



ANTERIOR COMPARTMENT SYNDROME/FASCIATOMY

Surgical description

Anterior Compartment Release/Fasciotomy:

The tourniquet is placed about the proximal thigh. The foot, ankle, leg, and knee are prepped and draped in the usual manner. A longitudinal incision approximately $\frac{3}{4}$ of an inch in length is made over the proximal third/middle third junction of the anterior compartment. Resection is carried down to the fascia, which is cleaned proximally and distally by means of an elevator. A second longitudinal incision is made at the middle third/distal third junction of the compartment to protect the superficial branch of the peroneal nerve. A transverse incision is made in the fascia and a proximal incision using the long scissors fasciotomy is extended proximally 2-3 cm below the fibular head. Resection is then carried distally by means of the scissors until scissors are visualized in the distal wound. The transverse incision is then made in the fascia at this level and incision is then carried distally. The subcutaneous tissues are closed with 3-0 Vicryl sutures, and the skin is closed with subarticular 3-0 Prolene sutures and Steri-strips. Dressings of compression dressings, Kerlix, Ted hose, calf Cryo/Cuff, and walking boot are placed at the end of the procedure.

Posteromedial Compartment Release:

The tourniquet is placed about the proximal thigh. The foot, ankle, leg, and knee are prepped and draped in the usual manner. A longitudinal incision is made just posterior to the posteromedial border of the tibia. Resection is carried down to the subcutaneous tissues. Care is taken to protect the Saphenous vein and nerve. The soleal bridge is divided exposing the superficial and deep posterior compartments of the leg. Fasciotomy is carried out in the posterior compartment by scissors and sectioned proximally and distally. Fascial release is performed. The tourniquet is

deflated and bleeders are cauterized. Subcutaneous tissue is closed w/ interrupted 3-0 Vicryl sutures, and the skin is closed w/subcuticular 3-0 Prolene sutures, and Steri-strips. Dressings of Ted hose, calf Cryo/Cuff, and walking boot are placed at the end of the procedure.

Phase I (Pre-operative)

Clinical Goals

- ◆ Pain control
- ◆ Achilles flexibility
- ◆ Reduction of impact activity

Testing

- ◆ Compartment pressure test. Test involves taking a resting compartment pressure using a Stryker Intra-compartmental pressure monitor system. Patient is then exercised running or walking on a treadmill. Exercise ends when subjective pain reports equal those experienced during normal activity. A post exercise max is taken within 1 minute of end of exercise and a record is kept of compartmental pressure every minute (up to approximately 5 minutes) until pressure returns to resting level.

Exercises

- ◆ Aggressive Achilles Tendon Stretching (AATS) with towel: 3 times daily for 3 minutes per repetition
- ◆ Ice: 4-6 times daily for 20 minutes
- ◆ Anterior Tibialis stretching: Manual, 5-10 repetitions for 30 seconds each

Clinical Follow-up

- ◆ Surgery

Phase II (2-5 days)

Clinical Goals

- ◆ Reduce inflammation
- ◆ Normal gait (crutch wean if necessary)
- ◆ Bilaterally equal ankle ROM
- ◆ Bilaterally equal Achilles tendon length

Testing

- ◆ None

Exercises

- ◆ Toe Curls
- ◆ Achilles Stretching (towel and progress to wall)
- ◆ Ankle ROM
- ◆ Bike in boot or shoe
- ◆ Seated calf raises
- ◆ DSSM
- ◆ Ice/Cryocuff

Clinical Follow-up

- ◆ See MD and PT at 1, 2 and 6 wks post op.

Phase III (1-2 weeks)

Clinical Goals

- ◆ Full ankle ROM
- ◆ Normal gait without assistive device
- ◆ Full AT length
- ◆ Return to non-impact exercise
- ◆ Increase ankle and calf strength
- ◆ Boot wean-D/C

Testing

- ◆ None

Exercises

- ◆ Bike- increase time towards 30 minutes
- ◆ Ankle tubing- DF, PF, IN, EV
- ◆ Standing B calf raises
- ◆ DSSM
- ◆ Achilles flexibility- progress from wall to step
- ◆ Single leg balance in shoe

Phase IV (2-6 weeks)

Clinical Goals

- ◆ Increase non-impact activity as tolerated for return to exercise at end of 3rd week
- ◆ Increase proprioception
- ◆ Increase strength

Testing

- ◆ Functional progression after the end of the 4th week for return to activity, as per patient tolerance

Exercises

- ◆ Continue AATS, manual anterior tibialis stretch, and previously assigned strength exercises (increasing resistance when tolerated)
- ◆ Proprioception training (steamboats, rebounder, star)
- ◆ Gradually increase time to 30 minutes on elliptical/Stairmaster, then progress into running
- ◆ Continue Ice and desensitization massage
- ◆ Functional progression to return to sport

Agility

- ◆ After the end of the 4th week, agility training/return to play training will occur as per patient tolerance and recovery status.