



Hip Arthroscopy Post-operative Rehabilitation Protocol

Introduction

Since the early 20th century, when hip arthroscopy was regarded as being almost impossible to undertake, the procedure has developed in leaps and bounds. Presently there are many reasons why a surgeon might recommend hip arthroscopy to a patient. Some of these reasons are as follows:

1. To explain unexplained hip pain (diagnostic hip arthroscopy)
2. Removal of loose or foreign bodies
3. Repair of damaged articular cartilage (gristle)
4. Removal or repair of a torn acetabular labrum
5. Correction of femoroacetabular impingement
6. Management of damaged hip ligaments
7. Management of hip joint infection
8. Inflammation of the hip lining (synovitis)
9. Investigation of a painful joint replacement or hip resurfacing

Rehabilitation following Hip Arthroscopy is an essential part of full recovery. Ideally this rehabilitation should be carried out under the guidance of a physiotherapist.

This Rehab program has been designed to guide your physiotherapist through your rehabilitation as I think it should be done. All rehabilitation programs are flexible. Individual progress varies greatly, and this will require some modifications of the program at the discretion of your physiotherapist. Different techniques may also be used by your physio depending on available equipment, and your individual needs to meet the described aims.

Aims of Physiotherapy

Physiotherapy should ideally commence preoperatively. Patients who have a pain-free, mobile, healthy joint recover far quicker post operatively than those patients with acutely painful joints. It is ideal to learn the required exercises pre-operatively.

The treatment goals are:

1. Diminish post-operative pain and swelling
2. Restore full range of motion
3. Restore muscle tone and strength
4. Restore functional stability and strength
5. Maintain and develop aerobic conditioning
6. Proprioceptive retraining allowing a safe return to work and sport as soon as possible
7. Address pre-disposing conditions contributing to the hip pathology

This rehab program is based on the premise that education, retraining and strengthening of the Deep Hip Rotators (Quadratus Femoris, Obturator Internus, Superior and Inferior Gemelli) will accelerate the recovery.

The Deep Hip Rotators (DHR) have a short lever arm and therefore act as deep stabilisers of the hip. They provide dynamic stability of the hip throughout its ROM. Ideally the rehab process should be initiated preoperatively by educating the patient regarding the role of the DHR and the way in which the hip, pelvis and lumbar spine interact.

Brief Timeline:

Day 1	Begin physiotherapy
Day 10-14	Wounds usually healed enough to remain uncovered Can start swimming (no kicking) Can usually return to work for “light duties” if available Usually walking reasonably comfortably without crutches Commence DHR strengthening and retraining
Week 6	Can commence running in a straight line Can start hip stretches
Week 12	Commence sport specific training. Can start to jump. Return to sport as able

The Rehabilitation Program

Stage 1 Wound Healing

Day 1- Day 14

Aims

Adequate pain relief

Progressively stop using crutches

Decrease leg and joint swelling

Establish muscle control and aim for normal gait

Treatment Guidelines

- Weight bearing as tolerated, decreasing dependence on crutches
- Pain and swelling reduction techniques including
 - Ice
 - Co-contraction
 - Biofeedback and selective muscle stimulation if necessary
- Range of motion exercises
 - Stationary bike- start with seat high, low resistance
 - ROM exercises are encouraged only as comfort allows. Avoid pushing end range for initial 6 weeks
- Commence retraining and strengthening of the Deep Hip Rotators
 - Quadratus Femoris
 - Obturator Internus
 - Superior and Inferior Gemelli
- DHR contraction is best assessed prone. In equivocal cases, real time ultrasound can be used to assess contraction

Avoid gluteus medius strengthening.

Stage 2 Restore hip stability

Week 2- week 6

Aims

Continue to develop DHR retraining and strengthening

Restore hip and pelvic stability and strength with low load closed chain functional exercises

Develop good muscle control and early proprioceptive skills

Maintain cardiovascular fitness

Treatment guidelines

Advance DHR rehabilitation as able

After retraining prone, ensuring appropriate activation, progress to 4-point kneeling.

Resistance band should be included once accurate activation in 4-point kneeling is achieved

DHR retraining is encouraged in prone and 4-point kneeling at all stages

Assessment of lumbar-pelvic region

1) Assessment and manual therapy treatment as appropriate for articular restriction

in the lumbar spine or SIJ

2) Analysis of motor control around the lumbar spine and pelvis including accurate activation and timing of pelvic floor, multifidus and transversus, without substitution of more global muscles (such as external oblique or posterior pelvic floor and piriformis)

Assessment of the pelvic-hip region

1) Analysis of dynamic hip stability including single leg balance watching for excessive lateral shift or pelvic tilt that may indicate dysfunction with gluts control

2) Analysis of hip motor recruitment patterns watching for signs of excessive use of global muscles including adductors, TFL and hamstrings

A focus on low load and higher repetitions will help retrain motor control pattern and endurance.

Exercises can include:

Supine core activation with hip movements (such as pilates matwork; bent knee fallout, heel slides and single leg heel taps)

Low load tasks such as quarter and half squats

Lunges with pelvic and hip control, maintaining foot and knee alignment

Weight shift and transfer with pelvic and hip control in half squat, quarter squat and upright postures

Step ups with pelvic, hip and knee control

Steps downs with pelvic, hip and knee control

Gym equipment can be introduced

Stepper

Leg Press

Mini Trampoline

Stage 3 Proprioception

Weeks 6-12

Aims

Restore proprioception

Commence Psoas stretching

Commence Piriformis stretches

Progress functional exercises to include more challenges to pelvic and hip control

Continue addressing pre-disposing factors

Continue with DHR rehab

Treatment guidelines

Progress squats and lunges to include proprioceptive challenges such as air cushion or spin discs. Can include hand held weights to build strength.

Gradually increase gluteal challenges with the use of theraband (such as multidirectional leg movements in single leg balance). This is provided the patient can maintain accurate alignment and is not substituting with over active TFL or hamstrings

- Progress with resistance on gym equipment

Leg press

Hamstring curls

Stairmaster

Treadmill power walking

- Progress with strength training
 - Progress co-contractions to dynamic
 - Step lunges
 - Half squats
 - Wall squats
- Can begin jogging in straight lines on the flat
- Start cycling on a normal bicycle
- Progress with proprioceptive work
 - Lateral stepping
 - Slide board
 - Wobble board
 - Trampoline balance

Stage 4 **Sport specific**

Weeks 12-20

Aims

- Prepare to return to sport
- Incorporate more sport specific activities
- Introduce agility and reaction time into proprioceptive work
- Increase leg strength
- Develop patient confidence

Treatment guidelines:

Increase challenges to proprioception including single leg balance on air cushion or wobble board

Sports specific retraining with hip and pelvic control

- General strength work
 - Half squats with resistance
 - Leg press
 - Leg curls
 - Wall squats

Step work on progressively higher steps

Stepper and rowing machine

- Sport specific

Shuttle runs

Ball skills

Sideways running

Skipping rope

- Low impact step aerobics class
- Swimming can include using flippers
- Return to sport as able

Possible Complications

Infection

The patient complains of a constant, severe pain. The patient may be sweaty, ill, have a temperature and often a tense effusion.

Post operative haemorrhage

Results in a hot tender area over the proximal thigh. May be difficult to distinguish from infection.

Deep Venous Thrombosis

The patient has calf, popliteal, thigh or groin pain and tenderness associated with swelling. Should have a venous duplex performed if this concern exists

Stiffness

May occur at any stage of the rehabilitation. The causes include:

Arthrofibrosis

Complex regional pain syndrome

If any concerns please contact the rooms, the private hospital, or the orthopaedic registrar through the public hospital ASAP