Revision Dual Mobility Construct with Mismatched Acetabular and Femoral Components Does Not Increase the Rate of Reoperation

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INTRODUCTION:
Dual mobility (DM) constructs for revision total hip arthroplasty (THA) have continued to grow in popularity to mitigate the risk of instability. This benefit comes at the cost of additional articulating surfaces and potential unique modes of failure. It is generally recommended by manufacturers that the femoral and acetabular components are supplied by the same company. Mis-matched, or “hybrid” constructs, using different manufacturers for femoral and acetabular components may be off label, but preferred in instances of a well fixed femoral or acetabular component at the time of revision THA. There are theoretical concerns that mismatched components could lead to increased failure rates. We aim to investigate the failure rates of “matched” and “hybrid” dual mobility revision constructs.
METHODS:
We retrospectively reviewed 247 revision THA performed with dual mobility constructs between July 2012 and September 2021 at a single institution. DM constructs were classified as “matched” if the acetabular and femoral components were manufactured by the same company with a matching dual mobility liner. DM constructs were classified as “hybrid” if the femoral stem was manufactured by a different company. Failure resulting in need for reoperation was the primary outcome.
RESULTS:
There were 150 matched DM constructs and 97 hybrid constructs. Average follow-up was 4.2 years (range 0.7-9.9 years). Overall, 25 patients underwent re-revision: 12 patients (13%) in the hybrid group, and 13 patients (8%) in the matched group. The difference in rate of re-revisions was not significant (p=0.1840, chi-squared). Average time between index revision and re-revision was 296 days (range 8-1663 days). The reasons for re-revision in the hybrid group were: dislocation (7), PJI (2), Fractured Stem (1), and Other (2). In the matched group, revisions were for PJI (5), dislocation (4), aseptic loosening (2), intra-prosthetic dislocation (1), and LLD (1).
DISCUSSION AND CONCLUSION:
“Mismatched” dual mobility constructs, with acetabular cups and femoral stems from different manufactures, used in revision THA do not confer an increased risk for reoperation. There is no difference in the rate of intra-prosthetic dislocation between the two groups.