CORRESPONDENCE

We welcome letters to the Editor concerning articles which have recently been published. Such letters will be subject to the usual stages of selection and editing; where appropriate the authors of the original article will be offered the opportunity to reply.

Letters should normally be under 500 words in length, double-spaced throughout, signed by all authors and fully referenced. The edited version will be returned for approval before publication.

PLANTAR HEEL PAIN

Sir,

I read with interest the article in the January 1994 issue by Prichasuk on 'The heel pad in plantar heel pain' (1994; 76-B:140-2) in which he reported that heel-pad thickness was significantly increased in a group of 70 patients with plantar heel pain, compared with a control group of 200 normal subjects.

The measurement of heel-pad thickness by lateral radiography has many variables: the author dealt with magnification, the age, sex, height and weight of the patient and, of course, heel-pad pathology. An important variable, however, is the size of the foot, and the body-mass indices were different in study and control groups. Comparison of a size 12 foot with a size 5 foot must show different heel-pad thicknesses. Foot size should have been evaluated and matched evenly in the two study populations.

A simple measurement of the thickness of both heel pads in patients with unilateral heel pain allows direct comparison. A 'heel-pad index' can be calculated from the height of the heel pad (A) divided by the vertical height of the calcaneus (B) along a single vertical line at a standard site on a lateral radiograph (Fig. 1). This

index then allows valid comparison among feet of different size and eliminates the effect of different magnifications.

In 37 non-athletic patients with unilateral plantar heel pain, I found by this method no significant difference between the affected and non-affected sides or between these and an age- and sex-

matched control group of normal patients ($p > 0.2$; Student's *t*-test). Two-thirds of the patients with plantar heel pain were overweight.

The difference in heel-pad compressibility found by Prichasuk does allow valid comparison of the elastic or shock-absorbing properties of different heels. The decrease in elastic properties in plantar heel pain is interesting; it lends credibility to the theory that there may be an intrinsic abnormality of the heel pad in this enigmatic condition.

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Prichasuk S. The heel pad in plantar heel pain. *J Bone Joint Surg [Br]* 1994; 76-B:140-2.

Author's reply:

Sir,

I agree with Dr Howells that the size of the foot is an important variable. This is, however, related to body build which is clearly related to the height of the subject. I used the height of the subject.

Mr Howell's comment is supported by my finding that both the mean height and the mean heel-pad thickness were greater in male than in female patients. The average height, however, was smaller in symptomatic patients, while the heel-pad thickness was greater than in the control group. These findings strongly confirm my original conclusion.

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NEED FOR RANDOMISED TRIALS

Sir,

It was with a mixture of interest and concern that I read in the January 1994 issue the editorial entitled 'Making do without randomised trials' by Dorey, Grigoris and Amstutz (1994; 76-B:1-3). The authors have accurately diagnosed the malaise which afflicts our literature by correctly pointing out the deficiencies characteristic of many, if not most, orthopaedic publications. I was, however, disappointed in their conclusion that, in the absence of properly conducted clinical trials, we should resign ourselves to accepting the *status quo*.

While I concur that careful reading and interpretation of contemporary orthopaedic papers may advance our understanding in certain areas, most of these anecdotal reports are minimally more sophisticated than the observations made by surgeons a hundred years ago. I cannot accept the premise that the standard of scientific endeavour in orthopaedic surgery should or need be less than it is in other scientific fields simply because of the "problems of inadequate sample size, continuously changing surgical techniques, the difficulties of blind assessment and the need for patient consent".

We should meet the challenge to find new, innovative methods of studying important clinical issues. Greater co-operation between centres with common interests in the conduct of multicentre trials will solve the problem of small sample sizes. Most important, however, is the need to improve the understanding and knowledge

of orthopaedic surgeons in the areas of statistics and clinical epidemiology. This will allow trials which are appropriate in scope to be planned, executed and interpreted in a manner which can effectively answer the questions of surgeons, patients and insurers.

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Dorey F, Grigoris P, Amstutz H. Making do without randomised trials: editorial. *J Bone Joint Surg [Br]* 1994; 76-B:1-3.

CALCANEAL FRACTURE AND THE ANTERO-LATERAL FRAGMENT

Sir,

I read with interest the article by Langdon, Kerr and Atkins in your March 1994 issue entitled 'Fractures of the calcaneum: the anterolateral fragment' (1994; 76-B:303-5). This is the fragment which I described in 1989 (Carr, Hamilton and Bear 1989) and is probably the same as the "rod-shaped" cortical fragment described by Soeur and Remy in 1975. I also noted this fragment while operating on these fractures and was unable to find any information in the literature, hence my experimental study. I concur with Langdon et al that reduction of this fragment is important to prevent eversion, limitation of the heel and cuboid facet incongruity. It is an important landmark of the lateral column and fits snugly into place against the posterior facet fragment, thus serving as an excellent reference guide to the lateral reconstruction.

Unlike Langdon et al, however, I believe that this fragment can be visualised by a less extensile lateral approach, and in fact is fixed by many with a staple that crosses the coronal plane primary fracture line. I congratulate them on bringing further attention to this important aspect of calcaneal fracture.

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Carr JB, Hamilton JJ, Bear LS. Experimental intra-articular calcaneal fractures: anatomic basis for a new classification. *Foot and Ankle* 1989; 10:81-7.

Langdon LJ, Kerr PS, Atkins RM. Fractures of the calcaneum: the anterolateral fragment. *J Bone Joint Surg [Br]* 1994; 76-B:303-5.

Soeur R, Remy R. Fractures of the calcaneus with displacement of the thalamic portion. *J Bone Joint Surg [Br]* 1975; 57-B:413-21.

Author's reply:

Sir,

Thank you for showing me the letter and reprint from Dr Carr concerning the anterolateral fragment of a fractured calcaneum. I must confess that I was not aware of their article despite, I thought, having searched the literature on the subject quite extensively.

Their article describes an excellent anatomical study of the fracture which I read with great interest. It is particularly important since previous studies have suggested that it is not possible to reproduce a calcaneal fracture in vitro. My only additional comment would be that although it is feasible to expose the anterolateral fragment through a more limited direct lateral approach, it is not possible in my experience to reduce accurately and fix the posterior part of a fractured calcaneum through this approach.

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INTERNAL FIXATION OF CALCANEAL FRACTURES

Sir,

In their prospective study entitled 'Intra-articular fractures of the calcaneum treated operatively or conservatively' (1993; 75-B:932-7), Parmar et al report that the patients treated by surgery were immobilised for six weeks, while the conservatively managed patients were encouraged to move their subtalar and ankle joints actively immediately. They state that this difference had doubtful significance in the evaluation of the end results, claiming that there is no published evidence that early mobilisation improves results. They also point to their own findings that, despite early mobilisation, only four of ten conservatively treated patients with undisplaced articular fractures regained more than half of the normal range of subtalar motion.

The latter argument ignores their own evidence that, for criteria other than subtalar motion, such as freedom from pain and restoration of function, the results in this small subgroup were remarkably good.

The alleged lack of evidence that early mobilisation is beneficial is refuted by Giachino and Uthoff (1989) in their 'Current Concepts Review' of intra-articular fractures of the calcaneum. These authors state that "In displaced fractures immobilisation of the foot and ankle results in rapid fibrosis and stiffening of the damaged subtalar joint" and list six references in support. Admittedly, none of these papers meets the standard of a prospective, randomised investigation and the conclusion that immobilisation is harmful is founded on retrospective reviews comparing recent cases with old. Prolonged cast immobilisation, however, was widely practised until about 25 years ago when the principle of early motion of intra-articular fractures of the calcaneum, as well as of the knee and the ankle, gained increasing acceptance.

Parmar et al had difficulty explaining why open reduction and fixation of a displaced intra-articular fracture produced no better results than early mobilisation without correction of alignment. It seems probable that the potential benefit gained from fixation of the calcaneal fragments was significantly reduced by immobilisation for six weeks after surgery.

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Giachino AA, Uthoff HK. Intra-articular fractures of the calcaneus. *J Bone Joint Surg [Am]* 1989; 71-A:784-7.

Parmar HV, Triffitt PD, Gregg PJ. Intra-articular fractures of the calcaneum treated operatively or conservatively: a prospective study. *J Bone Joint Surg [Br]* 1993; 75-B:932-7.

Authors' reply:

Sir,

Thank you for allowing us to reply to Dr Schneider. Our paper actually states that "Our postoperative treatment included the use of a plaster cast, which delayed mobilisation of the foot for six weeks. There is no evidence in the literature that early mobilisation improves results, and we found that early mobilisation of the undisplaced fractures failed to preserve subtalar movement - this makes it unlikely that delayed mobilisation was an adverse factor in this group." The word 'results' in this context refers to mobilisation of the foot and not to pain levels or walking distance. The favourable results in the undisplaced subgroup for pain levels and walking distances may not be related to the state of the subtalar joint. They may be related, for instance, to the severity of soft-tissue injury. In any case, we have stated that undisplaced and displaced fractures seem to occur in slightly different populations.