Chief, Division of Sports Medicine



# EXERTIONAL COMPARTMENT SYNDROME

### **DESCRIPTION**

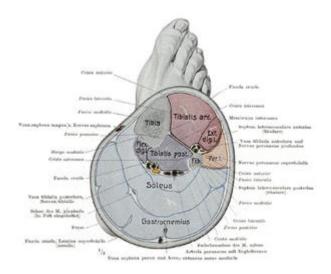
The leg is divided up into 4 main compartments separated by thick ligament like tissue, called fascia. Within these compartments are muscle, nerves, arteries, and veins. When there is swelling within a compartment, the fascia does not stretch. The swelling within the compartment leads to increased pressure within the compartment. This increased pressure eventually stops blood flow in the veins and arteries and leads to injury of muscle and nerves by direct pressure and loss of blood supply. This is called a compartment syndrome. A chronic compartment syndrome involves increased pressure within muscle, associated with exercise.

## FREQUENT SIGNS AND SYMPTOMS

- Leg pain that begins at the same time or distance from the onset of exercise and gets better after stopping exercise (though more severe pain may persist for hours or days)
- Feeling of fullness, pressure or ache in the leg, though occasionally the pain may be sharp.
- Numbness, tingling, or burning in the leg, foot and/or ankle.
- Weakness of the muscles of the foot and ankle.

#### **CAUSES**

The exact cause of chronic exertional compartment syndrome is unknown but thought to be due to increased pressure within muscle due to hypertrophy (big muscles from exercise/training), thickened fascia, or other possibilities.



# **RISK INCREASES WITH**

- Sports that require endurance training or competition
- Poor physical conditioning (strength/flexibility)
- Defects in the fascia where muscle can poke through.
- Poor running technique

# DEPARTMENT OF ORTHOPEDIC SURGERY SPORTS MEDICINE

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#### PREVENTIVE MEASURES

None known, though maintaining appropriate warm-up and stretching before practice or competition, as well as appropriate conditioning, flexibility and strength may help.

### EXPECTED OUTCOME

Usually curable with appropriate treatment that usually requires surgery.

#### POSSIBLE COMPLICATIONS

- Frequent recurrence of symptoms resulting in a chronic repetitive problem.
- Permanent injury to muscles and nerves of the leg, foot and ankle.
- Performance will be affected and may even have to stop performing due to pain if activity is continued without treatment.

#### GENERAL TREATMENT CONSIDERATIONS

Initial treatment consists of medications and ice to relieve pain, stretching and strengthening exercises of the foot, ankle and leg, rest and modifying the activity which initially caused the problem to occur. These can all be carried out at home for acute cases, though referral to a physical therapist or athletic trainer for further evaluation and treatment may be recommended. This usually, however, is unsuccessful. Some may wish to alter their activity to avoid exertional pain. Otherwise, surgery is recommended to release (cut) the fascia to relieve pressure on the structures within the compartment. Return to the same level of sports after surgery may be difficult for some people following surgery.

While this may be done with open incisions several inches in length, Dr. Safran often performs this procedure with an arthroscope. It is an outpatient procedure.

### **MEDICATION**

- Non-steroidal anti-inflammatory medications, such as aspirin and ibuprofen (do not take if surgery planned in 7 days or less), or other minor pain relievers, such as acetaminophen are often recommended. Take these as directed by your physician. Contact him/her immediately if any bleeding, stomach upset or an allergic reaction occurs.
- Topical Ointments may be of benefit.
- Pain relievers may be prescribed as necessary by your physician, usually only after surgery. Use only as directed and only as much as you need.

### **HEAT AND COLD:**

- Cold is used to relieve pain and reduce inflammation for acute and chronic cases. Cold should be applied for 10 15 minutes every 2-3 hours for inflammation and pain, and immediately after any activity which aggravates your symptoms. Use ice packs or an ice massage.
- Heat may be used prior to performing stretching and strengthening activities prescribed by your physician, physical therapist or athletic trainer. Use heat pack or a warm soak.

### NOTIFY OUR OFFICE IF

- Symptoms get worse or do not improve in 2-4 weeks despite treatment
- New, unexplained symptoms develop. Drugs used in treatment may produce side-effects.