

A Comparison of Cementless vs. Cemented Total Knee Replacement: Minimal Difference in Early Outcomes

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INTRODUCTION: Modern cementless total knee replacement (CL-TKR) is an increasingly popular alternative to traditional cemented fixation (CEM-TKR). However, there is limited evidence about early complications and failure after CL-TKR. The purpose of this study was to evaluate the early survivorship and outcomes of CL-TKR versus CEM-TKR of the same design.

METHODS: We reviewed 598 primary unilateral TKRs (170 CL-TKR and 428 CEM-TKR) of the same design from 2016-2018. Demographic information, operative details, and complications were obtained from the medical record. Treatment failure was defined as any reoperation. Survivorship curves for CL-TKR and CEM-TKR were generated via the Kaplan Meier method. Prospectively collected outcome measures (PROMS) including VAS pain and KOOS Jr were compared between groups. Statistical differences between CL-TKR vs. CEM-TKR was performed with Chi-square and students t-test.

RESULTS: Patients undergoing CL-TKR were younger (62.8 ± 5.5 vs. 67.3 ± 7.3 years, $p < 0.001$) and more often male (54.1% vs. 41.6%, $p = 0.006$). Cruciate retaining knees were used more often in CL-TKR (18.8 vs. 12.4%, $p = 0.042$). The prevalence of computer assistance was utilized less frequently (15.9% vs. 53.3%, $p < 0.001$) for CL-TKR. CL-TKR required less operative time (82.6 ± 21.4 mins vs. 109.1 ± 24.6 mins, $p < 0.001$), but the mean length of stay was no different between groups (57 vs. 60.5 hours, $p = 0.98$). No difference was observed in 90-day readmission between CL and CEM TKR (1.8% vs. 0.9%, $p = 0.954$). Survivorship free from revision was 96% (95% CI=92-99%) and 95% (95% CI=91-98%) at 2 years for CL-TKR vs. CEM-TKR, respectively ($p = 0.419$). CL-TKR TKR failure due to aseptic loosening was 1% (2/170). Both cases underwent isolated tibial component revision without further complications.

DISCUSSION AND CONCLUSION: At 2 years, survivorship of CL-TKR was equivalent to CEM-TKR of the same design, yet the operative time was significantly less. In addition, there was no difference in LOS or 90-day readmission between groups.