THE PAINFUL HEEL

BY

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In orthopaedic surgery there are several conditions which, though not serious diseases, are not welcomed by the orthopaedic surgeon on account of their intractable nature. Though confident instructions are often given for the treatment of these conditions in textbooks, in practice the results of orthodox treatment are frequently disappointing both to the surgeon and to the patient, and it is therefore a matter of some relief when a method of treatment which appears to give consistently good results is discovered.

In my experience painful heel, of the type where the pain is located in the region of the postero-medial attachment of the plantar fascia to the os calcis, comes into this category, and, despite the use of various types of heel "sorbo" pads to take the weight off this area, the elevation of the heel of the shoe, or even erosion of the tender area surgically, the results are usually disappointing. The fact that a surgical attack upon a calcaneal spur had proved successful was considered important enough for a case to be shown at a London orthopaedic club (*J. Bone Jt Surg.*, 1954).

It is almost universally agreed, however, that the condition is one of chronic strain of the posterior end of the central part of the plantar fascia, initiated or aggravated by toxic conditions on some occasions, and sometimes associated with the presence of a calcaneal spur on the x-ray film. It is also now widely appreciated that the presence of such a spur is probably only the sign of there being, or having been, a chronic strain in this area, and that such spurs frequently exist without any symptoms either past or present. In the days when this spur was regarded as the cause of the pain, the logical method of treatment was to remove the pressure of the patient's body weight from this spiky area. Methods of treating the condition by heel pads are relics of that approach to the condition, but once it is appreciated

that in fact the strain which causes pain in this area is a longitudinal one working in the line of the plantar fascia, then obviously some other method of minimizing this strain is required.

Consideration of the anatomy of the plantar fascia (Fig. 1) shows that the main and apparently offending portion of the fascia is attached just medial to the vertical axis of the peritarsal joint (Shephard, 1951). It seems logical, therefore, that the strain can be relieved by some form of insole which tilts the heel and relaxes this portion of the fascia.

For the past two years I have been using an insole (Fig. 2) originally designed, I believe, by Mr. A. O. Parker, of Cardiff, and designated by him a convex wedge. Whilst at first sight it would appear that this appliance presses on the plantar fascia and would increase the tension in the tender area, in practice the result of this treat-

FIG. 1.—Plantar fascia after Gray. The insertion of the central part posteriorly on the medial side of the os calcis is to be noted. A, medial part; B, central part; C, lateral part.

ment has been so consistently good that I would sooner abandon the theory of its effectiveness than the method of treatment.

In the past two years I have seen 17 cases of painful heel varying in duration from two to twenty-four months. All of these have been relieved by the use of this insole, and in all but three cases relief has been such that by the time the insole has worn out they have not required a further insole. It has therefore become my practice to supply this insole, see the patients again in six weeks' time for confirmation of the results of therapy, to ask them to wear the

FIG. 2.—View of the insole from the medial aspect.

insole until it wears out, and only to see me again if they are not cured in this time. All the patients have been willing to do this, as within seven days of having the insole they have found that relief is being obtained, and they feel confident that the condition is slowly but steadily being alleviated. In three cases where more than one insole has been supplied (in fact, up to date they have applied for only one replacement each) it has been to people who had the condition for a considerable time before receiving treatment and who are heavy walkers.

This insole was supplied to me by Messrs. R. Taylor and Son, 50, Bath Road, Walsall.

REFERENCES

- J. Bone Jt Surg.*, 1954, 36B, 670.
Shephard, E. (1951). *J. Bone Jt Surg.*, 33B, 258.

PHARMACOLOGICAL STUDIES ON
LEAD E.D.T.A.

BY

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A recent communication by Sapeika (1955) on use of "the water-soluble chelated compound lead ethylenediamine tetra-acetic acid" (Pb E.D.T.A.) as a contrast medium describes the intravenous administration of the disodium complex (PbNa₂ E.D.T.A.) to four human subjects. We wish here to record some animal experiments carried out at these laboratories in 1953, when we were investigating the potentialities of this substance for radiography, as well as some subsequent studies. Polarographic analyses showed that the samples of PbNa₂ E.D.T.A. used in our experiments contained less than 0.01% of ionized lead.

In aqueous solution, this chelated compound is decomposed by sulphides and forms a black precipitate; we were not surprised to find that the faeces of animals dosed with PbNa₂ E.D.T.A. turned black, as Sapeika recorded of his patients' stools, but we are not clear why he found it necessary to invoke enzymatic decomposition to account for the observation.

Toxicology and Excretion Rates

The acute intravenous LD₅₀ of PbNa₂ E.D.T.A. was determined in two different strains of mice (A2G and GFF)