

# SURGICAL EXCISION OF THE HAGLUND'S DEFORMITY

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## LITERATURE REVIEW

A historical review of the evolution in the diagnosis and treatment of Haglund's deformity provides contributions from many authors. Although not the first to describe the symptomatic posterio-superior "pump bump", Patrick Haglund (1928) is credited with the distinction.

Radiographic diagnosis of Haglund's deformity was initially established by Fowler and Philip in 1945. They believed that a structural calcaneal deformity was the primary etiology, and correlated angular measurements to assess the degree of posterior deformity. Since that time, several authors have presented a more accurate structural assessment of Haglund's deformity by combining the Fowler/Philip angle with the calcaneal inclination angle. Fuglsang and Torup first discussed this combination in 1961, followed by Ruch in 1974, and Vega et al. in 1984. Fiamengo, in 1982, correlated the length of the calcaneus with the Fowler/Philip angle to assist in his diagnosis. During this time, Pavlov presented a new radiographic angle to assess the prominent bursal projection of the calcaneus, the parallel pitch lines.

Resection of the prominent bump has been discussed through a variety of approaches. Fowler and Philip advocated making an incision directly through the achilles tendon, while Steffensen and Eversen were the first to described a lateral incisional approach to the calcaneus. Duvries, in 1965, also supported the lateral approach while Dickinson et al. approached the deformity from the medial side.

In addition to isolated resection of the postero-superior prominence, Zadek described a dorsal closing wedge osteotomy of the calcaneus in 1939. In 1965, Keck and Kelly reported a 27-year follow-up of the dorsal closing calcaneal osteotomy. The osteotomy functions to decrease the calcaneal prominence, reduce the Fowler/Philip angle, and shorten the calcaneal length.

## POSTOPERATIVE MANAGEMENT

In the immediate postoperative period, the patient is placed in a below-knee dressing and kept non-weight bearing to minimize swelling and pain. A Jone's compression dressing is recommended to control edema and provide support. A dressing change is performed at 3 to 5 days postoperatively. The final dressing is applied at this time.

If the primary insertion of the tendo Achillis is left intact during surgery, then the patient is placed in a non-weight bearing below-knee cast for 3 weeks. Strict non-weight bearing is not critical, however it is recommended in an effort to minimize postoperative pain and swelling. Partial weight bearing to tolerance is also acceptable. The eventual progression to full-weight bearing upon cast removal is case dependent, and left to the surgeon's discretion.

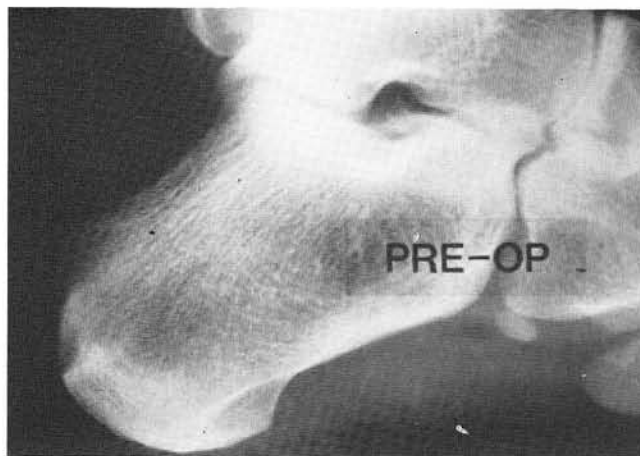
If significant disruption of the primary Achilles insertion occurs during surgery, the patient should remain non-weight bearing in a below-knee cast for 6 to 8 weeks.

As the patient begins rehabilitation following cast removal, additional support to the surgical

area is maintained with compression (Compro ankle brace) or secondary splinting such as an air stirrup. Physical therapy consists of gait training,

whirlpool treatments, and range of motion and muscle strengthening exercises. Ultrasound therapy and NSAIDs can also be used as needed.

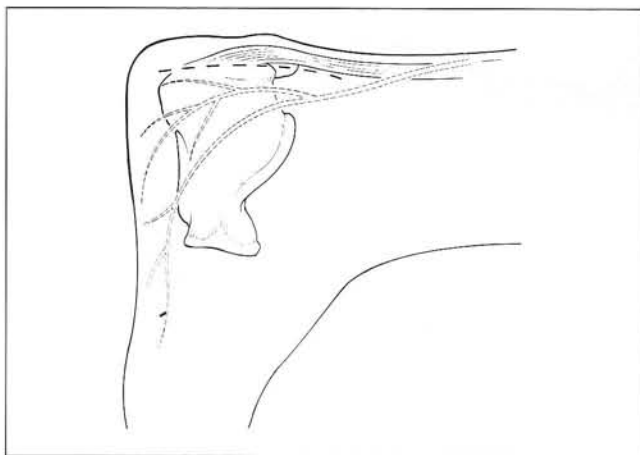
### ILLUSTRATED CASE STUDY



**Figure 1.** Preoperative radiograph of a clinically symptomatic Haglund's deformity. No gross calcaneal prominence is evident, however an increased calcaneal inclination angle (CIA) is apparent.



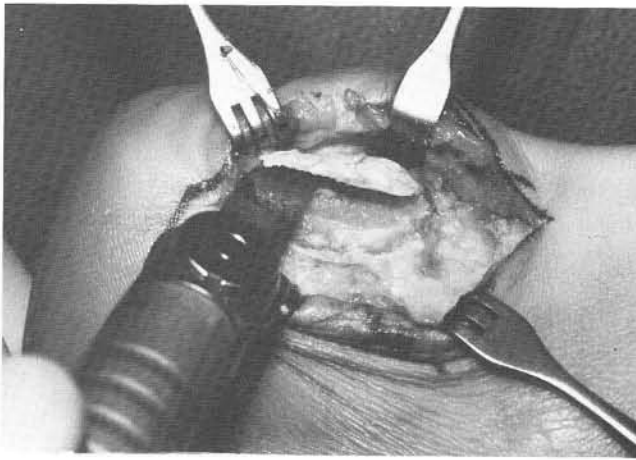
**Figure 2.** Placement of the skin incision for a lateral approach to the posterior calcaneus.



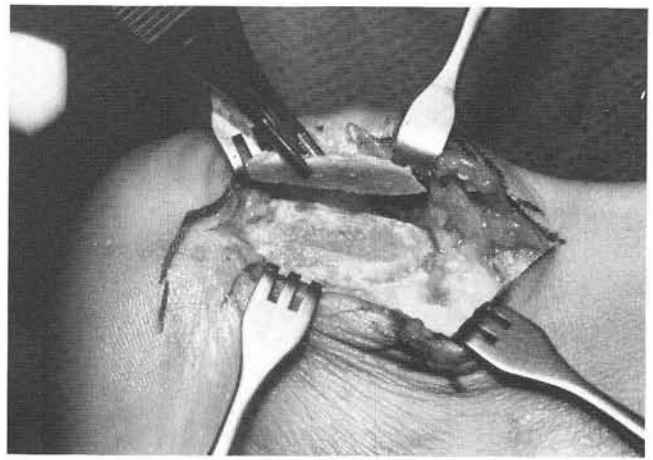
**Figure 3.** Diagram of the skin incision for a lateral approach to the posterior calcaneus. It is critical to place the incision at the anterior edge of the achilles tendon.



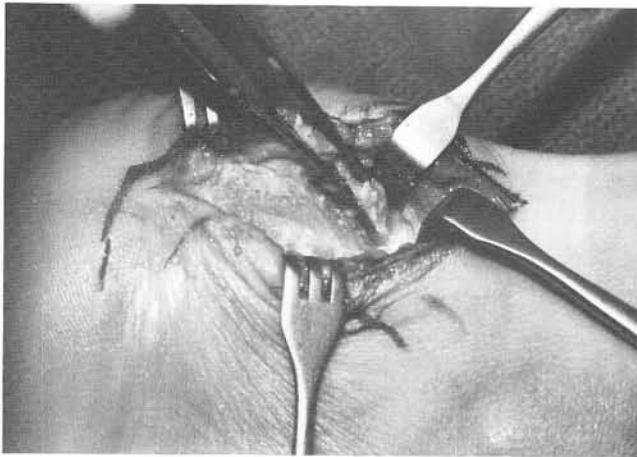
**Figure 4.** Dissection through the subcutaneous layer is demonstrated. The deep fascia layer identified at this level is a combination of the lateral expansion of the retinaculum and attachments to the tendo Achillis.



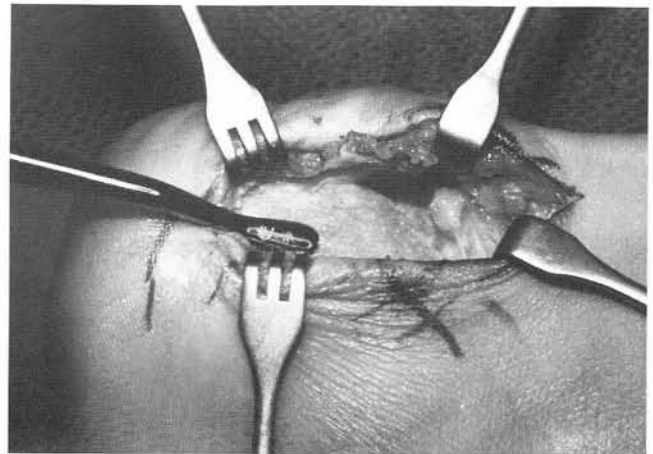
**Figure 11.** Initial resection of the postero-lateral corner of the os calcis.



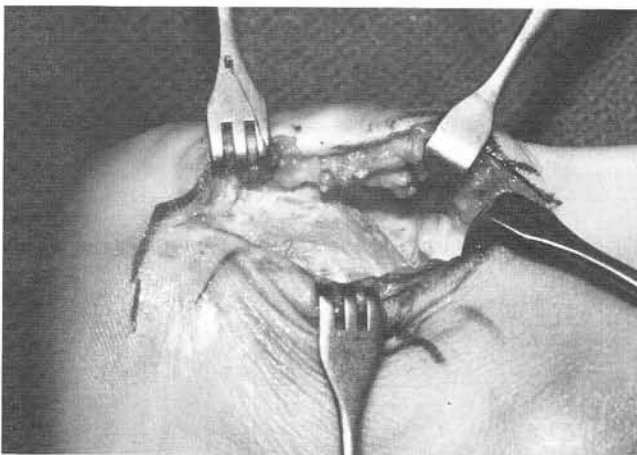
**Figure 12.** Adequate resection of the postero-lateral surface.



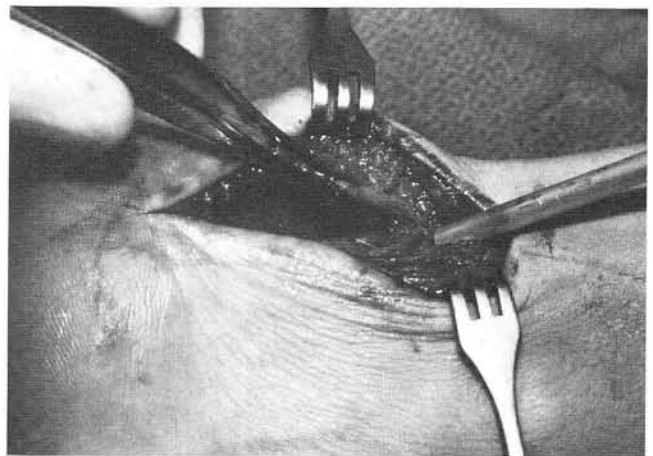
**Figure 13.** Resection of the superior corner of the os calcis, reducing the postero-superior prominence of the os calcis.



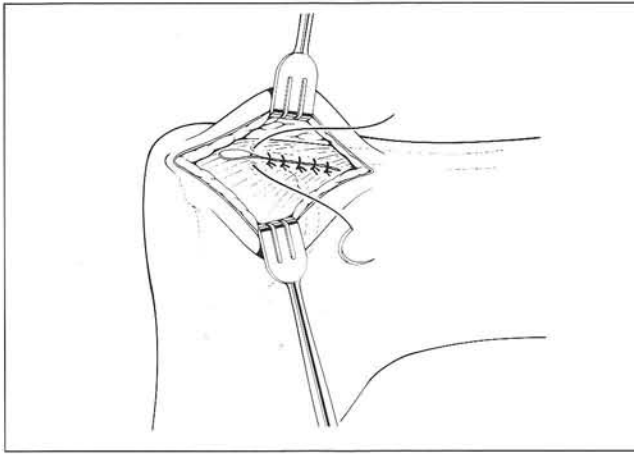
**Figure 14.** A rasp is used for final contouring and smoothing of the posterior-lateral and superior surfaces of the os calcis.



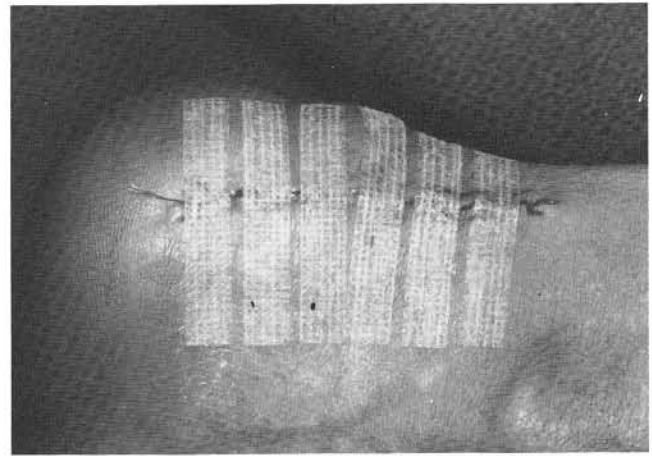
**Figure 15.** Final resection of the os calcis.



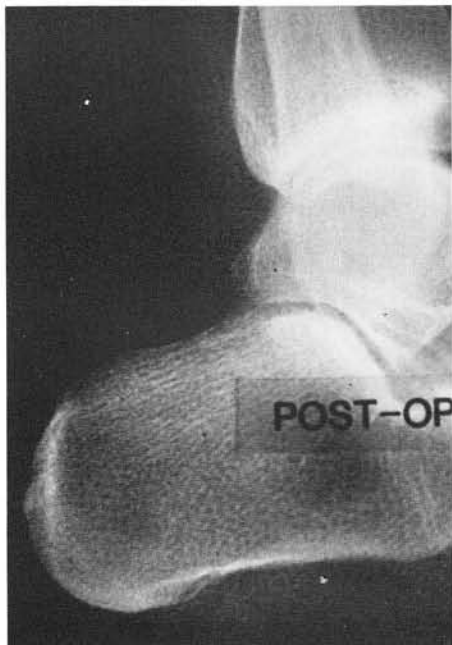
**Figure 16.** Following deflation of the tourniquet, the lateral deep fascial layer and lateral expansion of the insertion of the Achilles tendon are repaired.



**Figure 17.** Diagram demonstrating closure of the lateral deep fascia to the lateral expansion of the insertion of the tendo Achillis.



**Figure 18.** The final skin closure.



**Figure 19.** Postoperative radiograph following resection of the Haglund's deformity.

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