



UPDATE

Use of 1st metatarsophalangeal joint fusion for repair of geriatric hallux valgus deformity



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Available online 23 November 2016

KEYWORDS

First metatarsophalangeal joint;
Arthrodesis;
Hallux valgus;
Geriatric patients;
Foot surgery;
Forefoot derangement

PALABRAS CLAVE

Primera articulación metatarsofalángica;
Artrodesis;
Pacientes geriátricos;
Cirugía del pie;
Hallux valgus;
Alteraciones del antepié

Abstract Historically first metatarsophalangeal joint fusion has been used to treat patients with joint arthritis or as a salvage procedure for iatrogenic deformities. For the past 20 years the author has used this procedure in older patients with hallux valgus deformity, and it has proven to be a safe and reliable technique. The paper describes the rationale for use of joint fusion as a primary option for hallux valgus repair in this patient population as opposed to other procedures. The surgical technique, fixation, and aftercare are also described.

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Fusión de la primera articulación metatarsofalángica en el tratamiento del hallux valgus en pacientes geriátricos

Resumen Históricamente la fusión de la primera articulación metatarsofalángica ha sido una técnica quirúrgica usada para tratar pacientes con grado artrosis avanzada de la articulación o como un procedimiento de salvamento en deformidades iatrogénicas. El autor del presente trabajo ha utilizado este procedimiento durante los últimos 20 años en pacientes ancianos con deformidad en Hallux Valgus y se ha mostrado como un procedimiento seguro y fiable. El artículo describe el razonamiento para el uso de la fusión articular como primera opción en el tratamiento del Hallux Valgus en esta población de pacientes en vez de usar otro tipo de procedimientos. Se describe también la técnica quirúrgica, la fijación y los cuidados postoperatorios.

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<http://dx.doi.org/10.1016/j.repod.2016.10.003>

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Introduction

The repair of hallux valgus deformity in older patients may pose a more difficult problem for surgeons in comparison to the same condition in a younger population. The degree of hallux valgus deformity may be advanced, with a large intermetatarsal angle, fixed deformity, and the bone may be soft. While a proximal osteotomy or Lapidus may function well in a younger patient, in older patients the required non weight bearing associated with these procedures may create a hazard should the patient fall in the postoperative recuperation. In other circumstances where proximal procedures are performed the patient may weight bear postoperatively because they do not have the physical strength or balance to function on only one extremity. Therefore, a procedure which would provide sufficient correction of hallux valgus deformity and permit weight bearing in the postoperative interval would be a distinct advantage and safer for older patients. Many surgeons might consider a distal 1st metatarsal osteotomy even in a patient with a larger intermetatarsal angle or with greater levels of deformity. There are studies that have proven the efficacy of distal procedures in the repair of hallux valgus with large intermetatarsal angles, but the problem in the geriatric population is that the softer bone increases the risk of displacement or disruption of the osteotomy, or the failure to adequately correct the hallux valgus.

This "geriatric dilemma" lead the author to consider two procedures that for many years were considered somewhat antiquated – a modified Keller procedure and a first metatarsophalangeal joint fusion. For a number of years a modified Keller technique was employed by

the author with success in patients with flexible hallux abducto valgus, but there were later patients that caused the author to revise the approach as it was felt the modified Keller would have been inadequate. The patient in Fig. 1 illustrates that dilemma. This was an older woman who had undergone previous removal of the lesser metatarsal heads as well as the proximal phalanges from the intermediate toes. A prior first MPJ fusion had been attempted, yet there was a nonunion. Her primary complaint was not pain relative to the nonunion, but that the additional length of the first ray created problems with balance and pain beneath the first metatarsal head.

Clearly, arthrodesis of the first metatarsophalangeal joint would be the preferred approach and would accomplish several goals – shortening of the first ray to provide better balance with weight-bearing, elimination of the nonunion, and improved stability to the forefoot as a whole. Due to the gross instability in the lesser rays, ultimately the hallux would tend to deviate laterally if a fusion was not performed. At the time that this patient was treated most surgeons believed that non-weight bearing for 6 weeks was necessary following first MPJ fusion. However, preoperatively she was unstable even with regular shoes. Therefore, the patient was permitted to walk with a surgical shoe after surgery, despite the fact that this was different than the protocols employed by most surgeons at that time. Fixation consisted of a linear Steinman pin with an oblique Kirschner wire, and the patient underwent successful arthrodesis and restoration of function despite weight-bearing throughout the postoperative recuperation. Given the success, the author began to consider this approach in other patients as well.

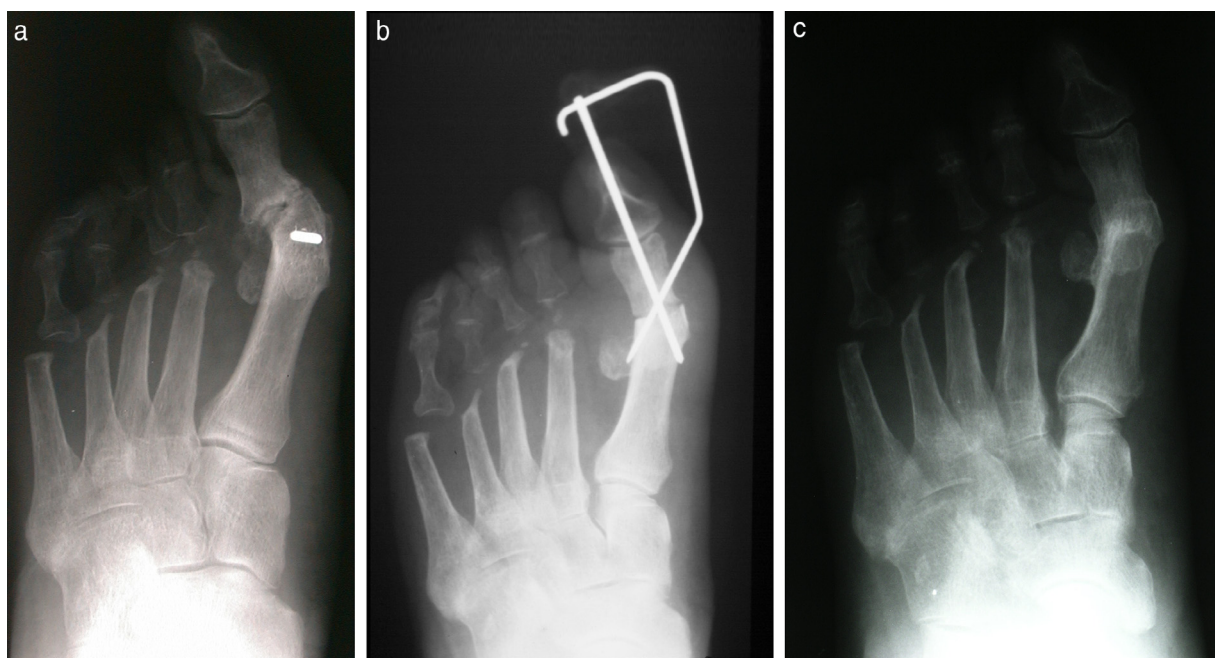


Figure 1 (a) This 80+ year old female had previously undergone removal of the lesser metatarsal heads and the proximal phalanges of the intermediate toes. A nonunion was also present at the 1st mpj. (b) Radiographic appearance following 1st mpj fusion. (c) 4.5 years postop.

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