Retrospective Analysis of Non-Union Rate Associated with Immediate Weightbearing Following A Modified Lapidus Arthrodesis
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Introduction/Purpose: A 6-8 week non-weightbearing period post modified lapidus arthrodesis has traditionally been universally accepted. A review of the literature reports nonunion rates between 5-33% after modified lapidus with 6-8 weeks of non-weightbearing. There are only a few reports in the literature that discuss immediate weightbearing after the modified lapidus procedure. In this retrospective review, we examine the nonunion rate among patients undergoing the modified lapidus arthrodesis who were immediately weightbearing in a controlled ankle motion (CAM) boot. It is our hypothesis that the non-union rate will be comparable to the traditional post-operative protocol nonunion rate.

Methods: In this retrospective study, we evaluated chart data on patients who underwent a modified Lapidus arthrodesis with immediate weight-bearing in a CAM boot. The goal of the study was to determine if a modified Lapidus surgical technique in conjunction with rigid internal fixation produces the necessary stability post-operatively in order to allow bony consolidation while being stressed with immediate weight bearing forces. Patients who underwent a modified Lapidus arthrodesis using either a 3 screw construct or a medially placed locking plate with an interfragmentary screw were included in the study. Patients with other adjunctive procedures that would prevent early weight bearing were not included in the investigation.

Results: A total of 376 patients were identified with 74 patients meeting inclusion criteria. 4 patients had bilateral procedures performed at separate times for a total of 78 Lapidus procedures. 31 patients had a 3 screw construct while 43 patients had a medial locking plate with an interfragmentary screw. 15 patients admitted to using nicotine. Additionally, 7 patients had type II Diabetes Mellitus. Autogenous shear-strain relief bone graft was used in 75 of the 79 procedures. Three patients (3.8%) experienced a post-operative non-union. Interestingly, none of the patients with non-unions were smokers and only one patient was diabetic.

Conclusion: The results of this study found a 3.8% nonunion rate. Based on these results we conclude that a modified Lapidus procedure using a long, solid interfragmentary screw with either additional screw support or a locking plate, we may permit patients to ambulate safely in a CAM boot immediately post-operative period without affecting surgical outcome.

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