Cementless TKA Using an Ultra-Conforming Tibial Bearing: Outcomes at Minimum 5-year Follow-up

John B Meding, R Michael Meneghini[1], Lindsey Kristen Meding, Evan R Deckard, Leonard T Buller
[1]Indiana Joint Replacement Institute

INTRODUCTION:

As opposed to the UK, cementless fixation for primary TKA continues to increase steadily in the United States. However, when comparing cementless to cemented TKA, reports on revision rates have been mixed. One confounding variable may include the tibial insert design. The purpose of this study was to assess implant survivorship and clinical outcomes at a minimum 5-year follow-up of a cementless TKA using an ultra-congruent articulation.

METHODS:

Between 2017 and 2019, a consecutive series of 244 cementless TKAs of the same contemporary design without tibial screws were implanted at two institutions using mechanical alignment techniques and an ultra-congruent tibial insert. 63% of patients were male. The average age was 61 years (32-91). 18% of patellae were not resurfaced. Patients were followed at six months, and then every 2-3 years using KOOS-JR and Knee Society clinical and radiographic scores. Pre- and post-operative radiographs were classified according to CPAK type. The average follow-up was 5.6 years (5 to 7.5 years).

RESULTS:

At final follow-up, interval KOOS-JR scores averaged 84 (42.3-100) with four patients failing to achieve a MCID. Knee Society scores averaged 91 (50-100) with all patients achieving a MCID. Postoperative flexion averaged 115 degrees (range, 85-135). There were no deep infections, two MUAs (0.8%), and one patella fracture (treated non-operatively). Five knees (2%) were revised (three for flexion instability, one for pain, and one for femoral fibrous ingrowth). At five years, survivorship free of aseptic loosening was 99.6%. Change in CPAK type did not correlate with final KOOS-JR, KSS, or pain.

DISCUSSION AND CONCLUSION:

Cementless TKA using this conforming design has provided excellent clinical results out to five years. Once initial component stability is achieved, the ultra-congruent nature of this articulation does not appear to adversely influence the durability of implant fixation, regardless of whether CPAK type was changed or not.