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Editorial

Transducing Shock Waves' Effect on Calcaneal Bone Spurs

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EDITORIAL

Chronic proximal plantar fasciitis causes pain and discomfort on the inferior surface of the heel, which appears quickly after getting out of bed. In at least half of individuals with heel pain, an inferior calcaneal bone spur adjacent to the plantar fascial enthesis is present. This spur could be caused by changes in fascial mechanics (tensile variations in the fascia as a result of sclerosis and thickness), inflammation, or mechanical stimulation from the plantar soft tissues. The characteristic heel discomfort is unlikely to be caused by a heel spur. A partial surgical release of the medial plantar fascia without resection of the heel spur is recommended in the majority of current surgical studies. Heel spurs have also been seen in 10–27% of asymptomatic patients who had their feet or ankles radiographed for reasons other than heel pain. Extracorporeal shock wave application to musculoskeletal tissues (Orthotripsy) leads in symptom clearance or improvement in a significant number of patients. An additional nonincisional technique for treating various musculoskeletal problems has been used in Europe since 1990 and is receiving increasing prominence in Asia and the United States since the Food and Drug Administration approved several devices in 2000. In FDA-approved studies, 364 patients were given either high-energy electrohydraulic extracorporeal shock waves or a placebo treatment using the OssaTron (HealthTronics, Marietta, GA). The patients in the study all had persistent pain in the inferior heel around the proximal insertion of the plantar fascia. All of the patients had discrete point soreness at the plantar enthesis, according to the examination. Despite the fact that a few patients complained of bilateral heel discomfort, they all received just unilateral treatment. The patient cohort includes patients from both the randomised and nonrandomized groups. Following FDA approval, another 71 nonrandomized patients were treated for orthopaedic surgery with the OssaTron (no patients in this group were randomised to sham treatment).

A total of 435 people were studied prospectively, with 308 getting shock waves and the rest getting sham treatments. Each radiograph was examined for any osseous deformities involving the calcaneus before and after shock wave treatment. Furthermore, each radiographic picture before and after therapy revealed the presence of inferior calcaneal spurs. Similar posterosuperior heel spurs at the enthesis of the Achilles tendon were not evaluated in this experiment because they were not examined for the e line of the shock wave energy application. Patients got one or two Orthotripsy treatments while under conscious sedation or ankle block anaesthesia. At least 3 months must pass between the first and second treatments. Each heel got 1500 18 kV (0.22 mJ/mm2) shocks at a rate of two shocks per second throughout the FDA examination (2 Hz). The heels were subjected to 1500 20 kV (0.27 mJ/mm2) shocks administered at a rate of four shocks per second in the post-FDA study (4 Hz). The Roles and Maudsley scoring system was used to assess patients at three and twelve months.

In 283 (65%) of the 435 people studied, a radiographically evident inferior calcaneal bone spur was discovered. In the therapy group of 308 patients, 205 patients (67%) had an inferior calcaneal spur apparent on at least one radiograph, while 103 patients (33%) had no evidence of a spur on radiographs. In the 127 patients who had sham treatment, 78 patients (61%) developed a spur, while 49 patients (39%) showed no signs of a spur. The size of the heel spurs ranged from 1 to 18 mm, with the majority ranging between 2 and 5 mm. Because we didn't have complete control over the radiologic position, we didn't link the size of the spur to the end consequence.

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