Performance of Total Ankle Arthroplasty and Ankle Arthrodesis on Uneven Surfaces: A Prospective Study

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Summary
A prospective study was performed comparing 61 total ankle arthroplasty patients to 16 ankle arthrodesis patients. In addition to clinical outcome measures, patient performance on uneven surfaces was studied. TAA patients had a significantly better outcome than the arthrodesis patients in the Beuchel-Pappas scale (p=.036), AOFAS Ankle Hindfoot score (p=0.03), ankle dorsiflexion (p

Introduction
Both total ankle arthroplasty (TAA) and ankle arthrodesis are options for the treatment of ankle arthritis and have been shown to improve gait postoperatively. Little is known about the postoperative performance of these patients on uneven surfaces.

Methods
Between 2010 and 2013, 77 consecutive patients were enrolled in a prospective study and completed 12 months of followup. Patients received either a TAA (61 patients) or an ankle arthrodesis (16 patients). Preoperatively, at 6 months and 12 months postoperatively, patients were evaluated clinically and functionally on stairs, an inclined ramp, and an uneven surface. Patients graded their function on these surfaces using a visual analog scale (VAS) in addition to standard clinical grading scales.

Results
There was no statistically significant difference between the patient groups preoperatively (all p>.05). Both TAA and ankle arthrodesis groups had high patient satisfaction, 3.5 and 3.4 out of 4.0, respectively. Both groups had improvement in Beuchel-Pappas scores, VAS pain scores, AOFAS Ankle Hindfoot scores, and functional scores for walking on flat surfaces, upstairs, downstairs, uphill, downhill, and on uneven ground at 12 months of followup (all p values

Conclusion
In conclusion, patients with total ankle arthroplasty and ankle arthrodesis have improved performance walking on uneven surfaces at 12 months of follow-up compared to preoperatively. TAA patients had higher scores than the ankle arthrodesis patients functioning upstairs, downstairs, and uphill. There was no statistically significant difference on flat surfaces, uneven surfaces, or downhill.