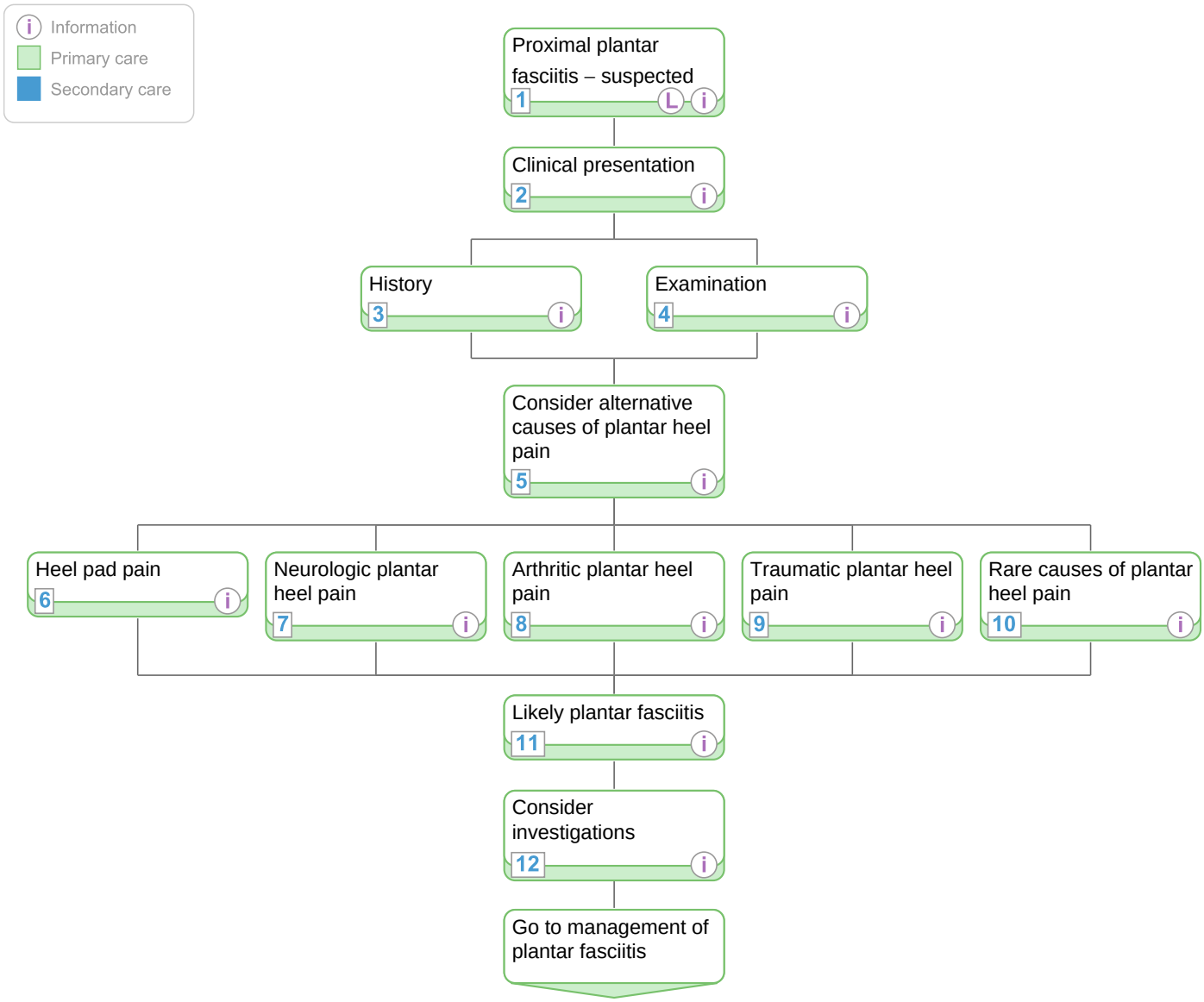
Plantar fasciitis - suspected

http://healthguides.mapofmedicine.com/choices/map/plantar_fasciitis1.html



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Plantar fasciitis - suspected

http://healthguides.mapofmedicine.com/choices/map/plantar_fasciitis1.html

1 Proximal plantar fasciitis – suspected

Quick info:

Scope:

- diagnosis of suspected proximal plantar fasciitis with considerations of alternative causes of plantar heel pain in adults
- management of plantar fasciitis

Out of scope:

- Achilles tendonitis or tendon rupture, sprains or fractures of the foot or ankle
- detailed management of alternative causes of plantar heel pain

Definition:

- plantar fasciitis refers to pain of the enthesis (proximal attachment of the plantar ligament at the calcaneum) of the foot, resulting from chronic degeneration and repair processes
  - this causes pain which often radiates from the central part of the heel pad or from the plantar fascia insertion at the medial tubercle of the calcaneum
- the pain may radiate along the plantar fascia into the medial longitudinal arch of the foot

Incidence:

- uncertain as condition is overdiagnosed because diagnostic proof is often not obtained – the following statistics are for general heel pain:
  - lifetime prevalence of about 10%
  - primarily affects people from middle age to later life
    - 7% of people over age 65 years report tenderness in heel region
  - approximately 25% of foot injuries in runners are accounted for by plantar heel pain in the US
  - plantar fasciitis is one of the most common causes of foot pain in adults

Aetiology or risk factors:

- the aetiology is uncertain
- plantar fasciitis has a high incidence in runners and some believe it is caused by repetitive microtrauma but there is very limited evidence to support this
- other possible risk factors include:
  - obesity
  - occupations requiring prolonged standing
  - heel spurs
  - excessive jumping (although more likely to cause heel bruise syndrome, another common cause of heel pain)
  - flat feet (pes planus)
  - ballet

Prognosis:

- the prognosis for plantar fasciitis is good
- almost all trials report an improvement in symptoms regardless of the intervention (including placebo) at 1 year; this suggests that the condition may be self limiting

References:

Clinical Knowledge Summaries (CKS). Plantar fasciitis. Newcastle upon Tyne: CKS; 2009.

Clinical Practice Guideline Heel Pain Panel. The diagnosis and treatment of heel pain. J Foot Ankle Surg 2001; 40: 329-40.

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Landorf KB, Menz HB. Plantar heel pain and fasciitis. Clin Evid 2008; 2: 1111-27.

Cole C, Seto C, Gazewood J. Plantar fasciitis: evidence-based review of diagnosis and therapy. Am Fam Physician 2005; 72: 2237-42.

Local administrative info:

feel the pain

2 Clinical presentation

Quick info:

- patients present with plantar heel pain which is initiated by weight bearing
- the pain is often most noticeable with the first few steps in the morning or after sitting for a prolonged period

- the pain usually decreases after a few minutes walking but returns as the day progresses and time standing or walking increases
- pain may be elicited by dorsiflexion and palpation of the inferior heel
- the pain is not usually the result of acute trauma
- plantar fasciitis can be associated with:
  - high body mass index (BMI)
  - inappropriate foot wear
  - tightness of the Achilles tendon

References:

Clinical Knowledge Summaries (CKS). Plantar fasciitis. Newcastle upon Tyne: CKS; 2009.

Clinical Practice Guideline Heel Pain Panel. The diagnosis and treatment of heel pain. J Foot Ankle Surg 2001; 40: 329-40.

Brigham and Women's Hospital. Lower extremity musculoskeletal disorders. A guide to diagnosis and treatment. Boston, MA: Brigham and Women's Hospital; 2003.

3 History

Quick info:

History:

- time(s) of day when pain occurs
- current and recent changes to shoe wear
- activity level at work and home
- history of any trauma
- exclude night pain, altered sensation or presence of systemic symptoms
- general health and physical activities

References:

Clinical Knowledge Summaries (CKS). Plantar fasciitis. Newcastle upon Tyne: CKS; 2009.

Clinical Practice Guideline Heel Pain Panel. The diagnosis and treatment of heel pain. J Foot Ankle Surg 2001; 40: 329-40.

Cole C, Seto C, Gazewood J. Plantar fasciitis: evidence-based review of diagnosis and therapy. Am Fam Physician 2005; 72: 2237-42.

4 Examination

Quick info:

Examine the foot:

- when sitting, standing and walking
- for physical abnormalities including:
  - flat foot
  - high arch
  - tight Achilles tendon
- evaluate the range of motion of the ankle; there may be reduced dorsiflexion due to stiff Achilles tendon or calf muscles
- conduct a Windlass test (forced extension of the first metatarsophalangeal joint):
  - suggestive of plantar fasciitis if produces pain
- palpate the inferior medial and medial aspect of the heel:
  - tenderness of the plantar heel region (often localised to the medial calcaneal tuberosity) is a defining feature
- check if the symptoms are bilateral
- evaluate angle and base of gait
- consider further examinations as indicated:
  - peripheral vascular assessment
  - neurological assessment

References:

Clinical Knowledge Summaries (CKS). Plantar fasciitis. Newcastle upon Tyne: CKS; 2009.

Clinical Practice Guideline Heel Pain Panel. The diagnosis and treatment of heel pain. J Foot Ankle Surg 2001; 40: 329-40.

Cole C, Seto C, Gazewood J. Plantar fasciitis: evidence-based review of diagnosis and therapy. Am Fam Physician 2005; 72: 2237-42.

5 Consider alternative causes of plantar heel pain

Plantar fasciitis - suspected

http://healthguides.mapofmedicine.com/choices/map/plantar_fasciitis1.html

Quick info:

Other common causes of heel pain are:

- fat pad trauma or bruise syndrome
- heel pad atrophy
- neurological/neuropathic pain

Less common causes of heel pain include, but are not limited to:

- arthritides
- trauma, eg fracture or stress fracture
- apophysitis – only occurs in growing children, and plantar fasciitis is very uncommon in this group
- other musculoskeletal causes including:
  - Achilles tendonitis
  - sub-calcaneal bursitis
  - plantar fascia rupture (has notably different presentation than plantar fasciitis)
  - plantar fibromatosis (causes distal, not proximal pain)
  - bone contusion
  - subtalar arthritis
- infection (rare in absence of open wound)
- vascular insufficiencies
- tumour

Reference:

Clinical Knowledge Summaries (CKS). Plantar fasciitis. Newcastle upon Tyne: CKS; 2009.

Clinical Practice Guideline Heel Pain Panel. The diagnosis and treatment of heel pain. J Foot Ankle Surg 2001; 40: 329-40.

6 Heel pad pain

Quick info:

Heel pad pain is a common cause of heel pain. Consider:

- fat pad trauma or fat pad bruise syndrome
  - associated with:
    - a history of impact, jumping or trauma
    - high body mass index (BMI)
    - hard or unsupportive footwear
  - heel pad is diffusely tender and pain is not located to the calcaneal origin of the ligament as it is with plantar fasciitis
- heel pad atrophy:
  - very common with increasing age
  - thinning of the heel pad causes pain on weight bearing

Both conditions are common but often misdiagnosed as plantar fasciitis leading to inappropriate treatment:

- treatments for plantar fasciitis are not appropriate and can make pain worse eg steroid injections
- treat appropriately (details outside the scope of the pathway)

7 Neurologic plantar heel pain

Quick info:

Consider if the heel pain has neurologic aetiology:

- neurologic heel pain results from the entrapment or irritation of one or more of the nerves in this area; the nerves that may be involved include:
  - posterior tibial (tarsal tunnel syndrome)
  - medial calcaneal (heel neuroma)
  - medial plantar
  - lateral plantar
  - sural
- neurologic heel pain can also be due to proximal nerve impingement syndromes
- assess for radiculopathy secondary to proximal nerve root pathology if the patient has pain that originates in the lower back and radiates down the leg into the foot
- refer for diagnostic investigation and assessment by a specialist if neurologic heel pain is suspected:
  - investigations are usually normal as pain is not caused by neural damage
  - local nerve blockage can confirm diagnosis

- diagnostic studies may include:
  - electromyography
  - nerve conduction velocity
  - magnetic resonance image (MRI)
- an underlying systemic disease process needs to be ruled out in suspected neurologic heel pain, particularly if presentation is bilateral

Reference:

Clinical Practice Guideline Heel Pain Panel. The diagnosis and treatment of heel pain. J Foot Ankle Surg 2001; 40: 329-40.

8 Arthritic plantar heel pain

Quick info:

Consider if the heel pain has arthritic aetiology:

- various systemic arthritides can also present as heel pain including:
  - seronegative arthritides, eg:
    - ankylosing spondylitis
    - psoriatic arthritis
    - Reiter's disease
    - gout
  - diffuse idiopathic skeletal hyperostosis
  - rheumatoid arthritis
  - fibromyalgia
- ask patients if they have other joint symptoms and consider concomitant arthralgia
- consider referral to a rheumatologist for help with diagnosis and treatment
- X-rays:
  - are not indicated unless there is a suspicion of underlying subtalar arthritis, fracture or neoplasm
  - may show erosions or proliferative changes specific to arthritic diseases

Reference:

Clinical Knowledge Summaries (CKS). Plantar fasciitis. Newcastle upon Tyne: CKS; 2009.

Clinical Practice Guideline Heel Pain Panel. The diagnosis and treatment of heel pain. J Foot Ankle Surg 2001; 40: 329-40.

9 Traumatic plantar heel pain

Quick info:

Consider if plantar heel pain has been caused by trauma:

- trauma to the calcaneus (heel bone) can result in heel pain
- a fall from a height onto the heel is the most common mechanism of injury
- intra-articular fractures involving the subtalar joint lead to pain in the rear foot that localises to the heel itself
- focal symptoms relating to the anatomic area of less severe fractures – these may include:
  - fracture to the:
    - sustentaculum tali
    - plantar calcaneal tubercles
  - avulsion of the posterior aspect of the tubercles or tuber
- repetitive loads to the heel can lead to stress fractures of the calcaneus:
  - the exact mechanism is unknown but it has been observed that patients often report an increase in walking prior to the onset of symptoms
  - physical findings include:
    - tenderness to the lateral wall of the calcaneus
    - swelling and warmth (not always)
    - pain on compression of the calcaneus
  - progression to an acute fracture is uncommon
- a fracture can usually be confirmed by X-ray
- patients with soft tissue trauma (eg acute plantar fascia rupture) present with negative X-ray findings

Reference:

Clinical Knowledge Summaries (CKS). Plantar fasciitis. Newcastle upon Tyne: CKS; 2009.

Clinical Practice Guideline Heel Pain Panel. The diagnosis and treatment of heel pain. J Foot Ankle Surg 2001; 40: 329-40.

Plantar fasciitis - suspected

http://healthguides.mapofmedicine.com/choices/map/plantar_fasciitis1.html

10 Rare causes of plantar heel pain

Quick info:

- consider rare conditions that cause plantar heel pain – these include:
  - tumours (malignant and benign)
  - infection (soft tissue and bone)
  - vascular compromise
- the potential morbidity of these conditions is substantial
- refer for proper diagnostic testing and treatment with the appropriate specialist
- also consider calcaneal apophysitis in adolescents

Reference:

Clinical Knowledge Summaries (CKS). Plantar fasciitis. Newcastle upon Tyne: CKS; 2009.

Clinical Practice Guideline Heel Pain Panel. The diagnosis and treatment of heel pain. J Foot Ankle Surg 2001; 40: 329-40.

Academy of Ambulatory Foot and Ankle Surgery. Heel spur syndrome. Philadelphia, PA: Academy of Ambulatory Foot and Ankle Surgery; 2003.

11 Likely plantar fasciitis

Quick info:

If other causes of heel pain have been excluded, plantar fasciitis is the likely diagnosis.

12 Consider investigations

Quick info:

All patients with suspected plantar fasciitis should ideally have a diagnostic ultrasound to:

- confirm diagnosis
- exclude a tear
- look for characteristics of an underlying seronegative arthropathy
- possibly demonstrate plantar fascial thickening and hypoechogenicity at the calcaneal insertion suggestive of oedema

If ultrasound is not readily available, and clinical examination supports diagnosis of plantar fasciitis and alternates have been excluded:

- simple conservative treatments may be trialled; but
- if steroid injections or more advanced treatment is needed, patient should be referred for ultrasound scan

Other investigations that may be considered (although normally unnecessary), include:

- radiography:
  - not normally indicated unless another abnormality (eg fracture, arthritis or tumour) is suspected
- magnetic resonance imaging (MRI):
  - shown to be productive in identifying the inflammatory area but is not normally indicated and there is no superiority over other imaging modalities

Investigations appropriate for exclusion of other causes of plantar heel pain may include:

- for suspected neurologic plantar heel pain:
  - electromyography
  - nerve conduction velocity
  - MRI
- X-rays:
  - may show erosions or proliferative changes in arthritic heel pain
  - for traumatic causes, X-rays can usually confirm a fracture; findings are nearly always negative for patients with soft tissue trauma, eg acute plantar fascia rupture
- for rare causes of plantar heel pain, refer for proper diagnostic testing and treatment with the appropriate specialist
- referral to a specialist can be important for refractive plantar fasciitis and other causes of heel pain, but it is imperative for rarer causes which can be life threatening (such as malignant tumours, vascular problems or infections)

References:

Clinical Knowledge Summaries (CKS). Plantar fasciitis. Newcastle upon Tyne: CKS; 2009.

American College of Radiology (ACR) Chronic foot pain. Reston, VA: ACR; 2005.

Clinical Practice Guideline Heel Pain Panel. The diagnosis and treatment of heel pain. J Foot Ankle Surg 2001; 40: 329-40.

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Cole C, Seto C, Gazewood J. Plantar fasciitis: evidence-based review of diagnosis and therapy. Am Fam Physician 2005; 72: 2237-42.

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Key Dates

Due for review: 31-May-2011
Last reviewed: 29-Oct-2009, by International
Updated: 29-Oct-2009

Accreditations

The editorial process used to create this pathway is accredited by:

NHS Institute for Innovation and Improvement:
Accreditation attained: 30-Oct-2009
Due for review: 31-May-2011
Disclaimer

Certifications

The evidence for this pathway is certified by:

BMJ Publishing Group Ltd:
Certification attained: 31-Jul-2009
Due for review: 31-Jul-2010
Disclaimer

Evidence summary for Plantar fasciitis - suspected

The pathway is based on our interpretation of the following guidelines (4, 7). All of these guidelines have been graded for quality and prioritised for inclusion based on their methodological quality. All intervention nodes (i.e. those concerning therapy and therapeutic advice) have been graded for the quality of the evidence underlying them. Supporting resources for key non-interventional nodes have also been listed but have not been graded.

Search date: Sep-2006

Evidence grades:

- 1 Intervention node supported by level 1 guidelines or systematic reviews
- 2 Intervention node supported by level 2 guidelines
- E Intervention node based on expert clinical opinion
- U Non-intervention node, not graded

Evidence grading:

Graded node titles that appear on this page	Evidence grade	Reference IDs
Proximal plantar fasciitis ? suspected	U	4, 6, 7, 13, 2
Clinical presentation	U	4, 6, 2
History	U	4, 13, 2
Consider investigations	1	1, 4, 6, 13, 2
Neurologic plantar heel pain	U	4
Arthritic plantar heel pain	U	4, 2
Traumatic plantar heel pain	U	4, 2
Rare causes of plantar heel pain	U	4, 5, 2
Consider alternative causes of plantar heel pain	U	4, 2
Examination	U	4, 13, 2

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References

This is a list of all the references that have passed critical appraisal for use in the pathway Plantar fasciitis

ID	Reference
1	American College of Radiology (ACR). Chronic foot pain. Reston, VA: ACR; 2005. http://www.acr.org/SecondaryMainMenuCategories/quality_safety/app_criteria/pdf/ExpertPanelonMusculoskeletalImaging/ChronicFootPainDoc7.aspx
2	Clinical Knowledge Summaries (CKS). Plantar fasciitis. Newcastle upon Tyne: CKS; 2009. http://www.cks.nhs.uk/plantar_fasciitis#344108001
3	Work Loss Data Institute. Ankle & foot (acute & chronic). Corpus Christi, TX: Work Loss Data Institute; 2005. http://www.guideline.gov/summary/pdf.aspx?doc_id=11014&stat=1&string=
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6	Brigham and Women's Hospital. Lower extremity musculoskeletal disorders. A guide to diagnosis and treatment. Boston, MA: Brigham and Women's Hospital; 2003.
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15	Boddeker IR, Schafer H, Haake M. Extracorporeal shockwave therapy (ESWT) in the treatment of plantar fasciitis: a biometrical review. Clin Rheumatol 2001; 20: 324-330. http://www.ncbi.nlm.nih.gov/pubmed/11642513
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18	WCB Evidence Based Practice Group. Extracorporeal shock wave therapy for treating musculoskeletal conditions: first update. Richmond, BC: WorkSafe, BC; 2004. http://www.worksafebc.com/health_care_providers/Assets/PDF/eswt_First_update.pdf

Disclaimers

Plantar fasciitis - suspected

