575 Rotating-Hinge TKAs: Surprisingly Low Rates of Aseptic Loosening

E Bailey Terhune, Mason Frederick Carstens, Kristin Fruth, Charles Patrick Hannon, Nicholas Bedard, Kevin I Perry, Daniel J Berry, Matthew Philip Abdel

INTRODUCTION:
Contemporary rotating-hinge total knee arthroplasties (RH-TKAs) have reasonable short-term survivorship in smaller series, but concerns remain regarding risks of aseptic and septic failures. The purpose of this study was to assess outcomes of contemporary RH-TKAs in one of the largest series to date.
METHODS:
We identified 575 RH-TKAs performed (59% for aseptic etiologies; 41% during reimplantation after two stage treatment of infection) from 2002-2021 at a single institution. Mean age was 67 years, 58% were female, and BMI was 33 kg/m^2. 65% had AORI type 2B or 3 bone loss. Kaplan-Meier survivorship analyses were performed. Mean follow-up was 6 years.
RESULTS: Survivorship free from any revision was 76% at 5 years and 64% at 10 years. The most common revision indications were PJI (54%) and aseptic loosening (20%). Survivorship free of revision for aseptic loosening was 96% at 5 years and 90% at 10 years. In RH-TKAs performed for aseptic loosening, survivorship free from revision for aseptic loosening was 87% at 5 and 10 years. Survivorship free from revision for PJI was 84% at 5 years and 81% at 10 years. In RH-TKAs performed for reimplantation, survivorship free of revision for PJI was even lower at 74% at 5 years and 73% at 10 years. As such, RH-TKAs utilized for reimplantation were associated with increased risk for revision for recurrent PJI (HR 3, $p<0.001$) and any revision (HR 2, $p<0.001$). Of 438 knees not revised, 6% of femoral components and 8% of tibial components had radiographic evidence of loosening at final follow-up. Mean KSS improved from 33 to 69 at 2 years ($p<0.001$).
DISCUSSION AND CONCLUSION:
In this large series of RH-TKAs, the 10-year survivorship free from aseptic loosening was 90%. This represents one of the best survivorship free of aseptic loosening published to date. Knees with prior PJI have markedly decreased survivorship, with double the risk of revision.