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Sports Medicine
Shoulder, Elbow, Knee Arthroscopy
Shoulder Replacement Surgery

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DISCHARGE INSTRUCTIONS & PHYSICAL THERAPY PROTOCOL: Compartment Syndrome Release with Open Fasciotomy

- Recovery after surgery entails controlling swelling and discomfort, healing, return of range-of-motion of the ankle joint, regaining strength in the muscles, and a gradual return to activities. The following instructions are intended as a guide to help you achieve these individual goals and recover as quickly as possible after your surgery.

COMFORT

- **Elevation**
  - Elevate your knee and ankle above the level of your heart. The best position is lying down with two pillows lengthwise under your entire leg. This should be done for the first several days after surgery.
- **Cold Therapy**
  - If you elected to receive the **circulating cooling device**, this can be used continuously for the first 3 days, (while the initial post-op dressing is on). After 3 days, the cooling device should be applied 3 times a day for 20-30 minute intervals.
  - If you elected to receive the **gel wrap**, this may be applied for 20 minutes on, 20 minutes off as needed. You may apply this over the post-op dressing. Once the dressing is removed, be sure to place a barrier (shirt, towel, cloth, etc.) between your skin and the gel wrap.
  - If you elected to use **regular ice**, this may be applied for 20 minutes on, 20 minutes off as needed. You may apply this over the post-op dressing. Once the dressing is removed, be sure to place a barrier (shirt, towel, cloth, etc.) between your skin and the ice.
- **Medication**
  - **Pain Medication**- Take medications as prescribed, but only as often as necessary. Avoid alcohol and driving if you are taking pain medication.
    - You have been provided a narcotic prescription postoperatively. Use this medication sparingly for moderate to severe pain.
    - **You are allowed two (2) refills of your narcotic prescription if necessary.**
    - When refilling pain medication, weaning down to a lower potency or non-narcotic prescription is recommended as soon as possible.

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- Extra strength Tylenol may be used for mild pain.
- Over the counter anti-inflammatories (Ibuprofen, Aleve, Motrin, etc.) shoulder be **avoided** for the first 4 weeks following surgery.

- **Anti-coagulation medication:** A medication to prevent post-operative blood clots has been prescribed (Aspirin, Lovenox, etc.) This is the only medication that MUST be taken as prescribed until directed to stop by Dr. Forsythe.
- **Nausea Medication –** Zofran (Odansetron) has been prescribed for nausea. You may take this as needed per the prescription instructions.
- **Constipation Medication -** Colace has been prescribed for constipation. Both your pain medication and the anesthesia can cause constipation. Take this as needed.

A. ACTIVITIES:

1. **Weightbearing** – You are allowed to put full weight on your operative leg.Walk using two crutches or a walker. You may touch your foot on the floor for balance. Do this within the limits of pain.
2. **Athletic Activities** – Athletic activities, such as swimming, bicycling, jogging, running and stop-and-go sports, **should be avoided** until allowed by your doctor.
3. **Return to Work** – Return to work as soon as appropriate. Your ability to work depends on a number of factors – your level of discomfort and how much demand your job puts on your knees. If you have any questions, please call your doctor.

C. WOUND CARE:

1. Tub bathing, swimming, and soaking of the knee **should be avoided** until allowed by your doctor – Usually 2-3 weeks after your surgery. Keep the dressing on, clean and dry until your first operative visit. Showering will begin after your first postoperative visit.
2. Ask your nurse or Dr. Forsythe's staff regarding showering postoperatively.

D. EATING:

1. Your first few meals, after surgery, should include light, easily digestible foods and plenty of liquids, since some people experience slight nausea as a temporary reaction to anesthesia.

E. CALL YOUR PHYSICIAN IF:

1. Pain in your knee persists or worsens in the first few days after surgery.
2. Excessive redness or drainage of cloudy or bloody material from the wounds (Clear red tinted fluid and some mild drainage should be expected). Drainage of any kind 5 days after surgery should be reported to the doctor.

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3. You have a temperature elevation greater than 101°
4. You have pain, swelling or redness in your calf.
5. You have numbness or weakness in your leg or foot.

F. RETURN TO THE OFFICE:

Your first return to our office should be within the first 1-2 weeks after your surgery. You can find your appointment for this first post-operative visit in the post op instruction folder.

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REHABILITATION PROGRAM:
Compartment Syndrome Release with Open Fasciotomy

NOTE: The following instructions are intended for your physical therapist and should be brought to your first physical therapy visit.

❖ INTRODUCTION

The intent of this protocol is to provide the therapist with guidelines of the post-operative rehabilitation course after unilateral or bilateral compartment syndrome release with open fasciotomy. It should not be a substitute for one's clinical decision making regarding the progression of a patient's post-operative course based on their physical exam findings, individual progress, and/or the presence of post-operative complications. The therapist should consult the referring physician with any questions or concerns.

PHASE I (surgery to 2-3 weeks after surgery)

Goals
- Protection of the post-surgical compartment(s)
- Non-antalgic Gait
- Minimize post-op swelling, lower extremity circumference within 2 cm of uninvolved side at mid-calf
- Restore normal knee and ankle ROM
- Ability to lift involved leg in all directions in standing without pain or compensation
- Restore ability to control leg in open and closed kinetic chain during gait

Brace
- Boots to be worn whenever ambulating or putting weight on lower extremities.
- Crushed ice in plastic bag or Cryocuff 3 times per day for 20 minutes and ice after every therapy session

Weight-Bearing Status
- Weight-bearing as tolerated while in boots with crutches, walker, or wheelchair as needed

Therapeutic Exercises
- Passive and gentle Active ROM of ankle to maintain extensibility of soft tissues as they heal to prevent postoperative contractures
- Quadriceps sets

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- Leg lifts for hip strength
- Elevation, compression, and icing as needed for pain and swelling
- Active muscle pumping for swelling control
- Gentle distal-to-proximal massage to assist with venous return and swelling

PHASE II (4 weeks following surgery)

Criteria
- Goals from Phase I met

Goals
- Lower extremity circumference within 1 cm of uninvolved side
- Incisions well healed
- Minimize muscle atrophy and flexibility deficits in involved compartment
- Single leg stance control with eyes open
- Full flexibility/mobility of gastrocnemius/ankle
- Maintain motion and strength of uninvolved muscle groups, as well as cardiovascular endurance
- Perform active or gentle resistive exercises of the hip and upper extremities
- Proper lower extremity control and alignment with no pain during functional double leg squats
- Non-antalgic gait on level surface with FWB and no assistive device

Brace/Weight-bearing status
- Full weight-bearing, no crutches or brace as tolerated

Precautions
- Avoid over-stressing new scar formation by avoiding any friction over tissue
- Avoid post-activity swelling by limiting prolonged weight bearing activity as appropriate
- Manage swelling as if occurs with rest, ice, compression, elevation
- Avoid eccentric loading

Therapeutic Exercise
- Scar massage/mobility and desensitization
- Gentle stretching and nerve mobilization to tissue in involved compartment
- Progress open kinetic chain ankle strengthening as tolerated
- Balance and proprioception exercises
    - Progression of bilateral to unilateral activites first on a level, firm surface then on a soft/unstable surface
- Gait drills
    - Begin with sagittal plane and progress to frontal and transverse planes
- May begin stationary bike if wound healed
- Begin treadmill or track walking if wound is healed, progress time and speed as able

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- May swim or water walk if wound is FULLY healed

PHASE III (6 weeks +)

Criteria

- Goals from Phase II met

Goals

- Prevent post-op recurrence of symptoms with all activity
- Tolerate 15-30 minutes of continuous aerobic activity without the onset of symptoms/pain
- Reinforce self-monitoring and review signs of recurrence and complications
- Normal pain-free ankle ROM and strength
- Proper lower extremity control and alignment and no pain with single leg functional movements including squats and lunges
- No residual swelling 12-24 hours following all physical activity, including impact exercises
- No pain 1-2 hours following physical activity, including impact exercises

Precautions

- Avoid friction over scar tissue
- Avoid post-activity swelling
- No strenuous activity until wound is fully healed
- No running until 8 weeks postop
    - Patient must receive clearance from Dr. Forsythe to progress with jogging prior to PT initiating
- Avoid pain with any exertional activity

Therapeutic Exercise

- Lower extremity stretching and nerve mobilizations as appropriate
- Lower extremity myofascial stretching/foam rolling
- Progression of lower extremity closed chain functional strengthening including lunges, step-back, and single leg squats
- Progress heel rise to single leg
- Progress gait drills
- Initiate plyometric exercises
    - Focus on lower extremity control and alignment at hip, knee and ankle
    - Progress from 1 foot to other hopping, then single leg hopping
    - Focus on proper landing/deceleration mechanics

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PHASE IV (8-12 weeks)

Criteria

- Goals from Phase III met

Goals

- Proper dynamic neuromuscular control and alignment with eccentric and concentric multi-place activities including impact for return to sport without pain, instability, or swelling
- Within 90% of pain free planarflexion and dorsiflexion strength

Precautions

- Avoid pain with any exertional activity
- Avoid post-activity swelling

Therapeutic Exercises

- Biomechanical assessment of specific sport activity with video analysis as needed
- Instruct proper return to activity progression
- Progressive strengthening exercises using higher stability, and neuromuscular control with increased loads and speeds and combined movement patterns
    - Begin with low velocity, single plane activities and progress to higher velocity, multi-plane activities
    - Begin with forward and backward, progress to side to side, diagonals and transverse plane movements

PHASE V (12 weeks +)

- Patient may return to sport/work if they have met the above stated goals and have approval from Dr. Forsythe
- Precautions to reduce the risk of re-injury when returning to sports or high-demand activities as appropriate