

Paper #15

Varus-Valgus Constrained Liners in Revision Total Knee Arthroplasty: Mean Clinical Follow-up 6 Years?

Nicholas M. Hernandez, MD, Christine J. Wu, BS, **Zoe W. Hinton, BS**, Samuel S. Wellman, MD, William A. Jiranek, MD, FACS, Thorsten M. Seyler, MD, PhD

Introduction: There is scant literature evaluating varus-valgus constrained (VVC) prostheses in contemporary revision TKA. Therefore, we aimed to evaluate the durability of VVC revision TKA with selective use of cones.

Methods: A retrospective review of 194 revision TKAs with VVC was performed from 2005 through 2018 at a single institution. The mean follow-up was 6 years. Stems were used in all but one knee. Tibial cones were used in 48% of knees, while femoral cones were used in 19% of knees. AORI classification in femurs was 1 in 34%, 2A in 20%, 2B in 37%, 3 in 10%; and in tibias was 1 in 25%, 2A in 17%, 2B in 48%, and 3 in 10%. Kaplan-Meier analysis was used to evaluate survivorship. Hazard ratios were used to evaluate for risk factors. A radiographic review was performed.

Results: The survival analyses at 6 years showed 93% free of revision for aseptic component loosening, 76% free of revision for any reason, and 74% free of reoperation. Cemented femoral stem fixation (vs. uncemented) was associated with a lower risk of revision for femoral aseptic loosening ($p < 0.05$). Age less than 65 years and progressive radiographic changes were associated with an increased risk of revision for aseptic loosening ($p < 0.05$). The use of tibial or femoral cones was not associated with revision for aseptic loosening ($p > 0.05$), albeit cones were used preferentially in cases with more severe bone loss. Progressive radiographic changes were seen in 19% of femoral constructs and 16% of tibial constructs. The most common reason for re-revision was PJI (65% of re-revisions).

Conclusions: VVC revision TKA with selective use of cones provided a durable outcome, as 93% were free of revision for aseptic loosening at 6 years. We recommend close observation of those who are younger and those with progressive radiographic changes.

Notes
