

# The Versatility of the Lapidus Arthrodesis

Neal M. Blitz, DPM, FACFAS

## KEYWORDS

- Lapidus arthrodesis • Midfoot fusion
- Morton's foot • Hallux valgus • Bunionectomy

Lapidus arthrodesis is probably the most versatile procedure of the foot and ankle surgeon. Although the procedure was conceived initially for the surgical treatment of met primus adductus associated with hallux valgus, it has also been used for the treatment of a variety of other conditions.<sup>1-6</sup> These conditions include hallux limitus, revision bunion surgery, medial column stabilization, and other conditions shown in **Box 1**. A complete understanding the Lapidus' advantages, disadvantages, and its limitations is necessary for successful implementation of the Lapidus approach.

## THE LAPIDUS IN METATARSUS PRIMUS ADDUCTUS WITH HALLUX VALGUS

The Lapidus procedure, mainstreamed by Dr. Paul Lapidus, is best known for its use with primary metatarsal primus adductus with hallux valgus.<sup>4-6</sup> The procedure may involve an isolated fusion of the first tarsometatarsal (TMT) joint (**Fig. 1**) or incorporate the second metatarsal base into the fusion (**Fig. 2**). Although Dr. Lapidus initially described a concomitant fusion of the second metatarsal base, most surgeons do not typically include this additional fusion. In some situations, the second metatarsal base or intermediate cuneiform may be temporarily spanned with fixation to add more stability during the healing process (**Fig. 3**). The procedure/technique and fixation construct has evolved significantly since its inception, but most advances have been gained since Sangeorzan and Hansen reported on two-crossed screw fixation of the fusion site in 1989.<sup>7</sup>

The benefit of performing a Lapidus for hallux valgus is that the procedure addresses the problem at the apex of the deformity, increases the efficiency of Peroneus Longus, and stabilizes the medial column.<sup>8,9</sup> There are several technical aspects of the procedure that are important to review that may improve outcomes (**Fig. 4**).

## LAPIDUS TECHNICAL PEARLS (SCREW FIXATION)

The fusion site is accessed through a dorsomedial curvilinear incision, and the medial dorsal cutaneous nerve is avoided. Access to the first TMT may be achieved with

---

Department of Orthopaedic Surgery, Bronx-Lebanon Hospital Center, 1650 Selwyn Avenue, Bronx, NY 10457, USA

E-mail address: [nealblitz@yahoo.com](mailto:nealblitz@yahoo.com)

Clin Podiatr Med Surg 26 (2009) 427-441

doi:10.1016/j.cpm.2009.03.009

[podiatric.theclinics.com](http://podiatric.theclinics.com)

0891-8422/09/\$ – see front matter © 2009 Elsevier Inc. All rights reserved.

**Box 1****Conditions where lapidus has been implemented**

Primary met primus adductus with hallux valgus  
 Revision hallux valgus surgery  
 Hallux limitus  
 Forefoot overload (hypermobility syndrome)  
 Morton's foot reconstruction  
 Medial column stabilization with pes planus  
 Distracting procedure for short first ray  
 Arthrosis of the first TMT joint  
 Primary fusion for comminuted first TMT fracture

a linear or transverse capsulotomy (see **Fig. 4A**), avoiding the ligament that extends to the second metatarsal base if an isolated first TMT fusion is being performed. Resection of the first TMT with osteotomes and curettes avoids thermal necrosis of bone (see **Fig. 4B**) that may occur with saw resection. Also, the subchondral plate is preserved to provide stability to the fixation and is perforated with a bone pic to allow bony ingress necessary for fusion to occur<sup>10</sup> (see **Fig. 4C**). It is important to either translate or plantarflex the first metatarsal on the medial cuneiform to accommodate for the shortening inherent with the joint resection. The intermetatarsal angle is reduced manually. This particular fixation construct calls for at least two screws to be placed across the arthrodesis site (see **Fig. 4D** and **E**). The distal-to-proximal screw is placed first with lag technique originating on the dorsal aspect of the first metatarsal, oriented so that the screw's long axis is nearly perpendicular to the fusion site (theoretically increasing the compressive force of the screw). The second screw, originating on the dorsal aspect of the medial cuneiform, may or may not be placed with lag technique. A locally derived stress-relieving bone graft may assist with healing of the fusion (see **Fig. 4F**).



**Fig. 1.** Isolated first TMT joint fusion (modified Lapidus bunionectomy)—the two-crossed screw technique. (**A**, **C**) Preoperative weightbearing radiographs. (**B**, **D**) Postoperative weightbearing radiographs. Two long 3.5-mm fully threaded cortical screws are used to maintain the fusion site.

Download English Version:

<https://daneshyari.com/en/article/3462396>

Download Persian Version:

<https://daneshyari.com/article/3462396>

[Daneshyari.com](https://daneshyari.com)