TEXT DR YUNG SHING WAI

Giant steps

An update on foot and ankle surgery

Foot and ankle surgery is often called the "Cinderella" of orthopaedics. It is a subspecialty often languishing in the background while the more glamorous subspecialties like joint replacement and arthroscopic minimally invasive surgery hog the limelight. However, like Cinderella, foot and ankle surgery has more recently blossomed with the development of better understanding of foot mechanics and newer surgical procedures. Moreover, in the developing society, foot and ankle problems are gaining prominence as more people become aware of their foot problems and have difficulty finding the right footwear.

Hallux valgus (bunions)

This is perhaps the most common foot deformity among adults. While the incidence has probably not increased, more patients are seeking treatment because of difficulty with footwear. Population studies have shown that there is just as high a prevalence of hallux valgus in a non-shoe-wearing population as there is in one that wears closed shoes. However, there are fewer surgeries because patients are able to cope with their problems better. In Singapore, many patients with hallux valgus wear open shoes and sandals to cope with bunion deformities.

Aside from accommodative footwear and the use of simple straps and bunion cushions, there are few non-surgical options. Corrective operations like the distal osteotomies (Mitchell's or Chevron's) have been available for a long time, and these do a good job for smaller deformities (Figure 1). Although they are simple procedures with relatively low complication rates, it takes about 6 to 8 weeks for the bone to unite and for the patients to be fairly comfortable.

For the more severe deformities, other procedures are necessary such as a proximal osteotomy or fusion (Lapidus procedure). The distal procedures are unable to correct these severe deformities. The problem with the proximal procedures, however, is the longer down time of about 3 to 4 months.

A newer hybrid procedure known as the Scarf operation is now available. First popularised in France and other European countries, the Scarf offers the best of both worlds. It corrects large deformities, and yet has a shorter downtime than even the Mitchell's procedure. The patient can often walk immediately, and can bear his full weight by 4 weeks. "Scarf" is a carpentry term, and the procedure is characterised by a "Z" cut. It is inherently stable, and because of the large bony surface area involved, the surgical wound heals rapidly with low non-union rates. The patient is usually very comfortable because of the stability and has surprisingly little pain after the procedure. The Scarf also corrects very severe deformities, with the exception of a hypermobile first metatarsal. This is a condition often seen in ligamentous laxity or pes planus deformities, both of which are common in the Asian population.

In combination with the Scarf, there are several options to correct the associated hammer or cross-over toe deformities that are seen together with the hallux valgus (Figure 2). The most useful procedure is the Weil metatarsal shortening procedure, which is used to correct toe deformities and balance the relative metatarsal lengths (eg, a long second toe).

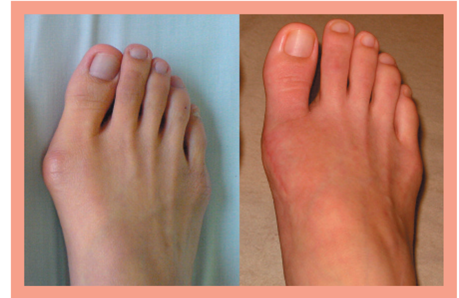
Figure 1 **A mild bunion deformity corrected with distal osteotomy.**

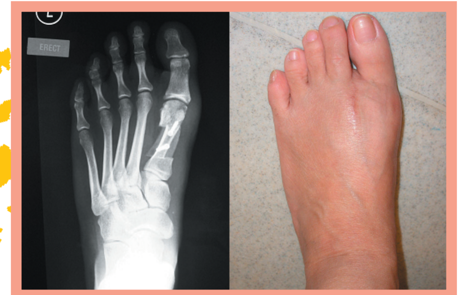
Figure 2 **A Scarf osteotomy.**

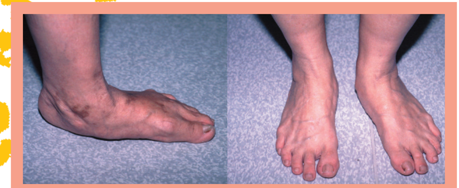
Figure 3 **Posterior tibial tendon dysfunction, worse on the left foot.**

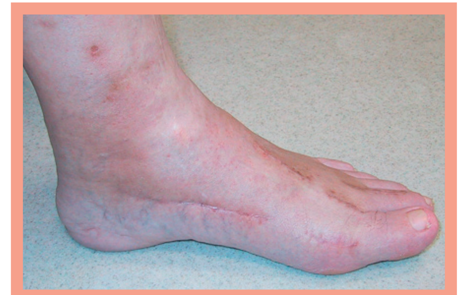
Figure 4 **Surgical correction of pes planovalgus with lateral column lengthening. This patient also had correction of hallux valgus/cross-over second toe deformities.**

Pes planus (flat foot)

Pes planus is a very common problem in the Asian population. The deformity is one of over-pronation, ie, a combination of forefoot external rotation (lateral deviation), flattening of the medial arch, and hindfoot valgus.

In most cases, it is asymptomatic, particularly in the young. Children with painless pes planus do not need treatment. The use of corrective orthotics does not rectify the deformity in the long term and is therefore not indicated if there are no symptoms. If the child has arch or tibialis posterior pain, then the easiest treatment is the use of custom-fitted orthotics from a qualified podiatrist. Surgical correction is rarely necessary in this age group except when rigid pes planus (possible tarsal coalition) is present or in severe deformities when symptoms are not alleviated by the use of orthotics.

The problem may worsen progressively with age, and many patients present later on with heel pain (plantar fasciitis), Achilles tendinitis, posterior tibial tendonitis, or forefoot deformities like hallux valgus. Some adults get a unilateral worsening of the condition when the tibialis posterior actually ruptures, resulting in worsening of the flat foot deformity.

As with children, the first line of treatment is non-surgical, again with the use of orthotics. In addition, for the relief of symptoms, other forms of treatment are also employed, eg, cortisone injections for plantar fasciitis. Persistent posterior tibial tendon dysfunction or PTTD syndrome (Figure 3) may need surgical correction if conservative measures fail.

Traditionally, the surgical treatment for pes planus is a triple fusion (subtalar, talonavicular and calcaneo-cuboid fusions). While this is effective, it results in a severely restricted and stiff foot with limited inversion and eversion; the procedure is best reserved as a salvage procedure and in the older patient. Now, the trend is to do limited foot fusions and soft tissue balancing to preserve inversion and eversion. The basic procedure is lateral column lengthening, with a bone block at the calcaneum or calcaneo-cuboid joint at the lateral side of the foot (Figure 4). Lengthening of the lateral column corrects the external rotation (lateral deviation) of the forefoot, and this in turn corrects the heel valgus and medial arch. It is very effective and good results are common. The downside is that it requires the patient to be in a cast for 6 weeks, with full recovery being achieved only after about 3 to 4 months. MG

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