

Paper #2

To Cement or Not? Five-Year Update of a Prospective Randomized Trial Comparing Cemented vs. Cementless Total Knee Arthroplasty

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Introduction: The optimal mode of fixation in total knee arthroplasty (TKA) is a continuing subject of debate. The younger population of knee patients and longer life expectancies require excellent outcomes with longer durability. The purpose of this study was to compare mid-term outcomes for cemented and cementless TKA.

Methods: Previously, we reported two-year results for an original cohort of 100 TKA patients in a prospective, randomized trial. Exclusion criteria included patient age over 75 years and grossly porotic bone at time of surgery. Age, gender, and BMI were similar between groups. Knee Society Scores (KSS), Oxford scores and pain visual analog scales (VAS) were collected preoperatively and postoperatively. A power analysis indicated that a minimum of 42 patients per group was required to show a statistically significant difference in the KSS with 80% power. A 5-year follow-up has been obtained with radiographic analysis for 85 patients. Kaplan-Meier survivorship curves were generated with revision for any reason being the endpoint.

Results: At 5 years, the mean KSS clinical and functional scores, mean Oxford scores, and responses to self-reported questions for satisfaction (less pain and better function) were similar in both groups. The cementless group had two revisions, one for instability and one for malunion after late periprosthetic fracture. The cemented group had one revision for infection and one amputation following a traumatic knee dislocation. Survivorship with revision as an endpoint was equivalent (96%, $p=0.98$) for both groups. There was no significant difference in the incidence of radiolucencies between the groups ($p=0.228$), all were non-progressive, and 3/4 with subsidence from the two-year report had stabilized.

Conclusions: Cementless TKA continues to show equivalent patient reported outcomes and survivorship compared to cemented TKA at mid-term follow-up. Updates are planned at the 10 and 15-year intervals to obtain long-term outcomes.