

Total Ankle Arthroplasty vs Arthrodesis Improves Ability to Walk Stairs and Hills

Written by Jaye Summers

For patients with arthritis of the ankle, both total ankle arthroplasty (TAA) and ankle arthrodesis (AA) can improve patients' gait pattern and function. Theoretically, the 2 benefits of TAA vs AA are less adjacent joint degeneration and improved overall function. However, even with TAA, patients are typically unable to recover a functionally normal gait [Flavin R et al. *Foot Ankle Int.* 2013]. In addition, there is little available information about how well these patients are able to postoperatively maneuver activities of daily living, such as climbing stairs and gentle hills and walking on uneven surfaces.

James R. Jastifer, MD, Borgess Bone & Joint Institute, Vicksburg, Michigan, USA, described a prospective cohort study that compared TAA with AA with regard to patients' eventual ability to perform activities of daily living [Jastifer J et al. *Foot Ankle Int.* 2015]. The study initially included 95 patients with end-stage ankle arthritis who chose to undergo either TAA (n = 76) or AA (n = 19) between 2010 and 2013; the final results included 61 TAA patients and 16 AA patients.

At 6 months and 12 months postoperatively, patients were referred to see a physical therapist for clinical and functional evaluation on stairs, an inclined ramp, and an uneven surface. In addition, patients self-graded their function on these surfaces using a visual analog scale (VAS) in addition to standard grading metrics that included the Buechel-Pappas Scale, the American Orthopaedic Foot & Ankle Society (AOFAS) Ankle-Hindfoot Scale, and patient satisfaction.

Preoperatively, there was no statistically significant difference between the patient groups. Postoperatively, patients in both groups expressed high levels of satisfaction with their activity. Both groups had significant improvement in Buechel-Pappas scores, VAS pain scores, AOFAS scores, and functional scores for walking on flat surfaces, upstairs, downstairs, uphill, downhill, and uneven ground at 12 months (Tables 1 and 2). Patients who underwent TAA experienced a significantly better outcome than the AA patients in walking uphill ($P < .016$) as well as upstairs ($P < .013$) and downstairs ($P < .012$).

Dr Jastifer reviewed some limitations of the study, which included that fact that it was both nonrandomized and underpowered to find differences between the 2 groups relative to functional outcomes. He also explained that not much is known about the cutoff point for clinical

Table 1. Total Ankle Arthroplasty Mean Outcome Measures and Functional Scoring

	Arthroplasty			
	Baseline	6 Months	12 Months	P Value ^a
Satisfaction (1-4)	—	3.4	3.5	—
Buechel-Pappas (0-100)	55.8	78.8	83.7	< .001
Visual Pain Scale (0-10)	5.2	1.6	1.5	< .001
AOFAS total	51.6	77.5	80.8	< .001
Ankle DF (degrees)	5.8	8.1	8.9	< .001
Ankle PF (degrees)	25.8	25.2	26.4	.68
Walk flat surface (1-10)	2.8	0.7	0.5	< .001
Walk upstairs (0-10)	6.6	1.1	0.8	< .001
Walk downstairs (0-10)	5.2	2.3	1.8	< .001
Walk uphill (0-10)	3.7	0.9	0.5	< .001
Walk downhill (0-10)	4.4	1.2	0.9	< .001
Walk uneven surface (0-10)	5.4	2.0	1.8	< .001

AOFAS, American Orthopaedic Foot & Ankle Society; DF, dorsiflexion; PF, plantar flexion.

^aMean difference between baseline and 12 months.

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Table 2. Ankle Arthrodesis Mean Functional Scoring

	Arthrodesis			
	Baseline	6 Months	12 Months	P Value ^a
Satisfaction (1-4)	—	3.4	3.4	—
Buechel-Pappas (0-100)	55.6	65.8	76.2	.002
Visual Pain Scale (0-10)	6.6	2.5	2.2	< .001
AOFAS total	52.4	65.4	71.8	< .001
Ankle DF (degrees)	5.4	1.5	3.1	.164
Ankle PF (degrees)	29.8	7.8	12.6	< .001
Walk flat surface (1-10)	3.1	1.6	1.1	< .001
Walk upstairs (0-10)	4.6	2.5	2.3	< .001
Walk downstairs (0-10)	6.0	4.3	3.3	< .001
Walk uphill (0-10)	4.4	2.4	1.7	.013
Walk downhill (0-10)	4.7	2.5	1.8	.006
Walk uneven surface (0-10)	5.6	2.8	2.8	.013

AOFAS, American Orthopaedic Foot & Ankle Society; DF, dorsiflexion; PF, plantar flexion.

^aMean difference between baseline and 12 months.

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significance regarding the difference in performance on uneven surfaces. He also suggested that there could have been a difference in outcomes if the study had been designed in 2, rather than 3, parts and that the study was limited by the use of only 1 degree of incline.

In summary, patients who underwent either TAA or AA improved in their ability to walk uphill and up- and downstairs from baseline to 12 months. However, there was a significant improvement in these 3 parameters among the TAA patients compared with those who underwent AA.

No Added Benefit With Surgical Treatment of Acute Acromioclavicular Joint Dislocation

Written by Emma Hitt Nichols, PhD

Hook plate fixation of acute grade III acromioclavicular (AC) joint dislocations resulted in similar clinical outcomes at 12 months compared with conservative therapy with a sling. Stéphane Pelet, MD, PhD, FRCSC, Hôpital Enfant-Jésus, Quebec, Quebec, Canada, presented data from a study comparing conservative treatment with surgical hook plate treatment [NCT01110304].

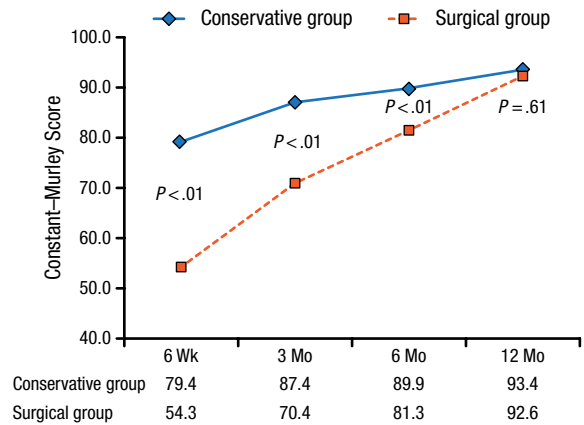
AC joint dislocation is a common injury and mainly results from an impact to the point of the shoulder. Conservative therapy with a sling is the predominant treatment, and the role for surgical therapy is still controversial. The purpose of this trial was to compare the efficacy of surgical treatment of acute grade III AC joint dislocation with a hook plate to the conservative management.

In this single-center, prospective trial, 56 patients with acute grade III AC dislocation were randomly assigned to undergo surgical treatment with hook plate fixation or conservative therapy with a sling. Patients were assessed at 1-year follow-up and then by telephone at 2 and 3 years. In patients who had undergone surgery, hardware removal was allowed at 6 months. Patient characteristics such as sex, smoking status, type of work (physical vs intellectual), and sporting level were similar among both arms.

The primary end point was Constant-Murley score at 1 year. Secondary end points included Disabilities of the Arm, Shoulder, and Hand (DASH) score; shoulder range of motion; return to main activities; radiographic assessment; American Shoulder and Elbow Surgeons Standardized Shoulder Assessment Form; Rowe assessment score; and complications.

Although patients in the surgical arm experienced significantly lower Constant-Murley scores from 6 weeks to 6 months ($P < .01$), by 12 months there was no significant

Figure 1. Effect of Hook Plate Fixation on Outcomes in Acute Acromioclavicular Joint Dislocation



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difference compared with conservative therapy ($P = .61$; Figure 1). Similarly, the surgical group demonstrated higher DASH scores from 6 weeks to 6 months ($P < .01$), but there was no significant difference at 12 months compared with conservative therapy ($P = .86$).

At 1 year, there was a significant difference in radiographic evaluation between the 2 arms ($P = .001$). In the surgical arm, no joints remained dislocated, 3 were subluxated, and 23 were reduced. In the conservative-therapy arm, 30 joints were subluxated or dislocated. The coracoclavicular distance was significantly improved immediately after surgery for up to 12 months compared with the distance observed in patients who received conservative therapy ($P < .01$).

There were no complications in the conservative-therapy group. In patients who underwent surgery, 9 complications occurred, including 8 acromial erosions and 1 plate failure. In addition, 92% of patients underwent reoperation for plate removal, whereas no patients in the conservative-therapy group underwent surgery ($P < .01$). At 2- and 3-year follow-up, none of the patients had undergone further surgery for chronic AC joint pain or instability, and only 1 patient, who was treated with conservative therapy, reported slight pain but had full range of motion.

Prof Pelet concluded that the results from this study suggest that conservative management and surgical treatment of acute grade III AC dislocations result in similar outcomes by 12 months. Although safe, Prof Pelet pointed out that hook plate fixation was associated with high complication and reoperation rates. In addition, patients treated with conservative therapy appear satisfied with their care.