

A LONG PLANTAR ARM OSTEOTOMY FOR A TAILOR'S BUNION

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INTRODUCTION

A Tailor's bunion or bunionette, first described in the nineteenth century by Davies,¹ is a condition in which a prominence of the fifth metatarsal head is present on the lateral aspect of the foot. This foot condition can produce painful symptoms localized around the prominent metatarsal head as a result of pressure and friction from foot gear or functional over load of the part. Pressure from foot gear often produces a painful hyperkeratotic lesion or soft-tissue bursa.

Fallat described 4 types of bunionettes in 1990: Type 1, enlargement of the lateral surface of the fifth metatarsal; Type 2, lateral bowing of the distal aspect of the fifth metatarsal; Type 3, an increase of the fourth-fifth intermetatarsal angle; Type 4, a combination of deformities involving 2 or more of the above mentioned components.² Many patients with this deformity are asymptomatic, although symptomatic patients should first be approached with conservative therapies.¹ Conservative therapies range from wider shoes, orthotics and padding to anti-inflammatory medications and physical therapy modalities. However conservative treatment is rarely considered curative and should be viewed as palliative.³ Surgery is often considered the treatment of choice for symptomatic healthy individuals with this deformity.³

When surgical correction is deemed necessary, the surgeon must choose an appropriate procedure. To help aid in this selection process numerous publications have described various methods for evaluating a bunionette including radiographs, clinical presentation, and biomechanical examinations.²⁻⁵ Procedures for this deformity have ranged from exostectomy, metatarsal osteotomies, metatarsal head resections, and even amputation.⁵⁻¹⁰

Historically in the Podiatry Institute experience, we have used a variety of techniques and have introduced a number of modifications over the years with varying degrees of success and failure. These procedures have spanned from the oblique wedge osteotomy, intramedullary fixation, intra-osseous loop, crescentric osteotomy, and distal chevron osteotomy. Obviously, many of these "great

ideas" are now of only historic value. The most recent incorporation in the series of procedures for correction of a tailor's bunion is the "long plantar arm" osteotomy which is fixated with two 2.0-mm cortical screws.

SURGICAL TECHNIQUE

This procedure is usually performed under local anesthesia and intravenous sedation. A 4 cm linear incision is made over the dorsolateral aspect of the distal fifth metatarsal and extends distally past the fifth metatarsal phalangeal joint to provide adequate exposure of the joint complex. The incision should be located so that the neurovascular bundle can be protected and retracted laterally and the extensor tendon medially. Dissection then proceeds through the subcutaneous tissues taking care to either cauterize or tie off any of the superficial veins crossing the incision line. Once the deep fascia has been fully exposed with adequate reflection of the superficial fascia, a linear periosteal and capsular incision may be made for the planned osteotomy. The incision should be made lateral to the extensor tendon and in line with the skin incision.

Once the joint has been identified, a Freer elevator is used to initiate reflection of the periosteum from the neck of the metatarsal. The periosteum is thin along the shaft of the metatarsal and care must be taken to maintain this layer while freeing soft tissue attachments to the metatarsal. When this tissue layer is reflected distally to the level of the capsule, a scalpel is used to deliver the fifth metatarsal head from capsular and ligamentous attachments.

With adequate exposure of the fifth metatarsal head, the prominent lateral condyle is resected. A 0.045-inch Kirschner wire (K-wire) is then used as an axis guide for executing bone cuts (Figure 1). The axis guide is generally oriented perpendicular to the fourth and parallel to the level of the lesser metatarsals. The osteotomy is generally performed using a 63 blade on the oscillating saw. It is recommended to make the long plantar arm of the osteotomy first because this is the most technical cut and is critical to placement and orientation of the fixation devices (Figure 2).



Figure 1. Insertion of a 0.045-inch Kirschner wire axis guide.



Figure 2. Long plantar arm osteotomy.

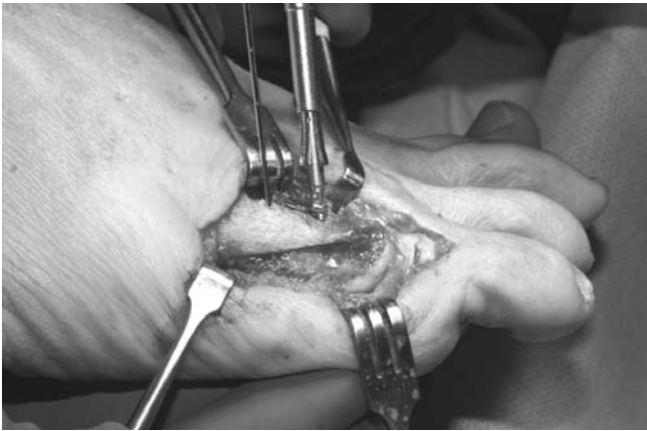


Figure 3. Insertion of the distal 2.0-mm cortical screw.

After the plantar cut has been made, a dorsal cut is made 60-90 degrees from the plantar arm. Once the 2 cuts reach the axis guide, the K-wire is removed and the capital fragment is transposed medially approximately one-half to one-third the width of the metatarsal. The metatarsal head is then impacted on the shaft of the metatarsal. At this point care is taken to evaluate the articulation of the fifth digit at the metatarsal phalangeal joint. If the correction is adequate at the osteotomy site and the digit is articulating appropriately, the osteotomy is then fixated with the use of two 2.0-mm cortical screws in a standard lag fashion.

A 0.054-inch K-wire is used for temporary fixation and as a predrill to the proximal screw. After the proximal K-wire is in place, it is cut and the remaining end is used to make the distal screw predrill hole. The distal screw is then thrown and the proximal K-wire removed and the corresponding screw thrown (Figure 3). Any remaining lateral eminence or redundant bone may then be removed and sculpted with either power or hand instrumentation.

The linear capsular incision is closed using 3-0 Vicryl suture in an over and over fashion. The subcutaneous tissue is closed using a 4-0 Vicryl suture in a running fashion and the subcuticular tissue is closed with a 5-0 Vicryl suture in a running fashion as well.

POSTOPERATIVE CARE

For a healthy patient in whom a long plantar arm chevron osteotomy has been performed, it is recommended to allow the patient to ambulate in a surgical shoe with protected weight bearing for approximately 6 weeks. Return to normal shoe gear should be based on postoperative radiographs, evaluation, and symptoms.

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