

TITLE: Porous Titanium Wedges in Revision First Metatarsophalangeal Arthrodesis

BACKGROUND: First metatarsophalangeal (MTP) arthrodesis is a common procedure for hallux MTP pathology. In the setting of prior procedures with resultant bone loss, porous titanium wedges may provide an adjunct to bone autograft or allograft.

OBJECTIVE: The purpose of this study was to report clinical and radiographic outcomes achieved with titanium wedges used in 1st MTP arthrodesis in a revision setting.

METHODS: A retrospective analysis was performed in 9 patients (mean age 65.4) with prior first MTP procedures who underwent first MTP arthrodesis with use of porous titanium wedges from February 2014 to September 2017. Outcomes were assessed using both radiographic and clinical parameters. Patients were followed from a minimum of 30 months up to 6 years (mean 30.9 months).

RESULTS: Average Foot and Ankle Ability Measure (FAAM) score was 91.1 +/- 14.7 (75.1 +/- 5.3 FAAM Activities of Daily Living; 17.9 +/- 9.9 FAAM Sports). Average pain visual analogue scale was 1.9 +/- 1.7. Average Mental Health Continuum-short form score was 34.2 +/- 8.5. Postoperative computed tomography (CT) imaging demonstrated osseous integration in one of five CT scans obtained. Four patients underwent subsequent revision arthrodesis procedures.

CONCLUSIONS: To our knowledge, these data represent the first reported clinical and radiographic outcomes in patients undergoing revision 1st MTP arthrodesis with use of porous titanium wedges. Further research should focus on comparative data with other commonly performed operative techniques.