Lateral Ankle Ligament Reconstruction in Cavovarus feet: The Effect of Ankle Arthritis on Clinical Outcome

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Summary:
Patients with idiopathic cavovarus deformity and resultant lateral ankle ligament instability often present with varying degrees of degenerative change in their tibiotalar joint. This study determines what effect tibiotalar arthritis has on the clinical and radiographic outcome of patients who have undergone cavovarus realignment procedures combined with lateral ankle ligament reconstruction.

Abstract:
Introduction:
Patients with idiopathic cavovarus deformity and resultant lateral ankle ligament instability often present with varying degrees of degenerative change in their tibiotalar joint. While realignment procedures combined with lateral ankle ligament reconstruction is often performed in conjunction in these patients, it is unclear if these procedures will improve the symptoms related to the degenerative changes present. The purpose of this study was to determine whether the severity of degenerative changes seen would impact the clinical outcome in patients with idiopathic cavovarus feet and lateral ankle ligament instability.

Methods:
22 patients with idiopathic cavovarus feet and lateral ankle ligament instability were treated with lateral ankle ligament reconstruction (either Brostrom-Evans or Chrisman-Snook) and Dwyer calcaneal osteotomy with or without dorsiflexion first metatarsal osteotomy. AOFAS ankle-hindfoot score, Karlsson and Peterson scoring scale, Visual Analogue Scale (VAS) for pain, and the Coughlin satisfaction score were obtained. Preoperative and postoperative ankle radiographs were reviewed and graded using the Van Dijk score.

Results:
Mean follow-up was 60.4 months (23 to 127 months). Preoperatively, 14 ankles had no to minimal arthritis (Grade 0-I) and 8 ankles had significant arthritis (Grade II-III). The mean AOFAS score at latest follow-up was 76.4, however the group with no to minimal arthritis preoperatively scored 85.9 while the group with significant arthritis preoperatively scored 59. Mean Karlsson and Peterson score was 52.3, with the minimal arthritis group scoring 58.6 compared to 37.3 in the significant arthritis group. VAS pain scale was 2.1 in patients with minimal arthritis and 4.0 in patients with significant arthritis. There were 12 excellent/good results, 1 fair result, and 1 poor result in patients with no to minimal arthritis. In the significant arthritis group, there were 3 excellent/good results, 2 fair results, and 3 poor results. Four patients were noted to have progression of arthritis. Two patients in the significant arthritis group eventually required ankle fusion, were graded as poor results, and were not included in the scoring analysis.
Conclusion:
Patients treated with lateral ankle ligament reconstruction and cavovarus realignment osteotomy in the face of no to minimal tibiotalar arthritis have higher clinical scores and increased satisfaction compared to patients with significant tibiotalar arthritis. A cautious and realistic approach should be followed when recommending surgical treatment for patients with lateral ankle ligament instability and idiopathic cavovarus deformity with concomitant tibiotalar degenerative changes.