

Do Metal on Polyethylene or Cement on Cement Articulating Knee Spacers Provide Better Outcomes in the Treatment of Chronic Total Knee Arthroplasty Periprosthetic Joint Infection?

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INTRODUCTION:

Literature on the optimal construct for total knee arthroplasty (TKA) articulating spacers in the setting of two-stage exchange for chronic periprosthetic joint infection (PJI) is limited. The primary aim of this study was to compare long-term outcomes of patients treated with either metal on polyethylene (MoP) or cement on cement (CoC) articulating spacers.

METHODS:

We reviewed 148 CoC and 37 MoP spacers placed for chronic PJI at a single institution. Mean age at spacer placement was 67 years, 51% were female, and mean BMI was 30 kg/m². Fifty-eight percent of patients had a history of treatment for ipsilateral knee infection prior to spacer placement. Eighty-five percent of patients underwent reimplantation at a mean of 117 days. Presenting clinical features were similar between MoP and CoC groups. Mean follow-up was 4 years. Survivorship analyses and multivariate Cox regression analyses controlling for presenting clinical features were performed to determine long-term survivorship and risk factors for failure.

RESULTS: The 1, 5 and 10 year survivorship free of reinfection for CoC spacers were 79%, 73%, and 68%, respectively. The 1, 5 and 10 year survivorship free of reinfection for MoP spacers were 84%, 74%, and 74% respectively. Besides reinfection (25%), the most common reasons for revision were stiffness (3%), aseptic loosening (2%), and patellar-related complications (2%). These were not significantly different between groups. There were 7 (5%) CoC spacer dislocations and 0 MoP spacer dislocations, but this was not statistically significant. Multivariate Cox regression analyses demonstrated no difference in risk for revision or reinfection between groups, but did show increased risk of revision (HR 2.1; 95% CI:1.0-4.1, p=0.04) with use of chronic suppressive antibiotics after reimplantation.

DISCUSSION AND CONCLUSION:

This is one of the largest series comparing survivorship results of MoP to CoC articulating spacers in the treatment of chronic TKA PJI. In a high-risk cohort of patients, where the majority had a history of infection treatment prior to spacer placement, we reported encouraging and similar survivorship free of reinfection at 10 years for MoP and CoC spacers of 74% and 68%, respectively. CoC spacers had a higher rate of spacer dislocation, but this was not statistically significant. Further research is needed on potential risks of chronic suppressive antibiotics after reimplantation.