Early Weight Bearing Following First TMT Arthrodesis

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Introduction/Purpose: The modified Lapidus arthrodesis is an accepted method of correcting varying degrees of hallux valgus with or without associated first ray insufficiency. Improved operative techniques have led to more reliable outcomes and lower incidence of nonunion. As a result, the modified Lapidus procedure has increased in popularity. Historically, surgeons have followed cautious postoperative protocols, initially restricting weight bearing until bone consolidation is confirmed radiographically. More recently, an alternative approach to postoperative management has been proposed, allowing patients to bear weight as tolerated two weeks after surgery with the goal of improving patient compliance while minimizing postoperative disability. The purpose of this study is to compare outcomes of patients randomized to either early weight bearing or standard non-weight bearing postoperative course following modified Lapidus arthrodesis.

Methods: We determined that at least 130 patients would need to be enrolled in this study to achieve statistical significance ($p < 0.05$). Beginning in 2012, patients with hallux valgus indicated for modified Lapidus arthrodesis were assigned to either the investigational Group A (early weight bearing) or to the control Group B (standard of care) by a random number generator. All patients underwent modified Lapidus arthrodesis by one of the three senior authors (JGA, DRB, JDM). Specific demographic, clinical, patient-centered, and radiographic data were collected during the preoperative visit, the operative procedure, and at defined intervals during the postoperative period. The primary outcome variable was defined as first tarsometatarsal joint fusion at six months.
Results: To date, 100 subjects have been enrolled, 57 of whom (40 patients in Group A, 17 patients in Group B) have completed one year of follow up. At six months, 38/40 patients in Group A had achieved radiographic union, compared to 17/17 patients in Group B (p = 0.495). Smoking status, BMI, and age at surgery were not found to be significantly associated with rate of union in either group. Patients in Group A required less time to reach full weight bearing status (p < 0.001). At six weeks after surgery, Group A reported significantly higher levels of physical function and overall composite scores on the SF-36 questionnaire. The rate of adverse events was not significantly different between the two groups at any postoperative timepoint.

Conclusion: Though data collection is ongoing, our results indicate that clinical, patient-centered, and radiographic outcomes were comparable following modified Lapidus arthrodesis in both the early weight bearing and standard of care patient groups. Early weight bearing does not appear to increase the rate of adverse events or significantly slow rate of fusion, and also reduces postoperative disability.