Is Valgus Deformity Greater Than Ten Degrees at the Ankle Really a Contraindication to Total Ankle Arthroplasty?

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Introduction
Total ankle arthroplasty (or TAR) in the setting of coronal deformity is controversial. Historically, coronal deformity over 10 degrees was thought to be a contraindication; however, more recent literature has shown that acceptable outcomes can be achieved. Clinical information on the opposite deformity, valgus, is lacking. The purpose of this prospective cohort study was to evaluate survivorship of TAR components in the setting of preoperative valgus coronal deformity. A matched cohort of TAR performed in ankles with no coronal deformity was used for comparison.

Methods
Between 2001 and 2009 consecutive patients with valgus deformity greater than 10 degrees who were willing to undergo TAR were enrolled. A minimum of two-year follow-up was required. A primary outcome of revision of the metal components was selected. Secondary outcomes including re-operation and patient outcome scores, as well as radiographic and clinical data were also collected.

Results
31 TAR in 29 patients met the inclusion criteria. The two-year failure or metal component revision rate was 12.90% (95% confidence interval [CI] 3.63%–29.83%). The two-year reoperation rate, which included any operation on the operated foot and ankle that was not a metal component revision, was 9.7% (95% confidence interval [CI] 2.56%–25.7%), with three patients requiring reoperation. This compared unfavorably to the control population. (Revision rate, reoperative rate) The AOS Pain Component decreased by an average of 27.7 ± 23.2 points in the valgus group and 34.7 ± 21.9 in the neutral group (p<0.01). There was no statistical difference in pain improvement between the two groups (p=0.793). The AOS Disability Component decreased by an average of 40.7 ± 18.6 points in the varus group and 38.0 ± 23.8 in the neutral group (p<0.01). There was no statistical difference in pain improvement between the two groups (p = 0.578).

Conclusion
Although clinical results from TAR in the setting of valgus can be quite good, the failure rate of TAR in this setting is relatively high. Caution should be used when attempting TAR in valgus deformity, and patients should be counseled appropriately before proceeding.