

TEN TOP TIPS FOR EVERYDAY FOOT-CARE CONUNDRUMS

The population of the UK is around 64 million and the average person takes between 7,000–13,000 steps per day (Tudor-Locke et al, 2011). In a typical lifetime, our feet will take us more than 4 times around the circumference of the planet. It is perhaps little wonder that 20% of adults are reported to have experienced foot pain within the past month and 60% within the past 6 months (Garrow et al, 2004). Being able to identify, treat and educate patients about the most common foot problems is key to keeping them ambulatory and, in the ‘at risk’ populous, preventing disaster. The conditions discussed in this article are most often the usual culprits of patient complaints.

This article outlines ten tips to aid the clinician in terms of overcoming everyday foot care problems. It is not a panacea, but aims to assist clinicians in developing a basic working knowledge of common conditions encountered in podiatric clinical practice.

1 CORNS AND CALLUSES

Corns and calluses are formed within the epidermis as a result of mechanical or chemical stress on the skin and are part of the body’s protective mechanism. Growth factor is released throughout the layers as a reaction to the stresses exerted on it, hyper-proliferation, increased adhesion proteins and a reduced desquamation rate occur (Kim et al, 2010).

A centralised area of pressure may produce a para-keratinised nucleus, known as a corn. As a callus thickens, the dermal pressure increases and the problem becomes cyclical; especially if in a confined space such as a shoe. If the pressure is sufficient to compress the small arterioles that service the

skin, tissue hypoxia and aseptic necrosis may occur.

Treatment

Gentle filing with an emery board or foot file may be of benefit, whereas caustics or grater type devices are not recommended. All patients — except those with hyperhidrosis — will benefit from twice daily emollient application. It should be noted that aqueous creams are not advocated as moisturisers. Local NHS podiatry services may be able to offer pain-free debridement or corn enucleation using a scalpel (Figure 1).

2 INGROWN AND THICKENED TOE NAILS

Ingrown nails are referred to as onychocryptosis. Ingrown toe nails are usually a triangular spike that has grown forward due to improper nail cutting, as a result of tight foot wear/hosiery that compress the sulcus (the fleshy part next to the nail) or blunt trauma; all of which cause the nail to hide beneath the sulcus, dig in to and pierce the flesh. The body then attempts to heal, however, the nail prevents this, causing hypergranulation

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Figure 1. Callus.



Figure 2. Ingrown nail.



Figure 3. Tinea pedis.

that is highly vascular and may cause distress (Figure 2).

Treatment

In small children, ingrown nails can usually be managed conservatively by cutting the nail spike out and massaging the sulci down and away from the nail, while filing in a horse shoe motion at the edge to round any spikes. The nail should be grown out slightly, filing the edges as described and cutting the nail straight across, not following the curved shape as would normally be advised with a healthy nail.

In adults and children alike, if the condition cannot be managed conservatively, individuals should be referred to podiatry/GP for nail surgery. Often, only part of the nail needs to be removed (partial nail avulsion) and is aesthetically preferable to removing the whole nail (total nail avulsion). Patients present after they have been given several ineffective courses of antibiotics.

Early referral can prevent unnecessary prescriptions for this patient group. Thickened nails or onychogryphosis are common and occur as a result of trauma or stress to the part of the foot that produces the nail (germinal matrix). When the matrix is damaged, this causes hyperproliferation. Increasing pressure on the structures beneath can result in aseptic necrosis, subungual haematoma or discomfort.

Treatment

The simplest treatment is to file the nail with an emery board to reduce thickness. Patients can try to cut the nail by using nail cutters to nip at the nail from one side to the other. Trying to cut the whole nail at once is not possible and is where most people fail when attempting to trim it themselves. A podiatrist may be able to reduce with a drill, or in some cases offer a total nail avulsion.

3 SWEATY FEET/ HYPERHIDROSIS/PITTED KERATOLYSIS

Sweaty feet can be embarrassing for the individual and present an increased risk of bacterial and fungal infection. Patients are often affected by the smell (bromidrosis). Mechanical changes in the skin's strength when maceration occurs can produce fissures or pitting from bacterial activity.

Treatment

Reducing sweat will reduce the bio-burden. Dependent on severity, topical medicaments may be of therapeutic benefit. An antiperspirant that contains aluminium chloride is recommended and, if the condition is mild/moderate, then Driclor® (Stiefel) or Anhydrol Forte® (Dermal Laboratories) roll-ons can be prescribed or bought over-the-counter (NICE, 2014c)

If the condition is particularly severe, potassium permanganate soaks should be considered. The patient will need to put 3–4 good size crystals into a bowl of warm water so that it just covers the feet. This should be done

daily for 1 week, reducing to alternate days for a week and then 1–2 times weekly. Patients should be advised that if browning of the skin or nails occurs to reduce the number of crystals used. Patients should also be advised to wear leather shoes and woollen/cotton socks, sweat absorbing and odour eliminating insoles may also be of benefit (Frowen et al, 2010).

If the condition cannot be managed conservatively, the patient should be referred to dermatology for consideration of botox, iontophoresis or even sympathectomy.

4 ATHLETE'S FOOT AND FUNGAL NAILS

Tinea pedis presents as pruritic, erythematous and inflamed regions of the foot (Figure 3). It is commonly found between the toes (interdigital), on the sole (vesicular type) or on the medial and lateral aspects of foot (moccasin type; Chadwick, 2013).

Meanwhile, colour and dystrophy are the most important clues to diagnosis of fungal nail infections (Chadwick, 2013). It is important to note that treatment should not be initiated on clinical grounds alone. Although 50% of all cases of nail dystrophy are fungal in origin, it is not always possible to identify such cases accurately (Roberts et al, 2003). Nail and/or skin scrapings should be taken prior to commencement of oral drugs and obtaining scrapings from beneath the nail will increase reliability of the result (Figure 4).

In terms of how specific nail infections present, the following should be considered:

- ▶▶ Lateral onychomycosis presents as white or yellow opaque streaks along one side of the nail.
- ▶▶ Distal onycholysis and hyperkeratosis presents as scaling under the distal nail; the nail is discoloured, opaque, thickened and as a result, the end lifts up.
- ▶▶ Superficial white onychomycosis

presents as small, flaky, white patches and pits that appear on the top of the nail plate. The nail becomes roughened and crumbles easily

- ▶ Total dystrophic onychomycosis presents as a thick, crumbly and completely destroyed nail (Chadwick, 2013).

Treatment

Mild, non-extensive skin infections should be treated with clotrimazole, econazole or miconazole (NICE, 2014b). For dermatophyte skin infections, topical 1% terbinafine once or twice daily for a week may be considered (Crawford, 2006; Crawford and Hollis, 2007; British Infection Association, 2009).

Terbinafine is fungicidal (kills the fungus) as opposed to fungistatic (prevents fungal development). If the infection is intractable, oral terbinafine should be considered. For dermatophyte of the nail, oral terbinafine — 250 mg once daily for 3–6 months — should be considered (Crawford, 2006; Crawford and Hollis, 2007; British Infection Association, 2009).

For nail infections with non-dermatophyte moulds (*Aspergillus* species) or *Candida* species, oral itraconazole should be considered (given as pulsed therapy – three courses of 7 days per month). It should be noted that liver impairment may occur with terbinafine and itraconazole.

5 CHILBLAINS (PERNIOSIS/PERNIO)

Young and older people are the two age groups predominantly affected by chilblains and these are classified as either acute or chronic. When feet are cold, the arterioles undergo vasoconstriction, which warms the affected area too quickly and results in a chilblain. The sudden rush of hot blood into the cold toe causes tissue damage. Diagnosis is based on clinical presentation. The lesions usually appear as single or multiple red patches, papules or plaques on a cool oedematous base (NICE, 2014a).

Treatment

Prevention is better than cure and, therefore, individuals should avoid rapid warming with hot water bottles or other heat sources. Warm, well insulated shoes should be recommended. Also, two pairs of thin socks are better than one thick pair as air aids insulation. Feet should be warmed gradually using a blanket or massage. There is currently no evidence to support the use of over-the-counter topical preparations for chilblains and they are not recommended (NICE, 2014a). The clinician should check if beta-blockers have been commenced as there may be an association with their vasoconstrictive side effects. If the patient is on a beta-blocker this should not be stopped, but the individual should be referred back to the GP for a medication review. In severe, chronic or recurrent cases, referral to the individual's GP should also be initiated for consideration of low dose nifedipine (NICE, 2014a). Patients should be discouraged from scratching and open lesions should be dressed with a dry dressing. If an antimicrobial is indicated, there is anecdotal evidence that inadine may be beneficial.

6 VERRUCAS

Viral warts are a common skin disease, most frequently affecting the hands and feet. They are caused by the human papilloma virus. While warts are not harmful and usually go away without any treatment, they can be unsightly and painful (Gibbs and Harvey, 2006). Typically, they are distinguishable by the presence of black dots at their centre; these are thrombolised arterioles (Figure 5).

Treatment

Verrucas should be filed with an emery board and tea tree oil applied twice daily. Patients can be reassured that the condition is self-limiting. They should also be encouraged to wear flip flops, a plaster or verruca sock over the affected area in communal areas as this should help prevent the verrucas spreading. Patients do not need to abstain from



Figure 4. Fungal nails.



Figure 5. Verrucas.



Figure 6. Bunion.

sporting activities. For severe or painful verrucas, 50% salicylic acid should be applied daily as this has been shown to be as effective as cryotherapy, while being more cost effective and less painful (Cockayne et al, 2011). Caustic agents are not recommended for individuals who are deemed 'at risk', such as people with diabetes or poor circulation.

7 FLAT FEET/HIGH ARCHED

Pes planus (flat feet) and pes cavus (high arched feet) are very common. The pes planus foot is a pronated foot type (turned in) and a pes cavus foot is a supinated foot type (turned out). If the patient is not experiencing foot pain then little needs to be done as this is usually within the biological accepted normal variance.

Treatment

If pain is present, however, referral to a podiatrist specialising in musculo-

skeletal problems (biomechanics) for assessment for innersoles or exercise may be beneficial.

8 BUNIONS/TOE DEFORMITIES

Toe deformities can result from underlying systemic disease, such as diabetes or rheumatoid arthritis, and in these cases good control of the condition is pivotal. It may also occur as a result of osteoarthritis (general wear and tear). A bunion (hallux abductovalgus) can be mild to severe, with the most severe form presenting as hallux deviation across the foot, resulting in subluxation and retraction of the second toe. Clawed, hammer, mallet and retracted toes may cause the individual severe discomfort, causing corns, callus or ulceration, and prevent them from being able to wear their usual choice of footwear (Figure 6).

Treatment

Treatment for bunions focuses on good footwear advice (see Tip 10). If toe deformity occurs, its progression may be slowed with orthotic intervention. Patients should be referred to a musculoskeletal (MSK) podiatrist. If the condition is causing severe discomfort then early referral to orthopaedics can improve patient wellbeing.

9 PLANTAR FASCIITIS/HEEL SPURS

The plantar fascia inserts into the calcaneus and may become strained at its insertion if the foot excessively pronates. The fascia warms on walking and is able to stretch more easily when in motion. Once the individual stops walking, the fascia cools, shrinks and pulls on the insertion. The condition is, therefore, typified by pain elicited post-walking or worse, when weight bearing recommences. A heel spur may be associated, but this is self-limiting and usually resolves spontaneously.

Treatment

The majority of cases will resolve with calf and plantar fascia stretches. Stretching of the gastrocnemius, soleus and fascia is important. A rolling pin, hard ball or a frozen, water-filled plastic

bottle may alleviate discomfort when rolled beneath the arch. The patient should be referred to MSK podiatry for orthotics. Anti-inflammatory medication and steroid injections can be useful in recalcitrant cases.

10 FOOTWEAR

Understanding how to fit a shoe is an important yet simple skill. In terms of treatment, patients should ensure the widest part of their feet (i.e. the first metatarsal head to the fifth metatarsal head) is measured. The shoe should be placed on the bottom of the foot with the sole upward; if the foot overhangs the shoe, the shoe is too small for the foot.

The foot should not touch the end of the shoe and there should be approximately 1–1.5 cm space from the longest toe to the end of the shoe when standing. If the toes are retracted, the shoe length should accommodate as if the toes were not retracted as not to affect the heel/forefoot ratio. A toe box should be deep enough to accommodate the highest toe with at least a 1 mm gap. The heel cup/counter should be relatively stiff and supportive.

Slip-on shoes are not recommended for patients with toe deformities or pain and shoes that fasten with a lace, Velcro® strap or buckle are best as these hold the shoe in place and provide support. If an individual cannot wear off-the-shelf shoes then the cause should be addressed (e.g. if this is due to odema or deformity). If the root of the problem cannot be addressed, referral to an orthotist or podiatrist who specialises in footwear may be necessary.

Conclusion

Foot complaints are common, but good foot care advice can help patients stay ambulatory, pain-free and reassured. Regular nail care, good hygiene and appropriate footwear can prevent the majority of conditions occurring in the first instance.

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