

Foot & Ankle International

<http://fai.sagepub.com/>

Mini L-shaped Incision for Calcaneal Osteotomy: Clinical Tip

José A. V. Sanhudo

Foot Ankle Int 2006 27: 380

DOI: 10.1177/107110070602700512

The online version of this article can be found at:

<http://fai.sagepub.com/content/27/5/380>

Published by:



<http://www.sagepublications.com>

On behalf of:



[American Orthopaedic Foot & Ankle Society](http://www.aofas.org)

Additional services and information for *Foot & Ankle International* can be found at:

Email Alerts: <http://fai.sagepub.com/cgi/alerts>

Subscriptions: <http://fai.sagepub.com/subscriptions>

Reprints: <http://www.sagepub.com/journalsReprints.nav>

Permissions: <http://www.sagepub.com/journalsPermissions.nav>

>> [Version of Record](#) - May 1, 2006

[What is This?](#)

Mini L-shaped Incision for Calcaneal Osteotomy: Clinical Tip

José A. V. Sanhudo, M.D.
Porto Alegre, RS, Brazil

INTRODUCTION

The L-shaped incision has become popular since 1993 and is widely used for the treatment of calcaneal fractures. The incision uses a plastic surgery principle: dissecting a full-thickness flap from the lateral calcaneal artery, thus reducing the chances of edge ischemia and secondary incisional problems.

Calcaneal osteotomy is a widely used procedure for the treatment of either varus or valgus hindfoot deformities and has recently become popular as an adjuvant for the treatment of posterior tibial tendon dysfunction.^{2,3,4,5,6} The classic incision for calcaneal osteotomies is the lateral oblique approach, from posterosuperior to anteroinferior, which because of its proximity to the sural nerve may result in sural neuropathy.⁷ Conversely, the L-shaped approach involves a subperiosteal dissection with less risk of sural nerve injury because the incision does not reach the nerve.

A modification of the L-shaped incision with shorter arms has the advantages of the original incision, exposes the site of osteotomy, and requires no additional incision(s) for implant placement. The exposure of the screw insertion site and osteotomy level aids in estimating the implant size, while reducing the possibility of the screws entering the subtalar joint.

OPERATIVE TECHNIQUE

An L-shaped incision, approximately half the size of the standard incision, is made laterally. Subperiosteal dissection protects the sural nerve. Neither the peroneal tendons nor calcaneofibular ligament is mobilized. Marginal wound necrosis is reduced by retracting the apex of the full-thickness flap and suturing it with 2.0 monofilament nylon. This



Fig. 1: The mini L-shaped incision, with flap elevation and dorsal suture, which exposes the calcaneal tuberosity and avoids the use of retractors. In this picture the retractors are used only to expose the heads of the screws.

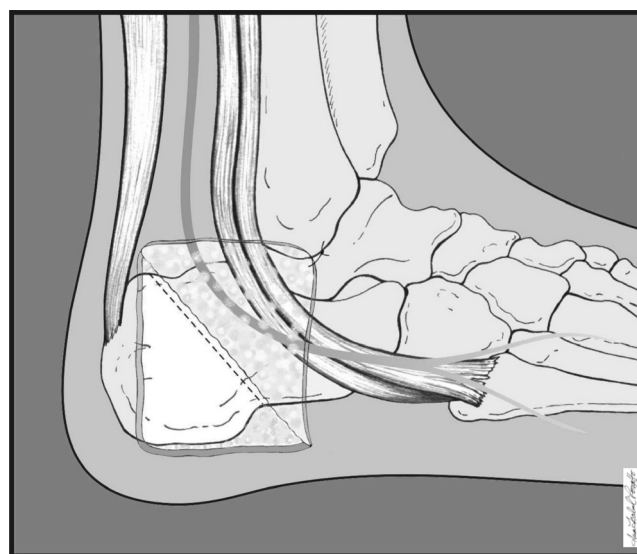


Fig. 2: Schematic representation of the mini L-shaped incision. Note that the sural nerve and the peroneal tendons are not at risk because the incision does not reach them.

Corresponding Author:
José A. V. Sanhudo, M.D.
Head Surgeon, Foot Ankle Service
Orthopaedics and Traumatology Department
Mae de Deus Hospital
Porto Alegre, RS
Brazil
E-mail: jsanhudo@ceotrs.com.br
For information on prices and availability of reprints, call 410-494-4994 X226

exposes the tuberosity of the calcaneus (Figures 1 and 2) and precludes the use of a retractor, which may damage the flaps. The osteotomy site is widely exposed and the tuberosity fragment displaced medially or laterally. Internal fixation is inserted under direct vision, entering the calcaneal posterolateral wall and directed toward the anterior process, with the second screw directed into the subchondral bone of the subtalar joint. Once fixation is complete and the deformity corrected, hemostasis is obtained, and a two-layered subcutaneous tissue and skin closure is performed. Sutures are removed at 10 to 14 days, and a short-leg walking cast is applied for an additional 6 weeks, at which time the cast is removed and rehabilitation is started.

REFERENCES

1. **Benirschke, SK; Sangeorzan, BJ:** Extensive intra-articular fractures of the foot. Surgical management of calcaneal fractures. *Clin. Orthop.* **292**:128–134, 1993.
2. **Guyton, GP; Jeng, C; Krieger, LE; Mann, RA:** Flexor digitorum longus transfer and medial displacement calcaneal osteotomy for posterior tibial tendon dysfunction: a middle-term clinical follow-up. *Foot Ankle Int.* **22**:627–632, 2001.
3. **Marks, RM:** Posterior tibial tendon reconstruction with medial displacement calcaneal osteotomy. *Foot Ankle Clin.* **1**:295–313, 1996.
4. **Myerson, MS:** Adult acquired flatfoot deformity. Treatment of dysfunction of the posterior tibial tendon. *J Bone Joint Surg.* **78-A**:780–792, 1996.
5. **Myerson, MS; Corrigan, J; Thompson, F; Schon, LC:** Tendon transfer combined with calcaneal osteotomy for the treatment of posterior tibial tendon insufficiency: a radiological investigation. *Foot Ankle Int.* **16**:712–718, 1995.
6. **Sammarco, GJ; Hockenbury, RT:** Treatment of stage II posterior tibial tendon dysfunction with flexor hallucis longus transfer and medial displacement calcaneal osteotomy. *Foot Ankle Int.* **22**:305–312, 2001.
7. **Weinfeld, SB:** Medial slide calcaneal osteotomy. Technique, patient selection, and results. *Foot Ankle Clin.* **6**:89–94, 2001.