PLANTAR FACIITIS

Fiona Rattray & Linda Ludwig Pg.417

PLANTAR FASCIITIS

- Plantar fasciitis is an overuse condition resulting in inflammation of the plantar fascia.
- Plantar fasciitis is the most common cause of foot Pain in athletes.
- Due to overuse and stress on the plantar fascia, leading to tissue fatigue and micro tearing at the calcaneal attachments.
- Usually over the age of 40, however a very active athlete may experience symptoms in their early 20's.
- The plantar fascia attaches to the medial process of the calcaneal tuberosity and merges into the plantar surfaces of the metatarsophalangeal joints and flexor tendon sheaths.
- The plantar fascia functions as a passive bowstring during the midstance phase of the gait cycle, approximating the calcaneus and metatarsals.
- This shortens and raises the medial longitudinal arch. The same effect occurs when you stand on your toes.

PLANTAR FASCIITIS

- The fat pad that covers the plantar surface of the calcaneus is held in place by connective tissue septa, structures which divide the fat pad into compartments. It is designed to cushion the calcaneus during the initial contact phase of the gait cycle.
- The muscles of the lower leg, soleus and gastrocnemius also help with shock absorption when walking and running.
- Excessive pronation stretches the fascia, the supporting ligaments and intrinsic mm's of the feet. This leads to micro tearing near the calcaneal attachments
- Excessive supination due to pes cavus and with increased body weight, greater forces occur at the heel.
- A bone spur may form on the medial anterior calcaneus. This may be due to traction of the plantar fascia or to compressive forces.
- Medical treatment included NSAIDS, corticosteroid injections, rest, and avoiding the activity causing the inflammation. Surgery is rarely performed.

SYMPTOM PICTURE

- Unilateral or BL.
- Mild to severe, the P is an initial slow onset with no history of injury or trauma.
- Tension is placed on the fascia with repeated use, overtime the fascia is unable to repair itself and is partially torn off the calcaneus. Adhesions and fibrosing than form.
- Edema may be present.
- P occurs with the first few steps after non weight bearing. P decreases after activity, and usually relieved by rest.
- P is usually located on the antero-inferior surface of the calcaneus on weight bearing. Paresthesia may be present on the medical longitudinal arch.
- Pes plaus, Pes cavus, and achillies tendinitis are often present. With repeated stress bone spurs may develop on the medial aspect of the calcaneus.

CONTRAINDICATIONS

- Frictions are avoided if acute inflammation is present, if the client is taking anti-inflammatories or if the client has a history of repeated corticosteroid injections to the plantar fascia.

ASSESSMENT

- AROM & PROM: MTP jts are painful due to stretching of the plantar fascia and intrinsic foot mm's.
- Length tests for gastrocnemius and soleus reveal shortness.
- AR ROM: Hopping on the affected forefoot to reproduce the P. Weak intrinsic foot mm's may be present.
- Differentiating causes of heel P: **Contusion** of the fat pad covering the calcaneus may occur due to overuse, weight gain or foot wear that provides poor posture.
- **Stress fracture** of the calcaneus due to overuse and poor cushioning of the calcaneus may also cause heel P.
- **Tarsal tunnel syndrome** is an entrapment of the posterior tibial nerve in the tarsal tunnel at the medial malleolus. This may be due to excessive pronation or to trauma such as an inversion ankle sprain. There is sharp P and tingling in the medial arch, heel, and sometimes toes. These symptoms become worse with standing, walking or running. Tinels sign may be positive.

CAUSES OF PLANTAR FASCIA

- Overuse: over training, running on hard surfaces, or prolonged standing. The symptoms often occur after a major or rapid adjustment to a training program.
- Predisposing factors: Poor biomechanics, such as excessive pronation or supination.
- Short and tight gastrocnemius and soleus mm’s,
- Improper foot wear that may be worn out, too flexible, too stiff, or does not provide adequate arch support.
- Weight gain, including pregnancy.

TREATMENT ACUTE

- Treatment focus of a 30 min relaxation massage including DDB.
- **Positioning:** Prone to start to treat compensatory structures.
- **Hydro**: Ice to the affected fascia.
- Treat compensatory structures, DDB
- Sacral lymphatic drainage.
- Rythmic techniques, GSM are used on low back, gluteals, and proximal leg.
- MM stripping is used, and ischemic compressions.
- Leg is treated with effleurage, petrissage.
- Stroking and mm squeezing are used on the foot.
- Treatment in supine position includes similar treatment as in prone position.

TREATMENT
CHRONIC

- **Positioning**: Same as in the acute stage.
- **Hydro**: Deep moist heat before stretching the fascia of gastrocnemius and soleus. A contrast application is used after treatment to increase local circulation.
- Treat compensatory, DDB
- Fascial work include skin rolling, cross hand spreading.
- Effleurage and petrissage, mm stripping.
- Passive stretching to gastrocnemius and soleus.
- Joint play to subtalar and navicular bone.
- Swedish techniques to the intrinsic muscles of the foot.
- Mm stripping and ischemic compressions are used.

TREATMENT CHRONIC

- Cross fibre frictions on adhesions in the plantar fascia, near the calcaneal attachments. Frictions are indicated on the Achilles tendon, followed by stretch and Ice.
- The client is turned supine, the anterior thigh and leg are treated with GSM.
- Joint play techniques are used on hypomobile superior tibio-fibular joint, and ankle. The gastroc and soleus may be stretches again in the supine position.
- The treatment is finished with effleurage to the entire limb.

SELF-CARE

- **Acute**: The client is instructed to rest, Ice, and elevate the affected foot as much as possible.
- **Chronic:** The client should rest from aggravating activities. Return to activity is gradual, starting with non-weight bearing activities such as swimming and bicycling.
- Ice is applied 3-4x/day to control inflammation and after activities that cause P.
- Gastrocnemius and soleus stretching 30-3-3
- The intrinsic mm's of the feet are strengthened by scrunching up a towel or picking up pencils with the toes.
- The client is referred to physio, and or a podiatrist for orthotics.