

Title: Outcomes and Complications After Open Versus Posterior Arthroscopic Subtalar Arthrodesis in 121 Patients

Reference: Rungprai C, Phisitkul P, Femino JE., Martin KD, Saltzman CL, Amendola A. Outcomes and Complications After Open Versus Posterior Arthroscopic Subtalar Arthrodesis in 121 Patients. *J Bone Joint Surg Am.* 2016 Apr 20; 98(8), 636-646.

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Podiatric Relevance: A common condition seen and treated by foot and ankle surgeons is subtalar joint arthritis. Arthrodesis of the subtalar joint may be indicated if a patient fails standard conservative treatment. Traditionally, subtalar arthrodesis has been performed using an open technique, however this technique is not without risk with regards to wound healing complications and increased post-operative morbidity. Recently, advancements in arthroscopic techniques and surgeon skill have allowed foot and ankle surgeons to increase arthroscopy-assisted subtalar joint arthrodesis in an attempt to decrease morbidity. This study reviews a consecutive series of 121 patients treated with either open or posterior arthroscopic techniques are presented with functional outcomes and complications.

Methods: A level IV retrospective cohort study was performed for all patients who received either open or arthroscopic subtalar joint arthrodesis. A total of 121 consecutive patients (129 feet) who underwent subtalar arthrodesis with open (60 feet in 57 patients) or arthroscopic (69 feet in 64 patients) techniques were identified. Prospective outcomes were then evaluated by using the visual analog scale (VAS) for pain, Short Form (SF)-36, Foot Function Index (FFI), and Angus and Cowell rating scores. Secondary outcomes included hindfoot alignment, operative time, length of hospital stay, fusion rate, time to return to work, ability to perform sports and activities of daily living, and complications.

Results: The open and arthroscopic groups both had improvement but no statistically significant improvement in VAS scores, FFI, SF-36, Angus and Cowell rating scores. There were no statistically significant similarities between the groups for VAS scores, mean operative time, and coronal plane hindfoot alignment. No statistically significant differences were appreciated between the groups in regards to union rates among different sizes of screws, as well as between different types of bone graft. The open group had more frequent Sural nerve complications and painful surgical scars. Arthroscopic group had more hardware related pain.

Conclusions: There were no statistically significant differences found in a number of secondary outcome measures, including: pain, function, complications, and return to work. There were a number of limitations given the nature of the retrospective comparison study design, including, but not limited to, concerns for selection bias into surgical groups, follow up duration, and methods regarding evaluation of time to union. Both arthroscopic and open subtalar arthrodesis show improvements and future higher level studies are needed to evaluate outcomes associated with each procedure.