PATELLOFEMORAL RECONSTRUCTION - POST OPERATIVE PROTOCOL

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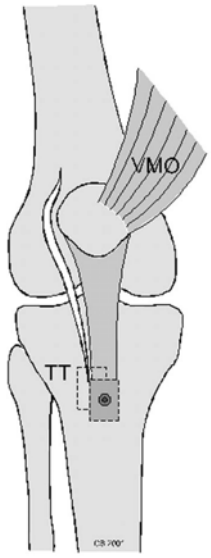
PATELLOFEMORAL RECONSTRUCTION

OPERATIVE TECHNIQUE:



Surgery involves all of the following:

1. A "lateral release" of the lateral structures is performed to decrease lateral pull on the patella.

2. Tibial tubercle (TT) is transferred medially, distally and anteriorly.

3. A "VMO advancement" is performed to move this muscle distally and laterally across the patella to improve its mechanical efficiency.

4. Patella chondroplasty (if necessary) to repair any lesions that may be present on the back of the patella.

INDICATIONS FOR SURGERY:

1. Recurrent dislocations

2. Recurrent subluxations

3. Anterior knee pain with patella maltracking

(NB. Surgery is NOT indicated for anterior knee pain with normal patella tracking.)

PATIENT OUTCOMES:

Results show that 79%[1] of patients receiving a patellofemoral reconstruction had a good/excellent outcome while 84%[1] said they would have the surgery again.

89%[1] of all patients returned to recreational sport. Patients with recurrent dislocation or subluxation had slightly better outcomes than those with anterior knee pain and maltracking. 2%[1] of patients had persistent dislocation following surgery.

Persistent anterior knee pain is reported as the most common problem.

1. Palmer et al. "Surgical Reconstruction of Severe Patellofemoral Maltracking". Clin Orthop, 418:1-7, 2004.

POST OPERATIVE PROTOCOL:

The following protocol is aimed at providing a guideline for physiotherapists who are overseeing the rehabilitation of patients who have undergone a patellofemoral reconstruction. The programme may need modifications for individual patients depending on the following variables:

1. Operative technique can vary from patient to patient
2. Presence of associated pathology ie. Chondral damage, osteoarthritis
3. State of quadriceps prior to surgery
4. Instability in the opposite knee
5. Presence of congenital predisposing factors

Bony:	Shallow femoral groove
	Genu valgum
	Patella dysplasia
Biomechanical:	Femoral anteversion
	Tibial torsion
	Overpronated feet
	Large Q angle
Soft tissue:	Tight lateral structures
	Weak VMO
	Patella alta

Some of these factors can be modified while others cannot.

Always check the operation report for each patient and check with Dr Cross if there is any concern or uncertainty.

The programme is divided into 3 stages.

Stage 1	0-6 weeks	Restricted mobilisation
Stage 2	6-12 weeks	Restore normal gait, control and balance
Stage 3	3 – 6 months	Functional control, proprioception and activity specific strengthening

STAGE 1 0 – 6 weeks

RESTRICTED MOBILISTATION

AIMS:

1. Immediate protection post operatively
2. Reduce swelling
3. Regain VMO activation and control
4. Gradually regain range to 90 degrees
5. Normalise gait - progress to FWB as control allows

RESTRICTED MOBILISATION:

A limited motion knee brace is used. The brace is locked in full extension for the first 10 days. The brace is increased to 30 degrees at 10 days, then to 60 degrees at 3 weeks, then to 90 degrees at 5 weeks. The brace is removed at 6 weeks. Dr Cross will advise if this regime is to be modified.

POTENTIAL COMPLICATIONS:

1. Infection
2. DVT
3. Arthrofibrosis
4. Total inhibition of VMO with subsequent "cheating"

PHYSIOTHERAPY GUIDELINES:

1. Regain VMO reactivation and control at allowable ranges
2. Biofeedback for re-education of VMO
3. Muscle stimulator to assist reactivation of VMO
4. Masman pressure pump
5. Ice packs
6. Releases to tight lateral structures
7. Tape if necessary for pain
8. Utilize and re-educate proximal stabilisers
9. Gait re-education

STAGE 2. 6- 12 weeks

RESTORE NORMAL GAIT, CONTROL AND BALANCE

AIMS:

1. Regain control before progressing to strength
2. Establish good proximal / pelvic stability
3. Gait should be pain free and the patient should be regaining confidence in their knee by the end of stage 2

POTENTIAL COMPLICATIONS:

1. Arthrofibrosis
2. Poor VMO activation
3. Persistent effusion
4. Persistent Anterior Knee Pain

PHYSIOTHERAPY GUIDELINES:

1. Biofeedback. Continue to use for more dynamic activities eg. steps, balance on one leg
2. Resistance exercises. May be introduced carefully. For Quads use inner range initially where PF joint reaction forces are less.
3. Closed chain exercises. These emphasize functionality, encourage co-contraction of quads and hamstrings and incorporate pelvic stability with knee control.
4. Balance exercises for early proprioception.
5. Pelvic stability needs to be incorporated.
6. Foot mechanics may need to be addressed. ie. orthotics
7. Assess tightness of lateral structures and treat accordingly.
8. Tape if necessary.
9. Masman pressure pump.
10. Ice

STAGE 3. 3 – 6 months

FUNCTIONAL CONTROL, PROPRIOCEPTION AND ACTIVITY SPECIFIC STRENGTHENING

AIMS:

1. Dynamic control / proprioception
2. Regain patient's confidence in their knee (no feelings of instability)
3. No Anterior Knee Pain
4. Regain strength specific for patient's sport/activities

POTENTIAL COMPLICATIONS:

1. Poor VMO timing
2. Persistent pain
3. Persistent PF crepitus
4. Feelings of instability

PHYSIOTHERAPY GUIDELINES:

1. Biofeedback can still be useful especially for VMO timing.
2. Continue to reassess and monitor all predisposing factors which can be modified eg. tight lateral structures, pelvic stability, foot mechanics.
3. Assess need for continued taping or a stabilising brace.
4. Develop home and gym programme.
5. Activity /sport specific strengthening and agility exercises need careful consideration for each individual patient. Progress from in-line activities to lateral, to change of direction. Introduce impact loading / landing drills if appropriate. Break down skills in to components.
6. There will be limitations with certain pathologies ie. Chondral damage may dictate that running and jumping activities will never be appropriate.