B. TED MAURER, MD

POSTOPERATIVE REHABILITATION PROTOCOL
TOTAL KNEE ARTHROPLASTY

Goals addressed prior to discharge from hospital setting:

- Independence with bed mobility, transfers (supine to sit and sit to stand), and light ADLs
- Independence with ambulation on a level surface utilizing appropriate assistive device for a minimum of 15 feet
- Independence with ascending/descending three stairs utilizing support railing and/or appropriate assistive device
- Independence with performance of home exercise program (HEP)

I. PHASE 1 (Hospital discharge to 4 weeks)

A. Considerations

- PT 3x/week
- Pain and inflammation control
- Tissue healing
- Limited strength and ROM
- Limited transfers and gait
- Home exercises

B. Treatments

- Monitoring incision for drainage, erythema, excessive pain and swelling
- Assess incision/patella mobility; initiate patella mobs as needed
- Wound care instruction: Patient may shower if incision is not actively draining; otherwise keep occlusive dressing in shower
- Patient education: 1. Control edema (ankle pumps, elevation and ice); may consider Tubigrip at knee region to utilize in conjunction with TED hose. 2. CPM for home use when indicated. Initial setting ó same as at time of discharge from hospital. Increase flexion setting 5-10º per day as tolerated. 3. Knee immobilizer at night for extension ROM
- AROM ó Heel slides (supine and seated)
- AAROM ó 1. Stationary bicycle starting with half revolutions progressing towards full revolutions, minimal resistance. 2. Seated active assisted flexion ROM. 3. Supine heel slides with belt over pressure. 4. Contract-relax can be used in sitting, supine or prone as needed
- PROM ó Supine heel prop; prone knee hang; Biodex in passive mode; passive knee flex in 90/90 position; supine hamstring stretch

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- Strength (open-chain) ó Quad set; straight leg raise for flexion and abduction; terminal knee extension in supine; sitting knee extension; resisted knee flexion in sitting via Thera-Band
- Strength (closed-chain) ó Terminal knee extension in standing; unilateral and bilateral leg presses; unilateral and bilateral calf raises
- Continue to progress (repetitions and/or weight) with above exercises as symptoms dictate
- Transfer training as needed
- Progression in gait including advancing patient to crutches or cane as balance dictates

C: Goals

- Control pain and inflammation
- Increase AROM 0-105º
- Improved quad control
- Independent straight leg raise without extension lag
- Independent ambulation with appropriate assistive device on level and unlevel surfaces
- Promote functional independence
- Demonstrate continued independence/compliance with HEP

II. PHASE 2 (4 to 8 weeks)

A. Considerations

- PT 2x/week
- Pain and inflammation control
- Tissue healing
- Limited strength and ROM
- Limited community ambulation
- Home exercises

B. Treatments

- Continuation and progression of Phase 1 activities
- Initiate balance/proprioceptive activities (bilateral to unilateral)
- Progress functional strengthening in closed-chain positions (step-ups and step-downs progressing step height as symptoms allow; mini-squats; sit to stand exercise)

C. Goals

- AROM flexion 110-120º
- Improve balance, strength, proprioception, and endurance of lower extremity
- Normalize gait pattern and reduce reliance on assistive device

III. PHASE 3 (8 to 12 weeks)

A. Considerations

- PT 1x/week
- Continued limitation of strength, balance, endurance, and proprioception of lower extremity
- Monitor AROM for signs of loss

B. Treatments

- Continuation and progression of Phase 2 activities

C. Goals

- Full AROM (0º to 115º-120º+)
- 4+/5 to 5/5 MMT
- Return to normal activity within total knee guidelines

IV. PHASE 4 (12 weeks plus)

A. Treatments

- Work specific training if applicable
- Progress to home exercise program as tolerated for next 9-12 weeks

CRITERIA FOR INCREASED FREQUENCY OF PHYSICAL THERAPY VISITS:

- Difficulty obtaining full knee extension
- Delayed knee flexion
- Continued lower extremity weakness (continued extension lag after 4 weeks)
- Non-compliance in the home setting
- Bilateral total knee replacements

CRITERIA FOR DISCHARGE FROM PHYSICAL THERAPY:

- Adequate strength, ROM, balance, and proprioception
- Functional independence
- Independent ambulation with or without assistive device for community ambulation
- Non-antalgic gait
- Ability to perform sit to stand transfer without upper extremity assist

TYPICAL SCHEDULE OF FOLLOW-UP VISITS WITH PHYSICIAN AFTER SURGERY:

- 2 weeks (with physician assistant)
- 6 weeks
- 3 months (will sometimes skip the 3 months or 6 months visit if patient is doing well)
- 6 months (will sometimes skip the 3 months or 6 months visit if patient is doing well)
- 1 year plus

REASONS TO CONTACT PHYSICIAN'S OFFICE PRIOR TO NEXT SCHEDULED APPOINTMENT:

- Drainage, erythema, excessive pain and swelling
- Loss of active ROM
- Failure of ROM progression
- Calf pain

GENERAL INFORMATION/GUIDELINES:

Staples

- Removed 2 weeks after surgery

Use of Xarelto

- Utilizing Xarelto on most patients for 10 days postop

Use of Coumadin

- Will utilize Coumadin for those patients whose insurance does not cover Xarelto or if the patient is already on Coumadin preop. Will typically utilize for 6 weeks; will be discontinued per physician at office visit

TED Hose

- Typically 6 weeks; will be discontinued per physician at office visit. Can remove during hours of sleep

Return to Driving

- Will be determined per physician. Must be able to transfer safely and comfortably in/out of car; display adequate range of motion and strength of involved lower extremity to adequately brake and accelerate

Considerations for Static Splinting

- Will be ordered per physician with input from therapy staff. Consider use of static splint to achieve full, passive extension with patients that continue to struggle with motion

Considerations for Manipulation

- 90º of knee flexion must be achieved by the 6-week mark. If 90º of knee flexion is not achieved by the 6-week mark, patient will undergo 1 additional week of aggressive ROM activities with in-house therapy visits. If ROM fails to improve, a manipulation will be considered/performed prior to the 8-week mark.

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