Functional Outcomes after First Metatarsophalangeal Joint Arthrodesis

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Summary
First metatarsophalangeal joint (MTPJ) arthrodesis is among one of the most common procedures performed by foot and ankle surgeons. This review aims to provide physicians and patients information that can help illustrate what outcomes can be expected after this procedure. The primary focus will be on what function can be expected by patients after arthrodesis of the first MTPJ.

Introduction
Several studies have reviewed patient outcomes after first metatarsophalangeal joint (MTPJ) arthrodesis using a single technique and a variety of function scoring systems. The purpose of this study is to review the outcomes of a series of patients undergoing first MTPJ arthrodesis, performed by a group of surgeons employing multiple techniques, with an emphasis on reviewing the functional gains and consequences, if any, associated with the procedure.

Methods
Forty-nine patients (52 feet) treated for advance degenerative arthritis of the first MTPJ with arthrodesis were included in our study. These patients were evaluated and treated by five different surgeons at our institution over a three-year period. Evaluation consisted of radiographs, FAOS and SF-12/36 functional outcome scores, as well as an activity and shoe-wear specific questionnaire.

Results
Arthrodesis constructs included either cross screws or plate and screws. There was an increase in both SF and FAOS outcome scores, with the majority of patients stating that their functional ability was the same or improved with surgery. Patients gained the greatest functional improvement in the ability to walk farther distances, as well as the ability to perform inline cardiopulmonary exercises. Nineteen percent of patients stated that their ability to perform their favorite activity was improved after the procedure. Half of patients questioned admitted to some limitation in the ability to wear shoes of their choice. The overall satisfaction rate was 90%.

Conclusions
First MTPJ arthrodesis yields reliable results and high patient satisfaction, regardless of fixation construct, so long as good arthrodesis techniques and principles are utilized. Most patients have little to no functional limitation, but may have some difficulty with shoe-wear, and these findings should be discussed during the formulation of a treatment plan. The greatest functional improvements were seen in patients’ ability to walk distances and perform inline cardiopulmonary exercises.