



Revision to First MTP Arthrodesis

Author: Julio C. Ortiz, DPM

INTRODUCTION

A 69-year-old female patient presented with severe worsening pain and discomfort to the right foot pursuant to an attempted joint sparing procedure for hallux rigidus correction performed six-months prior by another surgeon.

All treatment options were extensively discussed with the patient and she elected to have revision surgery to permanently resolve the condition.

It was determined that the best course of action would be a first metatarsal phalangeal joint arthrodesis using the In2Bones CoLink® 2 Plating System.

PROCEDURE

The patient was brought into the operating room and, following sterile preparation of the foot and draping, a dorsal medial incision was performed over the first MTP to expose the diseased joint, following the scar from the previous surgical procedure. Vital neurovascular structures were carefully retracted, and bleeders were addressed with a Bovie.

Blunt dissection was carried down with tenotomy scissors, and the joint capsule was incised along the length of the incision and reflected back.

Upon visualization of the first MTP joint, small osteophytes were observed on the metatarsal head's dorsal aspect and removed with a sagittal saw. Denudation of 80% of the cartilage of the metatarsal head was also noted (**Figure 1**).



Figure 1. Exposure of metatarsal head

A 0.062" single trocar guide wire was inserted into the central aspect of the metatarsal head and into the diaphysis with the position verified under fluoroscopy (**Figure 2**).



Figure 2. Fluoroscopic verification of guide wire trajectory

The CoLink 2 cone reamers were used sequentially, starting with the largest diameter, until bleeding cancellous bone was observed (**Figure 3**). The guide wire was removed and used to fenestrate the metatarsal head.



Figure 3. Reaming of metatarsal head

The single trocar guide wire was then inserted into the base of the proximal phalanx.

The CoLink 2 cup reamers were used to ream until healthy cancellous bone was observed. Starting with the smallest diameter, reaming progressed until the cup reamer diameter matched the final cone reamer used



Figure 4. Reaming of proximal phalanx

(**Figure 4**). The guide wire was removed and used to fenestrate the base of the proximal phalanx.

The joint fusion site was irrigated with sterile saline to remove any residual bone fragments from the reaming process.

The toe was held in a rectus position with five degrees of dorsiflexion, and a guide wire was inserted under fluoroscopy from distal medial to proximal lateral across the fusion site.

After trialing with the CoLink 2 plate trials, a CoLink 2 MTP Plate was placed over the joint's dorsal aspect and temporary fixation was achieved with two olive wires (**Figure 5**).



Figure 5. Temporary fixation of plate

All distal plate holes were prepared and filled with 3.0mm CoLink locking screws, following the standard surgical technique.

Eccentric drilling was performed through the specialized central