Effect of Acupuncture Treatment on Heel Pain due to Plantar Fasciitis

Summary
Eighteen patients attending an orthopaedic outpatient clinic with a year or more's history of heel pain due to plantar fasciitis were studied. All had had conservative treatment of physiotherapy and shoe-support without significant pain relief before acupuncture was offered, and thus acted as their own controls for the purposes of the study. The following traditional points were needled: Taixi (KI.3), Kunlun (BL.60) and Sanyinjiao (SP.6). Pain was assessed by a 100mm visual analogue scale (VAS) before treatment was started and after four, weekly sessions of acupuncture treatment. If complete pain relief was not obtained by the initial four-week treatment, a further two, weekly sessions of the above mentioned acupoints, with the addition of trigger point acupuncture in the gastro-soleus and plantar fascia, was carried out and pain assessed.

Patients were also assessed with a verbal rating score to indicate the percentage improvement after acupuncture compared to before treatment. The mean duration of heel pain was 25.11 months (SD 10.68). The VAS data obtained at 4 and 6 week of acupuncture treatment showed a statistically highly significant improvement compared to the VAS before acupuncture (p < 0.0009 and p < 0.0001 respectively). Using the Mann-Whitney test, there was a statistically significant difference in VAS obtained at 6 weeks, after trigger point acupuncture had been added for poor responders, compared to that obtained after the first 4 weeks of acupuncture treatment (p < 0.047). Our study demonstrates that acupuncture is effective in treating patients with chronic heel pain due to plantar fasciitis and that the addition of trigger point acupuncture in poor or non-responders may be useful.

Key words
Acupuncture, Chronic heel pain, Clinical study, Plantar fasciitis, Trigger point stimulation.

Introduction
Acupuncture remains a controversial method of treatment, and one of the most contentious issues is whether it can have specific effects on health (1). Many modalities of treatment are used for chronic pain and acupuncture is one of the most popular, with minimal side effects (2-4). Though the mechanism of action is still unclear, there is no doubt regarding its favourable place in the treatment of chronic pain (5,6). In a long term study by Christensen et al., acupuncture used for treatment of severe osteoarthritis of the knee was not only effective in relieving the discomfort while waiting for operation, but also reduced the need for the surgery (7). There is some evidence that acupuncture is of benefit in foot and ankle disorders (8-10) and the use of trigger points in the treatment of foot and ankle pain is well recorded (11-13). The present study was designed to investigate the effects of acupuncture in patients with chronic heel pain of more than one-year's duration due to plantar fasciitis.

Method
Eighteen consecutive patients who attended the orthopaedic outpatient clinic at Bedford Hospital NHS Trust during the 6 month period between September 1997 and February 1998 with a history for one year or more of heel pain due to plantar fasciitis and who were willing to participate in the study were included. All had had similar conservative treatment without benefit, and were therefore able to act as their own controls for the purposes of the study. Patients who had had operative treatment previously or steroid injection into the painful area in the last three months were excluded from the study.

After obtaining verbal consent from the patients, acupuncture treatment was carried out on the affected side, one session per week for four consecutive weeks. The acupoints used were Taixi (KI.3), Kunlun (BL.60) and Sanyinjiao (SP.6). Standard sterile disposable one-inch acupuncture needles were used with aseptic technique. A tingling sensation (de qi) was sought at all points. The needles were left in place for 15 minutes, being manually stimulated for about 5 seconds every 5 minutes and just before removal.

Pain was assessed before the start of treatment and again after an initial 4 weekly sessions of acupuncture treatment using a 100mm linear visual analogue scale (VAS) with 0 representing no pain and 100 the worst imaginable pain. If complete pain relief was not obtained by the initial four-week treatment a further 2 weekly sessions needling the above mentioned classical acupoints plus trigger points (TP) in the gastro-soleus and plantar fascia...
were carried out and pain assessed. After 4 and 6 weeks of acupuncture treatment patients were also asked to state verbally the percentage improvement in pain (verbal rating score) compared to before treatment.

**Results**

Of the 18 patients included in the study 13 (72.2%) were female and 5 (27.8%) male, with a mean age of 49.17 years (SD 10.66). Ten patients had treatment for right heel pain, 5 for left and 3 for bilateral. The duration of pain varied between 12 and 30 months with the mean being 25.11 months (SD 10.68). All patients had had conservative treatment consisting of physiotherapy and shoe-support with no significant pain relief before being included in the study. They were thus acting as their own controls. Twelve patients had also had hydrocortisone injection into the heel at least 3 months prior to the study, with no significant improvement. The VAS and verbal score data obtained is shown in Table 1. The VAS data obtained at 4 and 6 weeks of acupuncture treatment were analysed using the Mann-Whitney test and were found to be statistically highly significant compared to the VAS before acupuncture (p < 0.0009 and p < 0.0001 respectively). There was a statistically significant difference in the VAS obtained at 6 weeks (after TP acupuncture treatment had been added for two weekly sessions) compared to that obtained after the first 4 weeks of classical point acupuncture treatment (p < 0.047). The verbal pain score in terms of percentage improvement after acupuncture treatment was started is summarised in Table 2.

**Discussion**

Our study demonstrates that acupuncture is effective in treating chronic heel pain due to plantar fasciitis.

**Conclusion**

It could be that the results of this study are in part due to a placebo effect, but the statistical
significance reached makes this unlikely. Addition of TP acupuncture in poor or non-responders may be a useful option; indeed it may reduce the average number of treatments required if TP acupuncture is used from the start in all patients.

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References
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