

HEEL SPUR SYNDROME PLANTAR SURGICAL APPROACH

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Heel Spur Syndrome is really a misnomer, as the plantar spur itself is generally not the cause of the primary symptom complex. Plantar fasciitis may be a more accurate description. The mechanism of pain has been attributed to plantar fasciitis, adventitious bursa, vascular engorgement and/or neuroma/neuritis. Plantar fasciitis is considered to be the most common etiology for a number of reasons. Most commonly, the pain is localized to the medial plantar tuber. The pain is generally of a post-static dyskinetic type (temporary pain occurring when weight is born on the foot after resting, ie. weightbearing first thing in the morning.) In more significant cases, the pain also occurs after prolonged or vigorous weightbearing.

Although systemic arthropathies can cause heel pain and should be ruled out, it is very unusual for these symptoms to manifest primarily in the anterior medial tuber area. The symptoms can be commonly seen in the mechanically uncontrolled pes cavus foot and the pronated foot. In approximately 95% of the cases, symptoms can be controlled by conservative means. The inflammation is generally controlled with NSAIDs, local cortisone injections, and/or physical therapy modalities such as ultra sound, H-wave, or ice massage. Strapping and padding (such as low dye rest strap and whale's tail padding), and/or heel cups are used for temporary support. Functional orthoses are usually necessary for more long term control to neutralize the mechanically abnormal foot structure. In the cavus foot with a prominent medial fascial band,

fascial accommodation or grooves often must be built into the orthoses.

The shelf-like spurring on the inferior distal surface of the calcaneal tuber is generally not the cause of the patient's pain. Many times, very large plantar calcaneal spurs can be identified on standard lateral radiographs of patients that are totally asymptomatic. (Fig. 1A). Not infrequently, there is a complete absence of radiographic evidence of a calcaneal spur in a patient with acute plantar heel pain or fasciitis. (Fig. 1B) And finally, when conservative therapy is effective in resolving the symptoms of plantar fasciitis, the asymptomatic spur does not resorb but universally remains radiographically visible.

In the past, surgical intervention for heel spur syndrome was a common form of treatment even before exhaustion of more conservative forms of therapy. When surgery was performed, the usual technique included complete release of the plantar fascia at its calcaneal insertion and removal of the plantar spur from the calcaneal tuber. Rare but significant complications such as fracture of the calcaneus and delayed healing or infection are described. (Fig. 2A, B) These complications were generally attributed to the amount of bone removed during the procedure or other aberrations of surgical technique. Nerve entrapment, protracted pain and failure to resolve the primary complaint are other sequelae that have lead many surgeons to refrain from early surgical intervention.

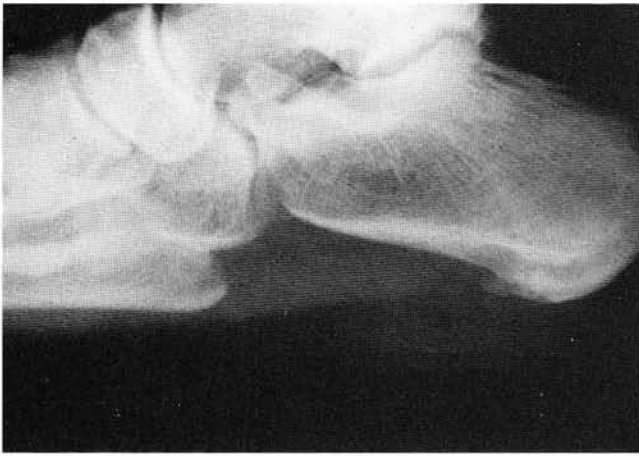


Fig. 1A. Plantar calcaneal spur in an asymptomatic patient.



Fig. 1B. Absence of calcaneal spur in a symptomatic patient.

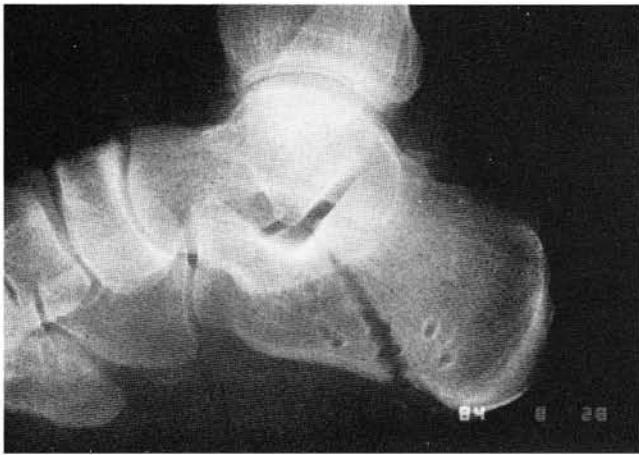


Fig. 2A. Calcaneal fracture following resection of plantar spur and drilling.



Fig. 2B. Wound dehiscence and infection following plantar fasciotomy and calcaneal spur resection.

THE AUTHOR'S TECHNIQUE

In the past 5-6 years, the author has successfully employed a singular plantar fasciotomy technique to relieve the primary symptoms of the common Heel Spur Syndrome. Functional orthoses are still generally required postoperatively.

The technique is performed through a small stab incision placed plantarly or directly over the fascial insertion into the calcaneal tuberosity. (Fig 3A, 3B). A hemostat is used to spread through the subcutaneous tissues. The medial and lateral borders of the plantar fascia and the specific attachment of the fascia to the calcaneal tuberosity are identified with the blunt spreading technique (Fig. 3C). Any neuro-vascular bundles are also mobilized and preserved.

Once the fascial insertion has been identified, a #67 Beaver blade is used to identify the bone of the calcaneal tuberosity (Fig. 3D). The toes

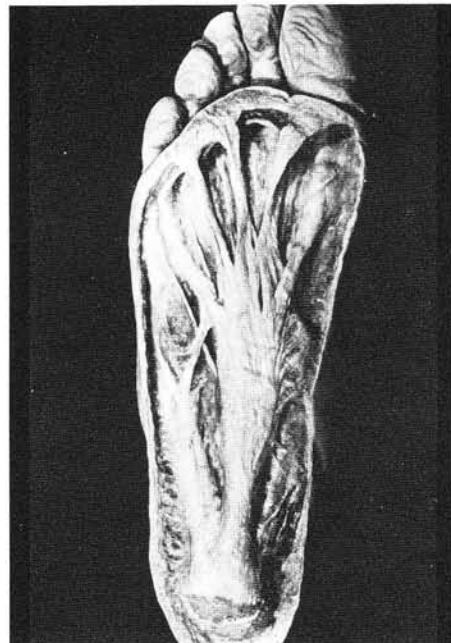


Fig. 3A. Demonstration of the plantar fascia and the primary calcaneal attachments.

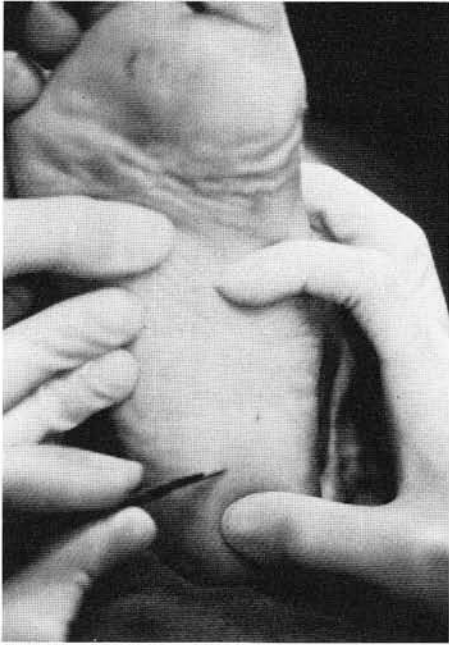


Fig. 3B. Incision placement for the author's technique.

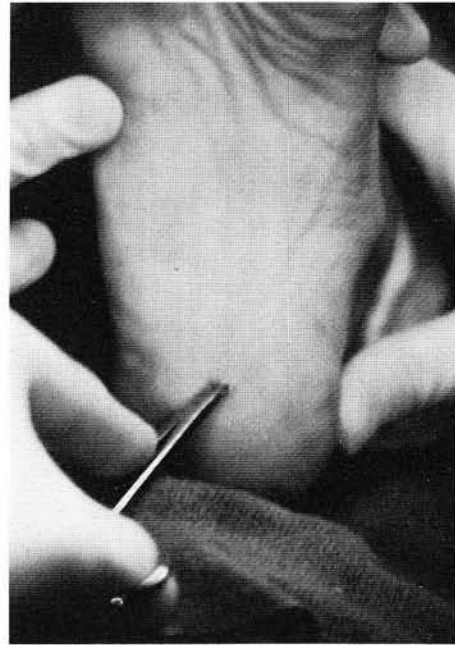


Fig. 3C. Hemostat dissection and identification of the plantar fascia by direct instrument palpation.

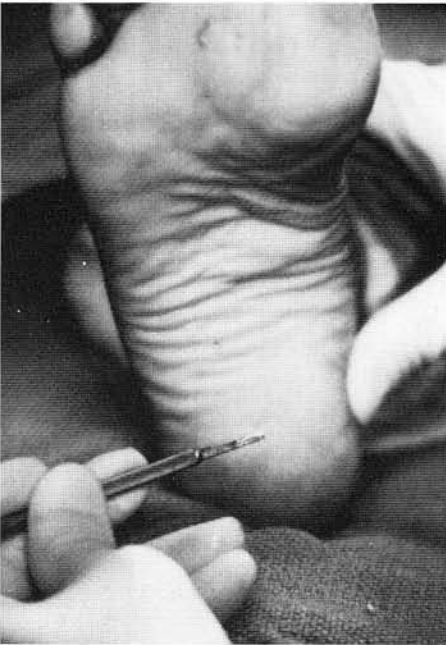


Fig. 3D. #67 Beaver blade utilized for fasciotomy.

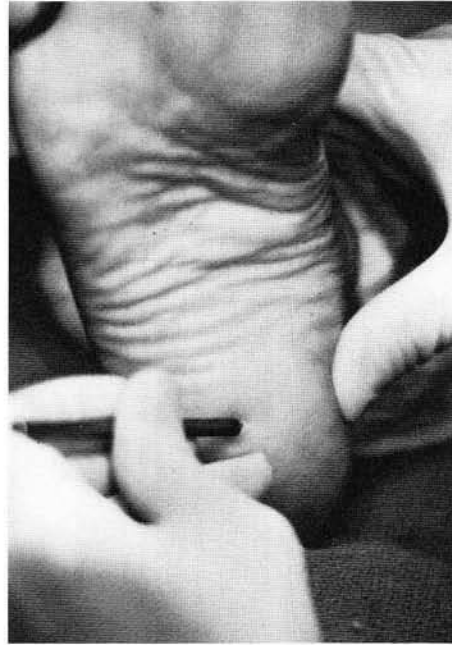


Fig. 3E. Transection of the plantar fascia at its insertion into the calcaneal tuber.

are dorsiflexed, tightening the fascia. The fascia is then sectioned at its insertion (Fig. 3E). The knife blade is carried from medial to lateral across the anterior margins of the calcaneal tuber to release the entire attachment of the plantar fascia. Upon release, the fascia can be felt to move freely from its primary attachment to the calcaneus. There are muscle attachments which may remain intact and the surgeon, when performing the procedure for the first time may mistake these muscle fibers for residual fascial attachments. If there is a question, a hemostat can be reintroduced to make sure that there is a complete release of the fibers from the medial and lateral margins of the calcaneal tuber. The skin incision can be closed with two simple interrupted sutures.

There may be a concern about violating the calcaneal branches of the posterior tibial artery

and nerve with this approach, however, this has not been identified as a complication of this technique to date.

Follow-up care is similar to that seen with neuroma surgery. However, the patient usually feels an aching and fatigue in the plantar arch region for a short time. This sensation is due to the release of the plantar fascia. Occasionally, the patient may develop a temporary increase in pain at 3 to 4 weeks postoperatively. It can be neuritic or aching in nature. Occasionally, the neuritic pain is located in the lateral or lateral plantar aspect of the rearfoot. Once the patient is supported (the author uses a Berkemann forefoot ace wrap and a long metatarsal pad in the shoe), the symptoms will resolve. Within 3 months, the patient is usually functioning quite well in orthotics with minimal symptoms.