administration of prophylactic antibiotics. Skin preparation and sterile draping is performed in a standard fashion.


Examination under anaesthesia revealing marked patella instability.

The patella is approached through a 4 cm midline or medial incision. Usually hamstrings graft is harvested and reconstruction of the ligament is done.


The improved stability of the patella is confirmed after reconstruction. The incisions are shown.

Post-operative mobilisation regime consists of full weight bearing in a cricket pad splint. After two weeks, all restrictions are removed and the patient is allowed to return to normal activities over the course of three months.

Post-Surgery

After the surgery is completed, you will awaken in the operating room and be moved to the recovery area. You may have a drain at the surgical site in order to remove any excess blood. This drain will be discontinued the next morning (if applied).

Pain Control: You may take the prescribed medication as directed. You should expect to experience minimal to moderate knee discomfort for several days and even weeks following the surgery. You might need prescription narcotics for a few days following surgery and then can switch to over-the-counter medications such as Paracetamol or Ibuprofen.

Ice bags and elevation should be utilized both in the hospital and after discharge to decrease swelling and pain. Keep ice on for 20 minutes and off for 45 minutes every 4 hours. Utilize ice as much as you can during the first 10 days after surgery. Be careful not to burn your skin with excessive cold exposure.

At the completion of surgery, you will have a brace placed on your leg.

Physical Therapy (PT): You will receive PT prior to discharge from the hospital. PT will work on ambulation, functional mobility and leg exercises. You should be comfortable walking independently with crutches before leaving the hospital. You will be able to put as much weight as tolerated on your knee with brace locked in extension. You should participate in the home exercise program provided at the end of this packet until outpatient physical therapy is started.

If the bandage is draining, reinforce it with additional dressings for the first 48 hours. After 48 hours remove the bandage leave the steri-strips in place (Contact GP practice/ Hospital ward). If drainage continues or restarts after 3 days please call GP practice / Hospital.

You may shower on post up day one. Keep incision covered when showering for up to three days post-op. You may shower with the wound exposed once the wound is completely dry.

Skin numbness often occurs around the incision. This usually returns but may be permanent

Eat a regular diet as tolerated and please drink plenty of fluids.

First post-op appointment is 10-14 days after the surgery.

You may drive once you establish full control of your extremity (able to perform a straight leg raise, etc.). If your right knee was operated on, this may take a week or more to achieve

Call your GP / the hospital / my secretary for Temperature >102 degrees, excessive swelling, pain or redness around the incision sites.

Plan at least 2-3 weeks away from work or school. Utilize this time to decrease swelling and participate in your home exercise program. You may be able to resume work once the pain and swelling resolves (this varies based on job activity).

Outcomes/Expectations: It may take from nine months to a year before patients notice significant improvement from their pre-operative condition. Most patients report 80-90% pain relief at this time
What are the risks?

Risks are rare and involve: Compartment syndrome, blood clots (DVT), infection, complex regional pain syndrome and failure of repair.

MPFL Repair Rehabilitation Protocol

I. IMMEDIATE POST-OPERATIVE PHASE (Week 1)
Goals: Diminish swelling/inflammation (control hemarthrosis)
Initiation of quadriceps muscle training
Independent Ambulation

Weight Bearing: As tolerated with crutches and brace locked at 0-30 degrees of flexion
Swelling/ Inflammation Control: Cryotherapy, NSAIDS, Elevation & Ankle Pumps
Range of Motion: ROM to 30 degrees of flexion in brace
Muscle Retraining: Quadriceps isometrics, Straight Leg Raises, Hip Adduction
Flexibility: Hamstring Stretches, Calf Stretches

II. ACUTE PHASE (Week 2-6)
Goals: Control swelling/inflammation
Gradual Improvement in ROM
Quadriceps Strengthening (Especially VMO)
Note: Rate of progression based on swelling/inflammation.
Weight Bearing: Discontinue crutches when appropriate, Progress WBAT with brace.
Swelling/Inflammation: Cryotherapy, NSAIDS, Elevation and Ankle Pumps
Range of Motion: Rate of progression based upon swelling/inflammation.
At least 60 degrees flexion (Week 2)
At least 90 degrees flexion (Week 4)
Full flexion (Week 6-8)
Muscle Retraining: Electrical muscle stimulation to quads
Quad Setting Isometrics
Straight Leg Raises (flexion)
Hip Adduction
Knee Extension 60-0 degrees, painfree arc
* Bicycle (Stationary, in brace) if ROM/Swelling permits

Proprioception Training
Flexibility: Continue Hamstring, Calf Stretches
Initiate quadriceps muscle stretching

III. SUBACUTE PHASE - MODERATE PROTECTION (Week 6-12)
Goals: Eliminate any joint swelling
Improve muscular strength and control without exacerbation of symptoms.
Functional exercise movements
May discontinue brace
Criteria to Progress to Phase III:
1. Minimal inflammation/pain
2. ROM (0-near full flexion)
3. Strong quadriceps contraction
Exercises: Continue muscle stimulation to quadriceps (if needed)
Quadriceps setting isometrics
4 way Hip Machine (hip adduction, abduction, extension, and flexion)
Lateral Step-Ups (if able)
Front Step-Ups (if able)
Squats against wall (0-60 degrees)*
Knee Extension (90-0 degrees), painfree arc
Bicycle
Pool Program (walking, strengthening, running)*
Proprioceptive Training.
Flexibility: Continue all stretching exercises for LE
Swelling/Inflammation: Continue use of ice, compression, and elevation, as needed.

IV. ADVANCED PHASE - MINIMAL PROTECTION (Week 12-16)
Goals: Achieve maximal strength and endurance.
Functional activities/drills
Criteria To Progress to Phase IV:
1. Full Non-Painful ROM
2. Absence of swelling/inflammation
3. Knee extension strength 70% of contralateral knee.
Exercises: Wall Squats (0-70 degrees) painfree arc
Vertical Squats (0-60 degrees)*
Leg Press
Forward Lunges
Lateral Lunges
Lateral Step-ups
Front Step-ups
Knee Extension, painfree arc
Hip Strengthening (4 way)
Bicycle
Stairmaster®
Proprioception drills
Sport Specific functional drills (competitive athletes)

Jogging Program
Continue all stretching
Continue use of ice as needed

V. RETURN TO ACTIVITY PHASE (Week 16-20)
Goal: Functional return to work/sport
Criteria to Progress to Phase V:
1. Full Non-Painful ROM
2. Appropriate Strength Level (80% of greater of contralateral leg)
3. Satisfactory clinical exam
Exercises: Functional Drills
Continue Jogging/Running Program
Strengthening Exercises (selected)
Flexibility Exercises
* If patient is able to perform pain free.