

Percutaneous 5th Metatarsal Osteotomy for Chronic Non-Healing Plantar 5th Metatarsal Head Ulcerations

John Yuhas, DPM,¹ Megan Pitts, DPM,² Naohiro Shibuya, DPM FACFAS³
 Scott & White Memorial Hospital/Texas A&M Health Science Center, Temple, TX
 Central Texas VA Healthcare System, Temple, TX

Financial Disclosures: None



Purpose

This case series highlights a minimally invasive solution in the form of a percutaneous 5th metatarsal osteotomy without fixation for chronic non-healing ulcerations of plantar 5th metatarsal heads

Literature Review Cont.

Complete ulcer healing was noted in 21/22 cases. Complications occurred in 15 cases including: acute Charcot disease, deep wound infection, and transfer lesions. No recurrence was reported.

Analysis & Discussion

Chronic ulceration is often associated with increased comorbidities and non-compliance. Therefore, the risk of surgical complications is high. This procedure allows immediate weight bearing with minimal operative trauma because of its percutaneous nature and lack of internal fixation. This technique may be beneficial and safe for this patient population. Although small in size, our case series mirrors the results that were put forth by Tamir et al¹ and Fleischli et al². Further research is warranted to expand upon these findings.

Case Series

Three patients who underwent a percutaneous 5th metatarsal osteotomy without fixation to treat chronic non-healing plantar 5th metatarsal head ulcerations were identified in our surgical logs. All patients were diabetic. All patients had failed at least 1 year of conservative treatment. All three patients were neuropathic with suboptimal circulation. In all three patients a 2 cm dorsal linear incision was made over the surgical neck of the 5th metatarsal. A perpendicular osteotomy from dorsal to plantar through the metatarsal was made. The metatarsal head was allowed to float into a natural union site with the proximal portion of the metatarsal after osteotomy.

Literature Review

Literature is sparse in regards to metatarsal osteotomies for treatment of plantar 5th metatarsal head ulcerations. Formation of the ulcer is secondary to elevated local tissue pressure. This is often due to biomechanical deformity. Tamir et al. ¹ performed a mini-invasive floating osteotomy on twenty 5th metatarsals. At 6 weeks, 17/20 ulcerations were completely healed in diabetic patients who had UTSA 1A ulcerations. Fleischli et al. ² reported 20 diabetic patients who underwent 22 dorsiflexion metatarsal base osteotomies with internal fixation.

Fig. 1



Fig.2



References

1. Tamir et al. Mini-Invasive Floating Metatarsal Osteotomy for resistant or recurrent neuropathic metatarsal head ulcers. *Journal of Orthopaedic Surgery and Research* (2016) 11:78
2. Fleischli et al. Dorsiflexion Metatarsal Osteotomy for Treatment of Recalcitrant Diabetic Neuropathic Ulcers. *FAJ*. (20) 2: 1999.
3. Finestone et al. *Journal of Foot and Ankle Research* (2018) 11:6
4. Sumpio et al. *Clin Podiatr Med Surg* 20 (2003) 689– 708.

Table.1

Time to Heal (d)	Radiographic union (m)	Transfer Lesions	Recurrence
25	2	0	None
26	7	0	None
52	12	0	None