ADELAIDE ORTHOPAEDIC SPECIALISTS

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POST OPERATIVE PROTOCOL

ACL Reconstruction Rehabilitation Protocol

General Guidelines

- ACL reconstructions are usually performed on day-only basisor 1 night inpatient stay
- Supervised physical therapy commences immediately postoperatively.
- Patients should see their physical therapist as soon as practically possible. Supervised therapy continues for 6-12 months
- Braces are routinely used however may be necessary depending on other injuries or surgery performed
- Dr Awwad may alter time frames when indicated.

White compression stockings

You may stop wearing the white compression stockings after 24-48 hours . This compression stocking helps prevent a blood clot from forming in your legs. Once you are walking frequently you will no longer need the stocking . If you develop lower leg swelling, tenderness, and/or redness, please contact Dr Awwad's office or the hospital.

Dressings

The bulky encircling dressings (crepe bandage, velband and pads) may be removed the day after surgery. The small adhesive dressings should be left intact. To shower, cover the surgical knee and dressings with plastic cling wrap. Prior to discharge from hospital, an appointment will be made to see a nurse for a dressing change and wound check between 1-2 weeks post-operatively.

Ice and elevation

The leg should be intermittently elevated and an ice pack used for 72 hours post-operatively to assist with swelling and pain. Ice packs should be applied for 20-30mins/hr. After 72 hrs, ice packs are no longer required, although can be safely continued and their use is very helpful for pain and swelling.

Pain medications

The anaesthetist will individualise and organise the appropriate pain relief for patients. Commonly required medication are panadeine forte, tramadol, palexia and endone.

General progression of daily activities

- Driving
  - Left leg surgery 1 week for automatic cars, 4 weeks for manual cars
  - Right leg surgery 4 weeks
- Weight-bearing as tolerated immediately post-op
- Wean from crutches for ambulation by 4 weeks as patient demonstrates normal gait mechanics and good quad control as defined by absence of quadriceps lag.
- Return to work as directed by Dr Awwad based on work demands.

Precautions

Patients should contact Dr Awwad's office or the hospital the operation was performed in, if they develop high temperatures, worsening skin redness, worsening calf, knee or thigh pain and swelling and excessive bleeding or ooze from the incision sites.

Phase I - Immediately post-operatively to week 6

Goals

- Protect graft, graft fixation and meniscal repair
- Minimise effects of immobilisation
- Control inflammation/swelling
- Full active and passive extension/hyperextension range of motion. Caution: avoid hyperextension greater than 10°
- Restore normal gait on level surfaces

Weightbearing status and brace

- Weight-bearing as tolerated immediately post-op with crutches
- Wean from crutches for ambulation by 4 weeks as patient demonstrates normal gait mechanics and good quad control

Exercises

- Patellar mobilisation/scar mobilisation
- Heel slides
- Isometric Quad contractions (consider NMES for poor quad control)
- Prone assisted knee flexion
- Gastroc/Soleus, Hamstring stretches
- Gastroc/Soleus strengthening
- Closed Kinetic Chain Quadriceps strengthening activities as tolerated (wall sit, step ups, mini squats, leg press 90-30 degrees)
- Quadriceps isometrics at 60° and 90°
- If available, hydrotherapy for normalising gait, weightbearing strengthening, deep-water aqua-jogging for ROM and swelling (after dressings removed)
- Single leg balance, proprioception work (eg. wobble board, BOSU ball standing, standing eyes closed)
- Stationary cycling – initially for promotion of ROM – progress light resistance as tolerated

Phase II - Post-operative weeks 6 to 12

Criteria for advancement to Phase II

- Full extension/hyperextension
- Good quad control, SLR without extension lag
- Minimum of 90° of flexion
- Minimal swelling/inflammation
- Normal gait on level surfaces

Goals

- Restore normal gait with stair climbing
- Maintain full extension, progress toward full flexion range of motion
- Protect graft and graft fixation
- Increase hip, quadriceps, hamstring and calf strength
- Increase proprioception

Weightbearing status and brace

- Weight-bearing as tolerated
- Brace is no longer required

Exercises

- Continue with range of motion/flexibility exercises as appropriate for the patient
- Continue closed kinetic chain strengthening as above, progressing as tolerated – can include one-leg squats, leg press, step ups at increased height, partial lunges, deeper wall sits.
- Stairmaster (begin with short steps, avoid hyperextension)
- Elliptical machine for conditioning.
- Stationary biking- progress time and resistance as tolerated; progress to single leg biking
- Continue to progress proprioceptive activities – ball toss, balance beam, minitramp balance
- Continue hamstring, gastroc/soleus stretches
- Continue to progress hip, hamstring and calf strengthening
- If available, begin running in the pool (waist deep) at 8 weeks.

Phase III - Post-operative weeks 12-26

Criteria for advancement to Phase III

- No patellofemoral pain
- Minimum of 120 degrees of flexion
- Sufficient strength and proprioception to initiate running.
- Minimal swelling/inflammation

Goals

- Improve strength, endurance and proprioception of the lower extremity to prepare for sport activities
- Avoid over-stressing the graft
- Protect the patellofemoral joint
- Normal running mechanics
- Full range of motion

Exercises

- Continue flexibility and ROM exercises as appropriate for patient
- Knee extensions 90°-30°, progress to eccentrics
- Progress toward full weight-bearing jogging at 12 weeks.
- Begin swimming if desired
- Progressive hip, quadriceps, hamstring, calf strengthening
- Cardiovascular/endurance training via Stairmaster, elliptical, bike
- Advance proprioceptive activities

Phase IV - Post-operative months 6-9

Criteria for advancement to Phase IV

- No significant swelling/inflammation.
- Full, pain-free ROM
- No evidence of patellofemoral joint irritation
- Strength approximately 70% of uninvolved lower extremity per isokinetic evaluation
- Sufficient strength and proprioception to initiate agility activities
- Normal running gait

Goals

- Symmetric performance of basic and sport specific agility drills
- Single hop and 3 hop tests 85% of uninvolved lower extremity
- Quadriceps and hamstring strength at least 85% of uninvolved lower extremity per isokinetic strength test

Exercises

- Continue and progress flexibility and strengthening program based on individual needs and deficits.
- Initiate plyometric program as appropriate for patient's athletic goals
- Agility progression including, but not limited to:
  - Side steps
  - Crossovers
  - Figure 8 running
  - Shuttle running
  - One leg and two leg jumping
  - Cutting Acceleration/deceleration/sprints
  - Agility ladder drills
- Continue progression of running distance based on patient needs.
- Initiate sport-specific drills as appropriate for patient

Phase V - Begins at approximately 9 months post-op. Aim for full return to sports at 12 months post-op

Criteria for advancement to Phase V

- No patellofemoral or soft tissue complaint
- Necessary joint ROM, strength, endurance, and proprioception to safely return to work or athletics
- Physician clearance to resume partial or full activity

Goals

- Safe return to athletics/work
- Maintenance of strength, endurance, proprioception
- Patient education with regards to any possible limitations
- Injury prevention programme

Exercises

- Gradual return to sports participation
- Maintenance program for strength, endurance on an individual basis
- Commence ACL injury prevention programme (PEEP, FIFA 11+)

Criteria for return to sports

- No effusion
- Isokinetic quadriceps strength testing at 60°/s with less than a 10% deficit compared to the contralateral side
- Single leg hop for distance with >90% of contra-lateral side
- Triple hop for distance with >90% of contra-lateral side
- Triple crossover hop for distance with >90% of contra-lateral side
- On-field sports-specific rehabilitation fully completed
- Running t-test completed in less than 11 seconds

If you still have questions about your recovery

Please contact Dr Awwad's office prior to your surgical date at: drgeorgeadmin@aos.com.au

Sometimes we may miss a question that is important to you. If so, please feel free to email us your feedback so that we can improve our service to you and future patients – drgeorgeadmin@aos.com.au

Ask Dr Awwad to clarify your restrictions prior to surgery to avoid disappointment.

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