Trochleoplasty

Setting	Staff	Patients
Physiotherapy	Musculoskeletal Physiotherapists	Trochleoplasty

PROTOCOL

This protocol is a general guide to rehabilitation. The time scales are an approximate guide and may be altered depending on various factors such as pain, swelling and control. Pain and swelling are very common for up to 6 months postoperatively and should be factored into rehabilitation. The patient's management should be tailored to meet individual objectives. Re-education of activity with a stable patella is vital before progression.

Please check the post-operative notes for any variation as operation not often performed in isolation.

PREPARATION FOR SURGERY

- Build muscle strength. It will be easier to bounce back after surgery
- Ensure a full range of motion. Preoperative stiffness leads to post-operative stiffness
- Prepare your home. Stairs can be difficult in the first few days. Do you have a downstairs bed and bathroom?
- Social-supportive friends and family are very helpful
- Work preparation. Does your workplace know you are having surgery? Have you considered sedentary work whilst undergoing rehabilitation?
- Stop smoking and restrict alcohol intake

WEEKS 1–2

Inflammatory stage.

Aims

- Decrease/control swelling and pain, fully active and passive extension, 90° flexion
- Ability to SLR
- Full weight-bearing as tolerated
- ROM is very important in the early stages to prevent arthrofibrosis

POST-OPERATIVE

- Inpatient for 2–3 nights
- Active and active-assisted knee flexion
- Static and inner range quadriceps exercises, straight leg raise taught
- Ankle dorsiflexion/plantarflexion exercises
- Mobilise weight-bearing as tolerated with crutches
- Swelling management
- Education regarding rehabilitation. Address any fear-avoidance issues
- Gentle closed chain quadriceps exercises—emphasis on alignment and co-contraction.
- Scar management
- Start basic proprioception, balance and coordination training
- Consider core and hip stability exercises

WEEKS 2–6

Clinic review at 2/52 for removal of sutures if local patient, if not see at 6/52.

Aims

- Full extension (normal/hyper-extension) and near full flexion
- Good activation of quadriceps and straight leg raise with no lag
- Minimal pain
- Mild/stable effusion
- Normal gait pattern

POST-OPERATIVE

- Swelling management
- Wean off crutches as pain and quadriceps control allows
- Progress closed chain quadriceps exercises with co-contraction—double leg wall mini squats, sit to stand, lunges (onto step if PFJ pain problematic)
- Closed chain knee flexion exercises
- Patella mobilizations—avoiding lateral glides
- Proprioception, balance and coordination training
- Core and hip stability exercises
- Once 100° flexion is achieved can start using a stationary bike

Precautions

- Avoid exacerbating pre-existing PFJ pain/consider level of degenerative change pre-op

WEEKS 6–12

Aims

- Controlled pain and swelling. ROM—must exceed 90° flexion. If not refer back to the clinic as may need manipulation
- Increase quadriceps and VMO control for the restoration of proper patella tracking
- Good proximal alignment and control

POST-OPERATIVE

Exercises need to be tailored to their functional aim. Many patients are still experiencing swelling and pain at this stage so should not be progressed too quickly.

- Road cycling—no clips or cleats, flat pedals only
- CV fitness
- Proprioceptive exercises —add controlled rotational exercises
- Swimming—freestyle and pool walking

Precautions

- Avoid impact work and deep squats/lunges especially if pre-existing PFJ pain and/or degenerative articular lesions (Fithian 2010)

Contraindications

- No breaststroke until 3 months at the earliest

Considerations

- Referral to the multigym if fully weight bearing with symmetrical gait and low/moderate pain and or swelling

MONTHS 3–6

Clinic review at 3/12 and X-rays.

Aims

- Knee extension strength at least 70% of the other knee
- Good active patella control with no evidence of lateral tracking or instability

POST-OPERATIVE

- Increase fitness
- Introduction of impact work—only if good range, eccentric quadriceps control with correct alignment and minimal swelling/pain
- Gradual increase in resisted open-chain/closed chain quadriceps (avoid pain)
- Continue with proprioceptive training

Contraindications

- No pivoting or shearing activity until 6 months

MONTHS 6+

Aims

- Full pain-free ROM
- Raise fitness targets and set new goals
- Increase the speed of balance reactions and improve coordination
- Normal gait in running. Good control of cutting, pivoting, stopping and starting if required
- Sport-specific exercises progressively sequenced to include walking followed by running forwards/backwards/sideways, changing directions
- Advice on returning to training
- Non-contact initially progress to contact

POST-OPERATIVE

- Initiate running—gradual paced change of terrain/gradient and duration
- Progressive introduction of dynamic activity:
  - jumping/hopping (start on the trampette, emphasis on alignment of both push off and land)
  - change of direction; start single direction and progress to cutting, multidirectional and pivoting
  - stopping/starting and acceleration/deceleration
  - backwards running

Before return to sports training

- Satisfactory single limb dynamic control
- 85% hop for height, length and cross over
- 80% strength of non-involved limb
- Confidence in knee

Return to activity

- Non-contact training initially

Clinic review at 1 year for X-ray and outcome scores. If all well patient is discharged.

FUNCTIONAL MILESTONES

Activity

- Sedentary work
- Driving
- Active job/on feet all-day
- Manual work
- Very heavy manual job/ladders etc

Timescales

- 4–6 weeks as tolerated
- 4 weeks, once can control car
- 2 months
- 12 weeks/liaise with consultant
- 3 months+

REFER BACK TO THE CLINIC

- Signs of infection
- Thrombosis
- Dislocation
- Persistent stiffness > 8/52

Seen in the clinic at approximately

2/52, 12/52, 12/12