SSC
SPORTS SURGERY CLINIC
DUBLIN

Insert patient i.d. label here

KNEE ARTHROPLASTY – REHABILITATION GUIDELINES

These rehabilitation guidelines are guidelines only and progression through them should be guided by the patient's symptoms and functional ability and/or any specific consultant requirements. All exercises should be performed within the patient's tolerance level.

Phase 1a (week 1-3)

Goals:
Safe and independent in home/ Community setting
Independent ambulation with crutches
ROM 0-110
Reduce pain and oedema

Treatment:
Continue pain management i.e. ice and medication and refer for inpatient pain management if necessary.
Car transfers and gait training on uneven surfaces
Progress passive- active assisted- active ROM exercises including mini-squats(1/4 range)
Aggressive knee flexion/extension exercises
Patellar mobilizations to improve knee flexion and extension can begin from week 2 post-op (Ciopa-Mosca et al.).

Phase 1b – Outpatient Care (weeks 3-8)

Goals:
Increase knee range of movement (ROM): 0°- >110°
Increase lower limb strength
Normalize gait reducing reliance on walking aid
Independent with 'Activities of Daily Living' (ADL's)
Improve balance and proprioception, strength and endurance

Treatment:
1. Aggressive extension and flexion exercises to facilitate knees with deficient ROM (extension and flexion).

Aggressive Extension Exercises

- In a seated position leg straight supported by pillow and self-application of overpressures applied above and below the patellofemoral joint

Aggressive Flexion Exercises

- Prone knee flexion – patient bends knee to end range and uses the opposite leg to apply passive pressure in a flexion direction
- Standing knee flexion (open chain) – patient stands supporting upper body with chair and actively flexes knee to buttocks, maintaining upright position
- Standing knee flexion (closed chain) – patient places affected leg onto step and leans forward with hand on knee

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2. Electrical stimulation may be continued in the early stages for quadriceps muscular re-education.
3. Functional strengthening exercises are progressed using both open and closed chain exercises. Closed chain exercises include: Bilateral toe raise and heel raises, Sit-stand exercises, mini squats, Progressive step-up and step downs.
4. Progress walking aids to crutches or stick as appropriate based on patients gait and balance
5. Balance and proprioception exercises on two feet progressed as appropriate.
6. Hydrotherapy may be used once the wound has healed and there are no other contraindications.
7. Short crank cycle ergometry may be use when ROM is >90° flexion. Normal cycle ergometry may be used once ROM is >110° flexion.
8. Single leg half squats to 65% body weight (Maxey and Magnusson)
9. Full weight bearing in single leg stance

PHASE 2- Outpatient Care (weeks 9-16)

Goals:
Maximize Knee ROM
Maximize Lower limb strength
Normal gait pattern
Reciprocal stair negotiation
Independent with ADL's
Timed up and go <15 seconds
Functional reach 10"

Treatment:
1. Continue knee ROM exercises. The following table highlights the knee flexion requirements for the most common functional tasks.

Activity	**Knee Flexion ROM**
Walking	67°
Ascending/Descending Stairs	83°
Sitting	93°
Tying Shoe	106°
Lifting an object	117°

(as per Maxey and Magnusson, 2007)

2. Progress ROM program to include quadriceps, hamstring and calf stretches
3. Progress gait re-education without mobility aid
4. Reciprocal stair negotiation re-education. This should be avoided if pain or deviations persist.
5. Progression of lower limb strengthening (open/closed chain, unilateral/bilateral, increasing resistance with theraband/weights, hip/knee/ankle).
6. Recreational training re-education.

** The patient is fit for discharge upon achieving all the goals and functional outcomes of the phase.*

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