

PREVALENCE OF PLANTAR HEEL PAIN

- 10-15% of the Population (McPoil TG et al J Orthop Sports Phys Ther., 2008)
- Seen in all ages but it is most commonly experienced during middle age
- Females>Males (Lopes AD et al Sports Med., 2012)
- Common in the athletic population especially in running
 - Accounts for 10% of running injuries (Lopes AD et al Sports Med, 2012)
- Most common condition treated by podiatrists

ANATOMY

- Thickened fibrous aponeurosis that originates from the medial tubercle of the calcaneus
- Runs forward to insert into the deep, short transverse ligaments of the metatarsal heads, dividing into 5 digital bands (to form the fibrous flexor sheaths on the plantar aspect of the toes)
- 3 distinct parts: the medial, central, and lateral bands.
- The central plantar fascia is the thickest and strongest section, and this segment is also the most likely to be involved with plantar fasciitis.
- In normal circumstances, the plantar fascia acts like a windlass mechanism to provide tension and support through the arch.
- The plantar fascia blends with the paratendon of the Achilles tendon, the intrinsic foot musculature

AETIOLOGY?

Plantar Fasciitis/PHP aetiology is poorly understood but thought to be multifactorial. Many risk factors for the development have been hypothesised in the literature and commonly classified as intrinsic or extrinsic. Common Factors Include:

- Increase in age
- Increase in BMI and Weight gain (K D B van Leeuwen et al Br J Sports Med – 2015)
- Limited ankle DF and or 1st MTP joint range
- Increased Plantar Fascial Thickness
- Heel pad thickness
- Pes Planus/Cavus foot type – Dynamic Foot Function
- Muscle Imbalance
- Calcaneal Spur
- Metabolic Conditions
- Poor Footwear
- Impact/WB activities (Irving D.B Musculoskeletal Research Centre 2006)

PATHOPHYSIOLOGY – MOST COMMON TRAIN OF THOUGHT

- Biomechanical dysfunction of the foot is the most common etiology of plantar fasciitis
- The pathology is traditionally believed to be secondary to the development of microtrauma (microtears), with resulting damage at the calcaneal-fascial interface secondary to repetitive stressing of the arch with weight bearing
- This microtrauma, if repetitive, can result in chronic degeneration of the plantar fascia fibers
- Studies have introduced the etiologic concept of fasciosis as the inciting pathology. Fasciosis, like tendinosis, is defined as a chronic degenerative condition that is characterized histologically by fibroblastic hypertrophy, absence of inflammatory cells, disorganized collagen, and chaotic vascular hyperplasia with zones of avascularity (Khan KM et al., BMJ 2002)

SYMPTOMS

Symptoms Characterised by:

- Pain with the first few steps in the morning or after periods of rest
- TOP medial calcaneal tubercle
- Pain increasing by the end of day especially after extended periods of time on feet

DIAGNOSTIC IMAGING

The diagnosis of plantar heel pain is still quite a mystery. Most clinicians diagnose the condition clinically, particularly pathology of the plantar fascia. However, diagnostic imaging could play an increasingly important role in the diagnosis and management of plantar heel pain (Landorf K Journal of Science and Medicine in Sport., 2012)

- Ultrasound – Thickening of Plantar Fascia (greater than 4mm)
- MRI – Can show signs of sub-periosteal pathology in the calcaneus
- Calcaneal Spurring have more of a role in PHP

DIFFERENTIAL DIAGNOSIS

Neurological

- Abductor digiti quinti nerve entrapment
- Lumbar spine disorders
- Medial Plantar nerve irritation
- Tarsal Tunnel Syndrome

Soft Tissue

- Achilles Tendonopathy
- Fat Pad Syndrome/Heel Contusion
- Tibialis Posterior Tendonitis
- Plantar Fascial Rupture/partial tear
- Retrocalcaneal Bursitis

Skeletal

- Severes Disease
- Calcaneal Stress Fracture
- Infections
- Inflammatory Arthropathies
- Sub-talar arthritis

Miscellaneous

- Metabolic disorders
- Osteomalacia
- Tumors (Rare)
- Vascular insufficiency
- Rheumatoid Arthritis

CONSERVATIVE MANAGEMENT TREATMENT AND OUTCOMES

Research Based Treatment

- Calf and Plantar Fascial Stretching program (DiGiovanni BF et al Journal of Bone and Joint Surgery, 2003)
- High load strength Program - Unilateral heel raise with towel inserted under toes. (Rathleff et al Scand J Med Sci Sports., 2014)
- Strapping (Osborne H R et al Br J Sports Med., 2006)
- Orthotics Therapy (Bishop C et al Journal of Science in Medicine in Sport, 2015)
- Footwear change/modifications
- Dry Needling (Calf and Abductor Hallucis)
- Night Splints/Strasberg Sock
- Heat therapy (Chronic cases), Icing (Acute cases)
- Cortisone

85-90% of cases of CPHP are treated successfully with conservative care (McPoil TG et al. J Orthop Sports Phys The., 2008)

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