Ultracongruent and Posterior-Stabilized Bearings Perform Similarly in Contemporary Total Knee Arthroplasties at Mid-term Follow-up

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INTRODUCTION:

Historically, posterior-stabilized (PS) TKAs were utilized when the PCL was sacrificed to preserve femoral rollback and knee range of motion. More recently, innovative ultracongruent (UC) bearings have seen increased utilization in contemporary practice. This study was undertaken to compare the survivorship and clinical outcomes between PS and UC bearings.

METHODS:

Using an institutional total joint registry, we retrospectively identified 107 TKAs utilizing an UC polyethylene between 2013 to 2018. The UC cohort was matched 1:2 to PS TKAs according to age, sex, body mass index (BMI), and year of surgery. Mean age was 71 years at time of surgery, 70% were female, and mean BMI was 27 kg/m². Revisions, reoperations, and clinical outcomes including Knee Society score (KSS) and forgotten joint score (FJS) were studied. Mean follow-up was 5 years.

RESULTS:

There was 1 revision in the PS cohort – a polyethylene exchange at time of revision for extensor mechanism disruption managed with Marlex mesh reconstruction. There were no revisions in UC cohort. There was no difference in the 5-year survivorship free from any reoperation between cohorts (UC: 96%, PS 94%, p=0.48). Of the 16 reoperations, leading indications included manipulation under anesthesia (56%), patellar crepitus (13%), and extensor mechanism disruption (13%). There was no difference in the arc of motion achieved postoperatively between cohorts (UC 109°, PS 110°, p=0.80). Both cohorts experienced similar improvements in KSSs with no differences identified at final follow-up (p=0.74). At final follow-up, FJSs were comparable between cohorts (UC: 66, PS: 59, p=0.09).

DISCUSSION AND CONCLUSION: In a matched cohort, UC bearings performed similarly to PS bearing

In a matched cohort, UC bearings performed similarly to PS bearings with respect to implant survivorship, range of motion achieved, KSSs, and FJSs at 5-year follow-up. These data do not support the promotion of one bearing over the other when used in contemporary practice.