CASTLEVIEW CLINIC

PHYSIOTHERAPIST INFORMATION LEAFLET

ACL Rehabilitation – Mr Henry Bourke's Patients

Prehabilitation

- Aim to operate ONLY on pain-free and mobile knees. Range of movement should be normal or near normal and the joint should be quiet
- May take weeks or months
- Patients can better manage post-operative exercises if they have learned them pre-operatively
- Usually one session with the physio is enough prior to surgery.

Outline of procedure

A routine primary reconstruction would be a single incision arthroscopic procedure using a four-strand hamstring tendon graft from the ipsilateral knee and using AM portal femoral tunnel drilling. If the patient has had a revision procedure and or meniscal repair and/or microfracture the patient may be in a brace or on crutches for a period of time before their physio can start. These patients will have further instructions for their physio if this is the case. Fixation routinely is an endobutton to hold the graft in the femoral tunnel and a plastic (PEEK) interference screw in the tibial tunnel. Prior to final fixation the knee is gently extended to ensure no impingement. Thus post-op fixed flexion should not have a mechanical cause and can be overcome with work. The majority of patients can go home the day of their surgery and braces are not used routinely. The stitches for the skin are dissolvable.

STAGE 1 0-14 days RECOVERY

- The ACL sees minimal force in ADL and closed chain exercises
- Immediate weight-bearing decreases patello-femoral pain and aids quads recovery with no increase in laxity
- Bracing or CPM offers no advantage
- Range-of movement should be returning to normal slowly – concentrate on straightening the knee gentle
- Graft tissue is probably never stronger than it is in the first 2 weeks

- Decrease pain and swelling with ice, elevation, co-contractions and pressure pump
- Patients to achieve a fully straight knee by the end of the first week, gait re-training with full extension at heel strike will assist
- Exercise bike after day 3
- Gentle hamstring stretches to minimise adhesions
- Active hamstring strengthening begins with static weight-bearing co-contractions and progresses to active free hamstring contractions by day 14
- Resisted hamstring strengthening should be avoided for 6-8 weeks.

PRIVATE PATIENTS WILL USUALLY SEE MR BOURKE FOR THER FIRST FOLLOW-UP AT TWO WEEKS FOR A WOUND CHECK AND TO ENSURE ALL QUESTIONS HAVE BEEN ANSWERED

STAGE 2 2-6 weeks MUSCULAR CONTROL

- Wounds should be healed and patient must be off crutches
- Progress co-contractions for muscle control by increasing the repetitions, length of contraction and more dynamic positions e.g. two-leg quarter squats, lunges, stepping, elastic cord
- Introduce gym equipment gradually – step-machine, leg-press, mini trampoline, x-trainer
- If knee is still swollen continue with pressure-pump and ice
- Hamstring strengthening progresses with the increased complexity and repetition of co-contractions. Open chain exercises can commence although must be stopped if painful
- Hamstring pulls at this stage are normal but avoid hamstring straining particularly if painful
- Low resistance, high repetition weights will increase muscle endurance.

After week 6

- Eccentric hamstring strengthening (incl. hamstring curls) is progressed as pain allows
- Consider including body balance e.g. gluteal control, hamstring stretches, ITB, gastocs, soleus, lower back, abdominals to supplement.

PRIVATE PATIENTS WILL USUALLY SEE MR BOURKE AGAIN IN CLINIC AT 8-WEEKS.

STAGE 3 6-12 weeks PROPRIOCEPTOPN

- Aim to improve neuromuscular control and proprioception
- Progress co-contractions to more dynamic movements such as step lunges or half squats
- Proprioceptive work more dynamic e.g. lateral stepping, slide board etc.
- Can begin jogging in a straight line, ideally on treadmill from 8 weeks

- Progress resistance on gym equipment to increase power and speed of contraction
- Start cycling on normal bicycle
- Consider pelvic and ankle control plus cardiovascular fitness
- Solo sports such as cycling, swimming and jogging permitted out of gym when progress has been made and patient is sensible
- Open chain exercises can commence (if no PFJ symptoms) 40-90 degrees progressing to 10-90 degrees by 12 weeks
- Deficits in hip and postural control have been found to be strong predictors in graft rupture (Paterno, American Journal of Sports Med 2010).

STAGE 4 12 weeks-5 months NEUROMUSCULAR

- Begin to incorporate sports specific activities e.g. jumpers to practice landing techniques
- Progressing of strength work e.g. half squats with resistance, leg press and curls, wall squats, step-work on progressively higher steps, stepper and rowing machine
- Proprioceptive work should expand to include hopping and jumping activities and emphasise good landing technique
- Low impact and step aerobics classes can help to build confidence
- Pool work can include flippers
- Sports specific exercises:
  - Tennis – lateral step lunges
  - Skiing - slideboard, lateral box stepping and jumping, zigzag hopping
  - Football – ball skills, sideways/backwards running
  - Volleyball/netball/basketball – vertical jumps
- Commence PEP Program on youtube:
  https://www.youtube.com/watch?v=t_yz7yWLo5o
  (reference – Gilchrist et al American Journal of Sports Med 2008)
- Emphasise gluteal maximus strengthening which is a strong hip extender and internal rotator while in flexed hip posture.

STAGE 5 6-12 months SPORTS SPECIFIC

- Continued progression of plyometrics and sports specific drills
- Return to training and participate in skill exercises
- Continue to improve endurance and strength
- Neuromuscular warm-up programmes e.g. FIFA or PEP (see above in Stage 4) are important to reduce further injury

- Begin to gently return to contact sports in practice matches.

FINAL CLINIC VISIT WITH MR BOURKE AT 8-9 MONTHS TO DISCUSS RETURN TO SPORTS

PLEASE SEND ME A PROGRESS REPORT VIA LETTER WITH PATIENT OR EMAIL (mrbourke@castleviewclinic.com) AS TO YOUR OPINION ON THE PATIENT'S PROGRESS FOR RETURN TO SPORTS.

STAGE 6 12+ months RETURN TO SPORTS

- The aim of all these stages is a safe return to sports
- The timing of return depends on patient's age, chosen sports, severity of the knee injury and progress over the first 5 stages
- 18 years of age and less should not return to contact, competitive sports before 1 year, the re-injury risk is four times that of adults.

MR BOURKE IDEALLY WOULD LIKE TO SEE ALL PATIENTS WHO ARE BALL PLAYERS BEFORE RETURN TO CONTACT SPORTS IN THE 6-12 MONTHS POST-OPERATIVE PERIOD.

CONTACT DETAILS

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