Long Term Survivorship of Computer Assisted Total Knee Replacement

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INTRODUCTION: Computer Assisted Orthopaedic Surgery (CAOS) for total knee arthroplasty (TKA) has been in use for more than 20 years. The aim of this study is to report the long-term survivorship including rates of revision and reoperation for patients with a minimum of 2 years of follow-up after CAOS TKA.

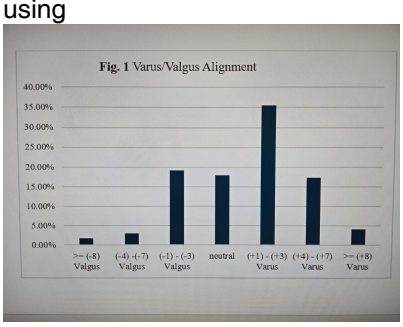
METHODS: This study was approved by the University IRB and is a retrospective chart review of 360 consecutive cases from October 1st 2001 to December 31st 2005. All cases were performed with CAOS. Data was obtained through operative reports, implanted device information sheets, and patient demographic forms within an electronic medical records system. A minimum of 2 years follow-up was required for the patient to be considered not lost to follow-up. Online obituaries were reviewed to determine if a patient was deceased. All patients analyzed received a cemented CR knee with an all-poly cemented patella. Mechanical axis was measured using long standing, lower extremity, weight-bearing x-rays. Re-operations are defined as the patient having to return to the operating room, including for a polyethylene exchange. Revisions are defined as any surgery where an implant was removed including the patella. Data from international registries were reviewed to compare rates of revision and re-operation. Variables included gender, BMI, diagnosis at time of surgery**,** age at surgery, revisions, reoperations, and total years of follow-up. Kaplan-Meir survivorship curves were calculated.

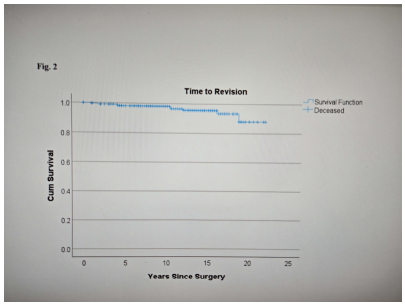
RESULTS:

There were 360 cases performed. Thirty-six patients were confirmed deceased and 5 patients were lost to follow-up. Eighty-two percent of cases had a diagnosis of osteoarthritis. Forty-five patients did not receive the cemented CR knee with an all-poly cemented patella. Two hundred seventy four cases were reviewed for final analysis. Patient population demographics 65.7% female (n=180), average age at the time of surgery was 64 years, range of 36-88 years, average BMI was 32.83, range 20 -49. Average time of follow-up was 11.72 years, range of 2 to 22 years. There were 13 re-operations, 4.74% and 5 had revisions (1.82%), Table 1. Radiographs were available for 167 cases (61%). Average alignment at last follow up was 1.26° varus, 75% were neutral or varus, Figure 1. Survivorship up to 22 years is 98%, Figure 2.

DISCUSSION AND CONCLUSION:

The goal of CAOS in TKA is to ensure a reproducible alignment that confers substantial improvements in longevity and durability of the implants. Our low revision rate of 1.82% at up to 22 years of follow up demonstrates the advantages of using this technology.





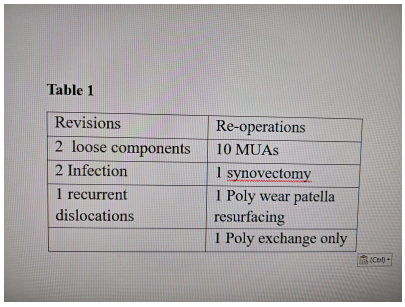


Table 1

Revisions	Re-operations
2 loose components	10 MUAs
2 Infection	1 synovectomy
1 recurrent dislocations	1 Poly wear patella resurfacing
	1 Poly exchange only