The Effect of Dual Mobility Articulations on Re-revision After Revision for Dislocation

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INTRODUCTION: Recurrent instability and subsequent revisions remain persistent challenges after revision total hip arthroplasty. Dual mobility acetabular constructs may reduce dislocation and early re-revision risk, though long-term comparative data remain limited. This study evaluated whether dual mobility cups used during revision for instability are associated with lower re-revision rates than traditional fixed-bearing constructs.

METHODS: A retrospective analysis of the Michigan Arthroplasty Registry Collaborative Quality Initiative identified 796 patients who underwent revision of elective primary total hip arthroplasty for dislocation between February 15, 2012, and December 31, 2023. Resurfacing, conversion, and urgent cases were excluded. The primary outcome was time to re-revision. Cumulative percent revision (CPR) curves were compared using log-rank testing. A multivariable logistic regression model was used to evaluate odds of revision within two years, adjusting for age, sex, body size, smoking status, and comorbidity status.

RESULTS:

The two- and five-year CPR for re-revision were 12.6% (95% CI, 10.1–15.0) and 17.1% (95% CI, 14.1–20.0), respectively. Dual mobility constructs had significantly lower CPRs than non–dual mobility (log-rank p = 0.022). At one year, CPR was 4.7% (95% CI, 1.8-7.5) versus 11.3% (95% CI, 7.7-14.8); at two years, 6.8% (95% CI, 3.3-10.2) versus 14.2% (95% CI, 10.2-18.0). By five years, confidence intervals overlapped: 12.3% (dual mobility) versus 20.2% (non–dual mobility). The early protective effect persisted after adjustment; non–dual mobility constructs had significantly higher odds of revision within two years (odds ratio, 2.04; 95% CI, 1.2–3.5; p = 0.009).

DISCUSSION AND CONCLUSION: Dual mobility cups significantly reduce early re-revision risk following revision total hip arthroplasty for instability, even after adjusting for patient characteristics. However, the benefit diminishes by five years, likely due to other failure mechanisms. These findings support selective dual mobility use and highlight the need for long-term surveillance to assess durability and late complications.