

## **Cemented to Cementless Total Knee Arthroplasty: Is there a Learning Curve?**

Taylor Den Hartog<sup>1</sup>, Austin Benson, Trevor John Allen, Timothy Scott Brown, Nicolas Oliver Noiseux<sup>2</sup>

<sup>1</sup>University of Iowa, <sup>2</sup>University of Iowa Hospitals and Clinics

### **INTRODUCTION:**

Cemented implants have long been considered the benchmark for total knee arthroplasty (TKA). With advances in highly porous metal technology, cementless TKA implants have shown promising short to medium term radiographic survivorship. While early data on cementless TKA is promising, many surgeons have concerns with transitioning a portion or majority of their patient population to cementless design. Our study aims to evaluate if there is a learning curve for surgeons in their first 100 cementless total knee arthroplasties.

### **METHODS:**

Retrospective review of the first 100 cementless total knee arthroplasties performed by two adult reconstruction surgeons, with minimum one year follow up. Patient charts were reviewed for any evidence of complication or reoperation within one year from their surgical date. Patients were separated into 5 groups: operations 1 to 20, 21 to 40, 41 to 60, 61 to 80, and 81 to 100. All radiographs were reviewed for any signs of failure or loosening.

### **RESULTS:**

Two-hundred patients were reviewed in total, including the first 100 consecutive cementless total knee arthroplasties from each surgeon. There were no revisions at one year for patients in groups 1 and 2. Group 3 had 2 revisions followed by group 4 which had 3 revisions and group 5 in which 3 patients underwent revision TKA. There was no statistically significant difference between groups (p 0.16). There was no statistically significant difference in patient age (p 0.054) or BMI (p 0.114) for patients undergoing revision TKA. Kaplan-Meier Survival with and endpoint at one year postoperatively was significantly different for the first 100 patients (50 from each surgeon) when compared to the second 100 (p 0.03). There were no signs of loosening across all implants at one year follow up.

**DISCUSSION AND CONCLUSION:** Transitioning from all cemented to some cementless TKAs did not show an increase in complications leading to revision TKA, and there was no discernable 'learning curve' in incorporating cementless TKAs into practice.