

# Minimally Invasive Retrocalcaneal Heel Spur Surgery

By Don Peacock DPM, MS

Retrocalcaneal heel spur, also known as insertional Achilles tendinopathy, can be an unbearable deformity for patients. The malady commonly occurs with other heel conditions such as bursitis, Haglund’s deformity, equinus and Achilles tendinopathy. The etiology is multifaceted and is caused by a combination of influences, including biomechanical faulting, inappropriate footwear, overactivity and a horde of other reasons. The onset can be abrupt or may develop over a period of weeks or years.

Countless patients respond to rest and conservative care while others require surgical intervention. The drawback with traditional surgical retrocalcaneal heel spur intervention is the associated long recovery. While there is no standard postoperative protocol, most surgeons advocate a period of non-weightbearing followed by a phase of partial weight bearing in a below knee cast.

As a general rule, the author places traditional surgical retrocalcaneal heel spur patients in a non-weightbearing cast for three weeks followed by a partial weight-bearing cast for an additional three weeks. At six weeks the patients are placed in a cam walker with instructions for reduced activity for an additional six weeks. This protracted recovery makes the intervention impractical for some patients. There is a crucial need for an effective, less invasive correction.

Current literature has focused attention on minimally

invasive surgical interventions of foot and ankle problems, and the retrocalcaneal heel spur deformity is no exception. A published small sample (N = 12) comparative study article contrasted the ultrasound-guided MIS resection of retrocalcaneal bursitis to the traditional open resection. (*The Journal Foot and Ankle Surgery*, volume 58, issue 5 September 2019, pages 855–860, Chung-LI Wang MD, PhD, et al.). The study yielded better AOFAS scores with the minimally invasive approach vs. the traditional approach when evaluated at two months post-op.

Diagnosis of the condition is usually made by physical exam and x-ray. Enlargement of the posterior superior calcaneus is common and should be addressed for the best outcome. Preoperative x-rays include weight-bearing AP and lateral views as well as a ski jump view. The ski jump view will furnish the surgeon with an assessment for how wide the spur is (Fig 2).

In this presentation the author outlines a minimally invasive technique to remove the retrocalcaneal heel spur deformity and associated hypertrophy of the posterior superior portion of the calcaneus without detachment of the Achilles tendon. The author has performed 12 of these procedures to date. The MIS procedure has displayed better VAS scores at four weeks compared to traditional open procedures. The MIS patients were able to immediately weight bear in a cam walker after the surgery. The complete recovery for the minimally invasive approach is approximately six weeks

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Figure 1: Lateral x-ray displaying retro-calcaneal heel spur and enlargement of the posterior superior calcaneus, often referred to as a Haglund’s deformity. Careful inspection shows the Achilles tendon anterior to the spur and attached to the plantar proximal portion of the non-diseased calcaneus.



Figure 2: Ski jump view helps in determining the width of the spur.



Figure 3: View of the patient on the operating room table showing the prominence in the posterior heel.



Figure 4: Fluoroscopy view of posterior heel spur prior to surgery.

Figure 5: The first two incisions are made lateral and medial to the Achilles tendon. The incisions are also deep to the



Achilles tendon. This allows for introduction of a Locke elevator to remove the soft tissue including partial attachment of the Achilles distal to the posterior superior enlargement of the calcaneus.

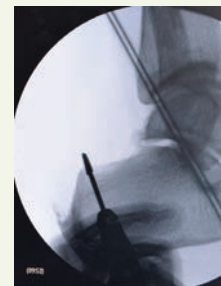


Figure 6: Removal of the posterior superior aspect of the enlarged calcaneus utilizing a 3.1 bur.

**Heel Spur Surgery** *(continued)*

compared to 3-6 months for the open procedure.

The MIS technique should be limited to patients that have mild to moderate spurring with underlying Haglund's and retrocalcaneal deformity. Most patients that have a retrocalcaneal heel spur have an underlying Haglund's deformity or display enlargement of the posterior dorsal calcaneal anatomy that pinches the tendon during dorsiflexion. In light of this, it is important to remove the posterior heel spur

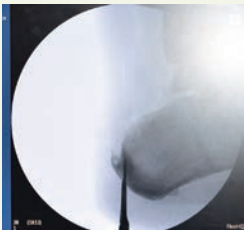


Figure 7: Shows the fluoroscopy view of the posterior heel after reduction of the superior posterior calcaneus.



Figure 8: Photo showing the two superficial incisions made superficial to the posterior heel spur allowing for reduction of the retrocalcaneal spur.



Figure 9: Locke elevator is used to remove the soft tissue from the superficial portion of the posterior heel spur. This allows for removal of the spur between the spur and the posterior calcaneus. This maneuver does not disrupt the Achilles insertion between the spur and calcaneus.



Figure 10: Soft tissue freed from the superficial portion of the retrocalcaneal heel spur utilizing a Locke elevator.



Figure 11: Using the 3.1 bur to remove the retrocalcaneal heel spur without detachment from deep insertion of the Achilles.



Figure 12: removal of Haglund's portion of the deformity along with removal of the retrocalcaneal heel spur.

and the dorsal calcaneal deformity inferior to the Achilles. Patients with extensive tendon calcifications and tendinosis are not candidates for the MIS technique.

To achieve adequate resection of the deformities four 1 cm incisions are required. Two incisions are made laterally and medially deep to the Achilles tendon attachment (Fig 5). Two additional 1 cm incisions are made both medial and lateral superficial to the Achilles tendon attachment (Fig 10). Soft tissue is freed from both areas by blunt dissection using a Locke elevator.

Complications such as accidental complete detachment of the tendon should be considered. The procedure is best performed by surgeons who are experienced at both minimally invasive techniques and open traditional posterior heel spur resection. This includes the ability to detach and reattach the Achilles tendon via bone anchors or a suture bone pass if needed. The author shows a photographic sequence of the procedure (Fig 1-12).

**Description of Procedure and Case**

After examination of appropriate x-rays including AP, lateral x-rays and ski jump views the surgery is performed. Figure one shows the typical x-ray findings and displays a retrocalcaneal heel spur along with an enlargement of the posterior superior calcaneal bone (Fig 1). The extent of the width of the posterior spur is examined by ski jump view (Fig 2). Figure three shows the clinical presentation of the posterior heel spur (Fig 3). A fluoroscopy view was obtained to help guide incision placement and to view the posterior heel spur at the time of surgery (Fig 4). A 1 cm incision is made both medial and lateral deep to the Achilles tendon. The tendon is freed from the underlying bone, being careful not to totally detach the Achilles, using a Locke elevator (Fig 5). The next step is to remove the posterior superior prominence of the calcaneus using a 3.1 bur (Fig 6). Figure 7 shows the fluoroscopy result of removing the posterior superior prominence. A superficial 1 cm incision is made both medial and lateral to assess the superficial portion of the posterior heel spur. A Locke elevator is used to free the soft tissue from the retrocalcaneal spur (Fig 8, 9 and 10). Removal of the retrocalcaneal spur is performed using a 3.1 bur (Fig 11). The final outcome can be seen with this fluoroscopy view showing removal of Haglund's portion of the deformity along with removal of the retrocalcaneal heel spur (Fig 12). The patient has remained pain-free for 12 months.

For more information on MIS, visit [aafas.org](http://aafas.org) or click here.



**Dr. Don Peacock** is board certified in foot surgery by the ABFAS and in minimally invasive foot and ankle surgery by the ABMSP. He has been in practice in his hometown of Whiteville, NC for 22 years. Dr Peacock uses both

traditional and MIS procedures in his practice. He learned the techniques of MIS foot surgery from the Academy of Minimally Invasive Foot and Ankle Surgery and is a full professor in the organization.