Knee Arthroscopy Rehab Protocol

Generally, following knee arthroscopy, an intensive rehab approach can be taken. No major precautions or contra-indications are present and ROM and strength can be progressed as tolerated. This includes the following procedures: partial medial or lateral meniscectomy, debridement of cartilage and joint surfaces, removal of a loose body, plica excision, and lateral release.

One primary goal following surgery is to gain full passive knee extension. This, along with neuro-muscular quadriceps control, is the key to facilitate a normal gait pattern. Initially, focus should be on increasing VMO tone. Exercises should be geared toward quadriceps strengthening in a pain-free range. Until swelling is minimal and the patient has a normal gait, prolonged standing and walking should be limited.

Patellar mobilizations and scar massage are both necessary to regain full ROM. One may be back to regular activities at 3-4 weeks while others may take significantly longer. It is important to find out the pre-op status of the patient as this will help determine how fast the patient will progress post-operatively.

Following a lateral release, a slightly longer rehabilitation program is sometimes necessary. Advancement of exercises and activities is based on quadriceps tone. It is common for patients to have a persistent, large haemarthrosis (knee swelling). It is imperative to keep the IT band stretched out post-operatively. The gluteus muscles should also be stretched due to their insertion site at the lateral hip. In addition to stretching and soft tissue mobilization, medial patellar glides are beneficial to prevent excessive scarring at the ITB. Initially, hip abduction may need to be avoided following a lateral release – if it is painful to perform. If the medial patello-femoral ligament was torn and repaired during surgery, restrictions on ROM are necessary. Consult with Dr. Khatib to make sure the proper precautions are taken with these patients.

PHASE ONE (Weeks 1 and 2)

-After your surgery you will have inner dressings and an outer bandage. Please keep the outer bandage in place for the first 24hrs, after which this can be removed leaving the inner dressings intact. These dressings may have some blood on them; however I recommend leaving them intact until your review at the 2-week appointment. You may wash your knee after the bandages come off in the shower and if your dressings come off you can replace them with similar dressings that are easily obtainable from your local chemist of family doctor.

-For the first 48hrs you should control the swelling in your knee by applying cold packs for 10-20 min every 1-2hrs.

-You are able to immediately put full weight on your leg. If it is painful you may prefer the help of crutches or a walking stick, however these can be abandoned as soon as comfortable full weight bearing is tolerated. It is vitally important that full extension is achieved when weight bearing and not to walk with a flexed knee gait i.e. try to achieve normal gait pattern.

-The aim of the exercises at this stage is to achieve full range of motion (especially in extension) and regaining neuro-muscular quadriceps control. Exercises include:

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STRENGTH AND NEUROMUSCULAR CONTROL
Quad sets (10 x 10sec) – the more the better – at least 100/day SLR (Straight Leg Raises), calf raises and pain-free range

STRETCHING
Hamstring stretch – hold 30 seconds Gastroc stretch with towel – hold 30 seconds ITB stretch.

ROM (Goal during this phase is 0-90^{0})
Manual patella mobilisation – especially superior/inferior. Seated heel slides using towel. Supine heel slides. Prone hangs if needed to gain full extension

BALANCE
Weight shifting single limb stance

At your 2 week review you will have your wounds reviewed and sutures removed and the results of your arthroscopy will be explained to you.

PHASE TWO (Weeks 3-6)
By end of this phase, the patient should ambulate with normal gait, have good quads control, decreased swelling, and be able to ascend/descend stairs.

STRENGTH
Quad sets are continued until swelling is gone and quad tone is good. The patient is able to SLR.

Focus on weight distribution more on heel than toes to avoid overload on patella tendon Multi-direction hip ROM exercise – increase intensity as able.
Closed chain terminal knee extension (TKE).
Leg press
Step-ups – forward Step-overs
Wall slides Mini-squats – focus on even distribution of weight Calf raises Hamstring curls

CARDIO
Bicycle – do not perform until 110 degrees of flexion is achieved – do NOT use bike to gain ROM. Perform daily and increase resistance as able to work quad.

STRETCHING
Continue with HS, calf and ITB stretching

ROM (Goal is 0-125^{0})
Perform ntensive scar massage (using Sorbolene and vitamin E cream) at portals
Prone hangs (do not add weight to ankle)
Heel slides – seated and/or supine.
Continue with cycling, increasing duration and intensity

BALANCE
Single leg stance – even and uneven surface – focus on knee flexion using Plyoball or balnce board. Lateral cone walking with single leg balance between each cone.

MODALITIES
Continue to use ice following exercise

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PHASE THREE (Weeks 6-12)
Goals for this phase are full quad control and good quad tone; patient should be able to perform normal ADLs without difficulty. Exercises will be advanced in intensity based on quad tone – a patient who continues to have poor quad tone must not be advanced to activities that require high quad strength such as squats and lunges

STRENGTH
Continue with above exercises, increasing intensity as able
-Step-ups: forward and lateral; add dumbbells to increase intensity; focus on slow and controlled movement during the ascent and descent
-Squats or standing Lunges: forward and reverse; add dumbbells or med ball
Hamstring curls Swiss ball and foam roll hamstring exercises – supine bridge with knee flexion, bridge with HS curl.
-Single leg squats – bilateral and unilateral Single leg wall squats.
-Initiate lateral movements.
-Lunges, forward, backward, or side-step, lateral step-ups, step over hurdles

ROM (Goal is 0-140^{0})
Work to full ROM – continue with heel slides

BALANCE
Plyoball – toss – even and uneven surface squats on balance board/foam roll
Strength activities such as step-ups and lunges with dumbells

CARDIO
Cycle – increase intensity; single leg cycle maintaining 80 RPM Jogging/Plyos.
Begin to jog at a slow to normal pace focusing on achieving normal stride length and frequency. Initiate jogging for 2 minutes, walking for 1 until this is comfortable for the patient and then progress the time as able. Jogging should first be performed on a treadmill or track (only straight line jogs) and then progressed to harder surfaces such as grass and then asphalt or concrete. It is normal for the patient to have increased swelling as well as some soreness but this should not persist beyond one day or the patient did too much. Jump rope and line jumps can be initiated when the patient is cleared to jog. This can be done for time or repetitions and should be done bilaterally and eventually progressed to unilateral.

MODALITIES
Continue to use ice after exercises

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PHASE FOUR (Weeks 12-24)

-Exercises for strengthening should continue with focus on high intensity and low repetitions (6-10)
-Progress with stretching and strengthening program (2-3x/week)
-Progress jogging speed and distance
-Progress plyos: Sportsmetric program can be implemented Bilateral and unilateral plyos on shuttle Plyos can include squat jumps, tuck jumps, box jumps, depth jumps, 180 jumps, cone jumps, broad jumps, scissor hops
-Leg circuit: squats, lunges, squat jumps, skipping in place
-Quick feet on step – forward and side-to-side, ladder drills
Swimming – all styles

Landing from jumps is critical – knees should flex to 30^0 and should be aligned over second toe. Controlling valgus will initially be a challenge and unilateral hops should not be performed until this is achieved.

Initiate sprints and cutting drills. Progression: Straight line, figure 8, circles, 45^0 turns, 90^0 cuts

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