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Anterior Stabilized vs. Cruciate-Retaining Bearing in Primary Total Knee Arthroplasty

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Introduction: There are several bearing options available for primary total knee arthroplasty (TKA). The purpose of this study is to compare outcomes and survivorship between the ultra-congruent anterior stabilized (AS) and cruciate-retaining (CR) bearing.

Methods: A retrospective review was performed from 2010 through 2014 of all patients who underwent primary TKA with the Vanguard (Zimmer Biomet) implant with 2-year minimum follow-up and/or failure, revealing a cohort of 3,323 patients (4,164 knees). The AS bearing was used in 1,471 knees (35%) while the CR bearing was used in 2,693 knees (65%). Outcomes assessed were knee range of motion (ROM), Knee Society pain (KSP) scores, Knee Society clinical (KSC) scores, Knee Society functional (KSF) scores and UCLA activity scores. The need for manipulation under anesthesia (MUA), non-revision surgery and revisions were assessed.

Results: Mean follow-up was 5.2 years for the AS group and 5.6 years for the CR group ($p < 0.001$). The AS group had significantly higher improvements in knee ROM, KSC, KSF and KSP scores. MUA's were performed on 120 knees (8.2%) in the AS group compared to 158 knees (5.9%) in the CR group ($p = 0.005$). The AS group had significantly less all-cause failure ($p = 0.004$), aseptic failures ($p < 0.001$), revisions for instability ($p < 0.001$) and revisions for isolated polyethylene wear ($p = 0.003$). The 10-year all-cause survival for AS was 97.4% (95% CI, 96.6% to 98.2%) and for CR was 91.1% (95% CI, 89.3% to 93%) ($p = 0.02$). The 10-year aseptic survival for AS was 98.3% (95% CI, 97.5% to 99.1%) and for CR was 92.3% (95% CI, 91% to 94%) ($p = 0.002$).

Conclusions: These early to mid-term results demonstrate that the AS bearing had significantly higher improvements in clinical and functional outcomes as well as greater survivorship compared to the CR bearing.

Notes
