

Office-based MIS Surgical Correction of DFU's

By Don Peacock DPM, AAFAS, ACFAS

A person dies from diabetes every six seconds. The mortality rate for a diabetic foot ulceration (DFU) is high: 50% of patients who present with a DFU will die within 5 years. The increased incidence of diabetes is astronomical: foot surgeons will likely continue to observe an increase in DFU's with no end in sight for the near future. While these facts seem dismal, the foot surgeon can make a big impact on the quality of life for these patients.

Wound healing is often a lengthy and costly process. Treatment usually requires multiple office visits and often hospitalization. The impact on work and family life is sig-

Monroe LaBorde, MD

Ulcer → Tendon Balancing

Met. Head 2,3,4	Gastroc-Rec (GR)
1st Met. Head	Peroneus Longus (Z) + GR
5th Met. Hd. or Base	Posterior Tibial ZP +GR

Figure 1: Monroe LaBorde's protocol for forefoot DFU's

nificant, leading to increased social isolation. The patient is at risk for low mood and self-esteem. These dynamics can make patients less engaged in their glycemic control and unenthusiastic about controlling diet, maintaining exercise and suspending smoking. The vicious cycle of ulceration goes into high speed under these circumstances.

Foot surgeons will continue to be in high demand and will be required to handle these conditions promptly. Confounding the state of affairs, more individuals either have no health insurance or are under-insured. Many of these patients are delaying treatment due to cost. One response to this predicament is to employ MIS office-based procedures that heal chronic DFU's with the added advantage of less cost to patients and insurance carriers, including Medicare.

This article will describe an economical model that is applicable to the surgical treatment of plantar forefoot ulcers and is scientifically sounder than many other treatment options. Fortunately, there is an ever-increasing amount of research lending credence to MIS options for the treatment of DFU's.

This article's content and the author's approach borrow enormously from the work of Monroe LaBorde, MD, who is a professor in the **Academy of Ambulato-**



Figure 2: Preop and Postop 18 months 2nd metatarsal DFU following gastrocnemius recession

ry Foot and Ankle Surgery (AAFAS). His publications on tendon balancing for forefoot DFU's have shown a success rates up to 84% in long-term follow-up studies. The model he advocates considers both the location of the ulcer and the appropriate biomechanical tendon- balancing procedure (Figure 1 and 2). If a patient has an ulcer under the second, third or fourth metatarsal a gastrocnemius recession is employed (Figure 3). If the ulcer is under the first metatarsal a gastrocnemius recession along with a Z-lengthening of the peroneus longus tendon is done (Figure 4). Finally, if the ulcer is under the fifth metatarsal a gastrocnemius recession along with a posterior tibialis tendon Z-lengthening is performed.



Figure 3: Gastrocnemius recession- requires hospital based surgery in the state of North Carolina.



Figure 4: Z-lengthening of peroneus longus tendon

While this protocol is extremely effective it is not applicable to the practice of many of our fellow surgeons and patients. In the author's state a podiatric surgeon cannot perform a gastrocnemius recession in the office

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MIS Surgical Correction *(continued)*

setting. The state laws require the procedure to be performed in the costly hospital setting. Also, some states do not allow podiatrists to perform ankle procedures. Considering this information, the author has developed an

LaBorde vs Peacock Protocol		
	LaBorde	Peacock
Met. Head 2,3,4	(GR)	ATL
1st Met. Head	PL(z) + GR	ATL & PMO 1st
5th Met.	PT (z) +GR	ATL & PMO 5th

Figure 5: Table comparing Dr. Peacock's protocol to Dr. LaBorde's

alternative to the paradigms offered by Dr LaBorde while at the same time maintaining the basic concepts of his research.

This author's protocol allows for similar outcomes achieved by LaBorde's research with the added benefit of the ability to perform the procedures under local anesthetic in the office setting (Figure 5). If a patient has an ulcer under the second, third or fourth metatarsal a percutaneous ATL Z-lengthening is performed (Figure 6). If the



Figure 6: Percutaneous ATL



Figure 7: Percutaneous first metatarsal DFWO

ulcer is under the 1st metatarsal a percutaneous Z-lengthening ATL is performed along with a percutaneous 1st DFWO (Figure 7).

If the ulcer is under the fifth metatarsal a percutaneous Z-lengthening ATL is performed along with a percutaneous fifth metatarsal osteotomy (Figure 8). In the author's experience only 1 ulcer has returned using this office-based concept.

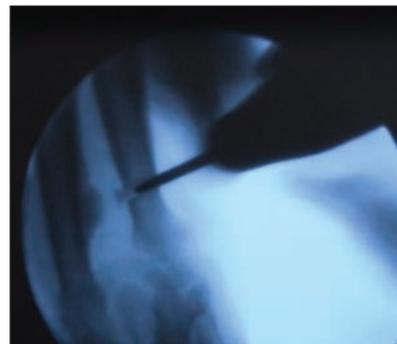


Figure 8: Percutaneous fifth metatarsal osteotomy

Conclusion

MIS surgical paradigms work extremely well for the treatment of forefoot DFU's and is more economical than most treatment options. The procedures can be performed under local anesthetic in the office setting. These techniques are taught by the AAFAS during their LSU Cadaver seminar twice a year.

For more information, visit www.aafas.org or click here.