

Traumatic dislocation of the fourth metatarsophalangeal joint

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INTRODUCTION

Acute dislocation of the first metatarsophalangeal joint (MTPJ) is an uncommon injury, but well reported in the literature (Armagan and Shereff, 2001). Traumatic dislocation of the MTPJ in the lesser toes, especially the third, fourth and fifth, is much rarer, with only a handful of case reports and reviews in the literature (Hynes et al, 1994; Brunet and Tubin, 1997; Leung et al, 2001). Non-acute dislocation and subluxation of the second MTPJ is a relatively common problem, which often arises as a result of deformities in the hallux, commonly hallux valgus (Coughlin, 1989).

DISCUSSION

The metatarsophalangeal articulations are ball and socket in nature, with rounded metatarsal heads and shallow sockets in the phalangeal bases. A complex arrangement of dense connective tissues maintain this articulation; these include a fibrous capsule, plantar ligaments (the so-called plan-

tar plate), deep transverse metatarsal ligaments, and collateral ligaments. The flexor tendons also appear to offer some stabilizing forces over the MTPJ.

Dislocation of these small joints is achieved when the digit is hyperextended and a significant load, such as the weight of the body, is placed over the joint. The dislocation most frequently results in lateral displacement of the proximal phalanx on the metatarsal head, although the phalanx may override the metatarsal and sit on its dorsal aspect.

Acute traumatic dislocation of the MTPJ of the lesser toes is uncommon for two fundamental reasons: the arrangement of tissues around this articulation make it an inherently stable joint and the digits in the foot are short, making hyperextension injuries over the MTPJ uncommon.

In uncomplicated dislocation of the lesser MTPJs, closed reduction of the joint is often achieved with simple traction of the dislocated digit under local anaesthetic. Up to 30% of MTPJ

dislocations are not reducible by closed means and will require open procedures (Brunet and Tubin, 1997). The commonest cause of failed closed reduction appears to be trapping of soft tissues between the two articular surfaces, in particular the plantar plate (Coughlin, 1989; Brunet and Tubin, 1997).

Figure 1. Initial radiograph demonstrating dislocation of the fourth metatarsophalangeal joint.



CASE REPORT

A 32-year-old man presented to the accident and emergency department 2 hours after twisting his ankle. He had been running down stairs, barefoot, and missed a step, inverting his left ankle and landing on the lateral aspect of his left foot before falling to the ground. He was weight-bearing on his left heel, but complaining of intense pain over the lateral aspect of his forefoot. He mentioned that his wife had noticed a dimple on the sole of his foot. Besides the dimple on the plantar aspect of the left foot, about 2 cm proximal to the base of the fourth toe, no other deformity, swelling or bruising was evident. The patient was markedly tender over the dorsum of the foot over the area of the fourth metatarsophalangeal joint and over the dimple, which marked the same place on the plantar surface. Distal sensation and capillary refill were normal.

Radiographs demonstrated a dislocation of the fourth metatarsophalangeal joint with lateral displacement of the proximal phalanx; no fractures or other dislocations were identified (Figure 1).

A local nerve block was established by instilling lignocaine either side of the fourth metatarsal bone, mid-shaft. As the patient was quite anxious, he was also given Entonox. The joint was easily reduced with traction being applied through the long axis of the fourth digit. The dimple was no longer evident, and a post-reduction radiograph confirmed realignment of the normal anatomy.

The patient was discharged without follow-up, although via personal communication has not experienced complication or recurrence.

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Where dislocation of the MTPJ is associated with fractures of the metatarsals open procedures are undertaken, and Kirschner wires offer additional stability, allowing bones to unite and connective tissues to re-model (Leung et al, 2001).

Clinical outcomes for patients who have had a closed reduction of an MTPJ dislocation is excellent (Brunet and Tubin, 1997). Patients who undergo open procedures are exposed to the complications of surgery and of Kirschner wires (if used), although they often have uncomplicated outcomes with regard to the initial dislocation (Coughlin, 1989).

In this particular case, the patient described a common twisting injury

to his foot. This resulted in an uncommon dislocation which was not considered clinically, but detected radiologically. The dimple on the plantar aspect of his foot was presumably puckering of the skin and subcutaneous tissues which were in communication with the structures around the joint and displaced with its dislocation.

Stable reduction of the joint was achieved by conservative means, and the patient has remained free from complications.

Forefoot fractures are not uncommon in the setting of minor trauma and radiographs are often requested for this reason. When reviewing forefoot radiographs, the continuity of bones at

their articulations should be considered, as well inspecting for fractures, as dislocation of the MTPJ can be very painful and debilitating, despite being easily treated. **HM**

Armagan OE, Shereff MJ (2001) Injuries to the toes and metatarsals. *Orthop Clin North Am* **32**: 1–10

Brunet JA, Tubin S (1997) Traumatic dislocations of the lesser toes. *Foot Ankle Int* **18**: 406–11

Coughlin MJ (1989) Subluxation and dislocation of the second metatarsophalangeal joint. *Orthop Clin North Am* **20**: 535–51

Hynes D, D'Souza LG, Stephens M (1994) Irreducible dislocation of the fifth metatarsophalangeal joint: a case report. *Foot Ankle Int* **15**: 625–6

Leung WY, Wong SH, Lam JJ et al (2001) Presentation of a missed injury of a metatarsophalangeal joint dislocation in the lesser toes. *J Trauma* **50**: 1150–2

IN THE PUBLIC'S VIEW...

You can't predict the press... or the government

In last month's *In the Public's View...*, I wondered why Danielle Reid, a 5-year-old murdered and dumped in a canal in Inverness, failed to make the headlines and barely registered on the internet. I implied it was because she had been murdered by those looking after her, and that she was not middle class. It is either not as simple as that, or else it is simple in the sense that there is no sense in what makes the headlines and what does not.

The *Herald* ('Scotland's best-selling quality national newspaper') reported the conviction for murder of Danielle's mother, Tracy, her boyfriend, Lee Gaytor, and his brother. We were on holiday in Scotland; it was front-page news, with a photograph of a pretty blond child, accompanied by an editorial about social services failing to pick up clues that might have saved Danielle.

Some aspects of the case were quite revolting: the mother, who is registered blind, helped her lover pull the weighted suitcase containing her daughter's body 3 miles across Inverness to the canal. Tracy contin-

ued to claim child benefit, apparently to buy drugs. In mitigation, Gaytor was known to be violent, and Tracy was in thrall and in fear of him. Despite these sensational aspects, the story failed to make the English newspapers. So is it that Danielle died in another country? That's what I then thought until, just after our return home, 14-year-old Jodi Jones was killed taking a shortcut near her home – in Dalkeith, just south of Edinburgh. The story was covered by all the English newspapers that I saw.

So it's a mystery. The press is a law unto itself, and I'm sure the irony has not escaped doctors that this still remaining self-regulated body has been among those pressing most ardently that doctors be better brought to heel.

On another note, *Panorama* ('Fiddling the figures', BBC1, 29 June) was a dispiriting affair. We all know the destructive effects of too many, over-prescriptive, national targets. We could have done without the programme's spooky music, but the facts spoke for themselves. Which was lucky, because most of those inter-

viewed didn't. The most telling aspect of the whole programme was the succession of actors speaking the words of managers fearful of ever getting another job. Half of those interviewed were described anyway as 'former NHS manager'.

In the world of commerce, of industrial espionage and profit margins, one could understand managers wanting to remain anonymous. Never mind whether targets are good or bad; never mind whether – as the government claims – the NHS would not have improved without them, or that targets were necessary to measure improvement: it is appalling that managers in a public service feel threatened in this way.

It fits a pattern. The government is scathing about totalitarian regimes and wishes to spread democracy by force around the globe. They are currently telling the BBC that they shouldn't report things the government would rather they didn't. Can irony-free control freaks such as they are really think we believe that they will leave foundation hospitals alone? **HM**

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