

CORRECTION OF HALLUX VALGUS WITH FIRST METATARSOPHALANGEAL JOINT ARTHRODESIS

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Similar to many other conditions that affect the foot, hallux valgus has numerous surgical procedures that can be performed for adequate correction. Procedure selection often depends on the severity of the deformity, patient related factors, such as age, weight, and tobacco use, and other coexisting co-morbidities. Factors such as bone stock, the ability to be non- or partial-weightbearing, and joint aberrations also play a role in procedure determination.

A first metatarsophalangeal joint (MPJ) arthrodesis can be a useful procedure for hallux valgus correction, particularly in elderly or obese patients, and patients with severe deformity or arthritis. In elderly patients with painful hallux valgus, bone stock is often a concern for performing, and subsequently healing, an osteotomy. Also in this population, cartilage damage and juxta-articular cysts can be a concern since the deformity has usually been present for many years. An isolated McBride/Silver type of repair is often used due to ease of recovery, but this can lead to undercorrection, recurrent deformity, and continued pain. Another popular surgical option for elderly patients with hallux valgus is a Keller, either with or without an implant. Compromise of the insertion of the flexor hallucis brevis tendon has been reported to lead to hallux instability and lack of toe purchase.

Patients with diabetes may also have problems with healing an osteotomy, especially if this co-morbidity is present in addition to obesity or advanced age. There are sometimes concerns in performing an osteotomy in overweight and obese patients. Being non-weightbearing may not be a realistic expectation and lead to noncompliance and post-surgical complications.

With hallux valgus, it is often over-emphasized to choose a surgical procedure based primarily on radiographic findings and parameters. Our focus should change to choosing a procedure that will give the patient the greatest chance of successful resolution of their symptoms, and we must not forget to have realistic expectations of our patients. Elderly or obese patients commonly have large deformities that need significant correction, but often they are not able to be non-weightbearing. Thus, performing a Lapidus or base osteotomy could lead to significant complications.

A first MPJ arthrodesis can be powerful in correcting hallux valgus deformities and the healing is very

predictable. Good reduction of the intermetatarsal angle can be achieved. The fusion is generally very stable, even in the osteopenic patient. Thus, weightbearing can be tolerated immediately postoperatively in an offloading surgical shoe or walking boot.

Multiple types of fixation are available. Compression screws, Kirschner wires, staples, and multiple types of contoured plates can be used for adequate fixation. Often this is based on what the surgeon is most comfortable with using. The author recommends the use of locking plates and screws for neuropathic patients or those with osteopenia. This construct has been proven to be very strong and can increase osseous stability and healing.

Many surgical procedures are successfully utilized to correct hallux valgus deformities. Decisions of the type of procedure to use should not only depend on radiographic and clinical parameters, but also on what the patient can tolerate postoperatively. The author regularly utilizes a first MPJ arthrodesis for correction of large hallux valgus deformities in elderly, obese, and neuropathic patients with good results.

CASES

KM is a 57-year-old obese man with bilateral painful hallux valgus and overlapping second digit (Figure 1). Due to concerns about his ability to be non-weightbearing, a first MPJ arthrodesis was performed. Second proximal interphalangeal joint fusion, plantar plate repair, and partial second metatarsal head resection were performed. A small plate was utilized dorsally, and a staple medially (Figures 2,3).

PP is an active 79-year-old woman who presented with painful hallux valgus and a dislocated second digit. She was still working part-time as a nurse and lived alone, therefore she did not want to be non-weightbearing for an extended period. A first MPJ fusion with second ray stabilization was performed (Figures 4 and 5). A locking plate was utilized for this patient.

RA is a 53-year-old woman with chronic pain secondary to a recurrent bunion (Figure 6), as well as nerve entrapment of the medial dorsal digital nerve to the hallux. It was determined that due to her deformity, recurrence, and nerve

involvement, a first MPJ arthrodesis would be the best procedure for this patient (Figures 7, 8). She also had chronic back problems and could not be non-weightbearing with walking, crutches, or knee rolling walker. She healed well and her neuritic symptoms were also resolved with a neurectomy.

DW is a 65-year-old man with a painful hallux valgus. Clinically he has a large deformity as well as pain in the first MPJ with restricted range of motion (Figure 9). He stocks shelves at a store and wanted to continue working. We chose to perform a first MPJ fusion, which healed uneventfully (Figure 10). He returned to heavy lifting and high impact activities 3 months after surgery.



Figure 1. KM preoperative hallux valgus with overlapping second digit, anterior-posterior radiograph.



Figure 2. KM 3 month postoperative anterior-posterior radiograph, after first MPJ fusion with second digit fusion, plantar plate repair, and partial second metatarsal head resection.



Figure 3. KM 3 month postoperative lateral radiograph.



Figure 4. PP preoperative anterior-posterior radiograph of a painful hallux valgus with overlapping second digit.



Figure 5. PP 6 month postoperative anterior-posterior radiograph.



Figure 6. RA preoperative anterior-posterior radiograph.



Figure 7. RA 12 month postoperative anterior-posterior radiograph.



Figure 8. RA 12 month postoperative lateral radiograph.



Figure 9. DW preoperative anterior-posterior radiograph.



Figure 10. DW 8 month post-operative anterior-posterior radiograph.