

Salvage of malunion of 1st MPJ fusion with the utilization of hemi-implant

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Statement of Purpose

Treatment in regards to the 1st metatarsophalangeal joint is divided between joint salvage and joint destructive procedures. This is a rare case in which we are able to witness the outcome of both procedures in the same patient, same foot, same joint. This case study demonstrates a patient which underwent two bunionectomies then onto a fusion and later converted to a hemi implant. The purpose is to demonstrate that even a failed 1st MPJ fusion can be salvaged to a fully functioning and pain free joint.

Literature Review

If the patient still appears to be at high risk for nonunion even after optimization, then an arthroplasty with or without an implant should be considered, or even possibly hardware removal. Some studies have found hardware removal highly successful for first MPJ nonunion pain. If one pursues revision arthrodesis, then aggressive resection of nonviable bone until bleeding bone is necessary on both the proximal and distal aspects of the first MPJ, which was done with our patient in this case. Brage et al. suggested in their 2002 article that treatment modalities, such as hemi-implants allow restoration of alignment and maintenance of motion, length, and strength, which are fundamental in attaining a good clinical result. This is stated for "regular" end stage hallux rigidus, in our case study we applied it to a failed 1st MPJ fusion.

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Case Study

1 patient underwent bunionectomy in 2017, bunionectomy with fixation in mid 2018, then proceeded to 1st MPJ fusion in late 2018, and finally converted to a hemi implant in 2019. Patient is currently pain free and gained full functionality and ROM of his 1st MPJ.



2017



Mid 2018



Late 2018



2019

Analysis & Discussion

There has been great discussion in regards to joint salvage versus joint destruction when it comes to treatment of hallux rigidus/1st MPJ pain/arthritis. This case highlights the use of a hemi-implant after failed 1st MPJ fusion attempt secondary to malunion. Hemi-implant successfully restored pain free motion and full functionality of the 1st MPJ after multiple procedures.

References

1. Brage, Michael E , and Ball, Scott T . "Surgical options for salvage of end-stage hallux rigidus." *Foot and Ankle Clinics* 7.1 (Mar. 2002) : 49-73.
2. Hope M, Savva N, Whitehouse S, Elliot R, Saxby TS. Is it necessary to re-fuse a non-union of a Hallux metatarsophalangeal joint arthrodesis? *Foot Ankle Int.* 2010;31(8):662-669.