Increased Dislocation and Re-operation Rates Associated with Head and Liner Exchanges in Revision Total Hip Arthroplasty for Instability

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INTRODUCTION: Dislocation and re-operation following revision total hip arthroplasty (THA) for instability are prevalent postoperative complications. The purpose of this study was to compare the outcomes of revision THA for instability based on the components revised: isolated head and liner exchange, acetabular only, femoral stem, and both component revision.

METHODS:

We reviewed a consecutive series of 316 patients undergoing revision THA for instability from 2017-2023. We collected data on implants revised during surgery, and dislocation and re-operation rates. Kaplan-Meier curves were used to analyze the dislocation and re-operation rates in patients who received a head and liner exchange compared to those who underwent acetabular, femoral, or both- component revision.

RESULTS:

There were 138 acetabular only (44%), 133 head and liners (42%), 44 (14%) both component, and 9 (2.85%) femoral stem revisions. Dual-mobility implants were more frequently used during acetabular (58%) and both component revisions (75%) ($p< 0.001$), while constrained liners were more common during femoral component revision (43%, $p= 0.048$) and head and liner exchange (56%, $p<0.001$). The dislocation rate was significantly higher in the head and liner group when compared against non-isolated head and liner exchanges (20.3% vs 8.74%, $p=0.005$), as were reoperation rates (27.8% vs 13.7%, $p= 0.003$). The dislocation-free survival rate at 5 years for head and liner exchanges was 79.7% (95% CI: 73.1-86.8) compared to 91.3% (95% CI 87.3-95.4) in non-isolated head and liners ($p=0.003$). Re-operation-free survival was also lower in the head and liners at 5 years than other revision types at 72.9% (95% CI: 65.8-80.9) and 86.9% (95% CI: 82.1-91.9, $p= 0.002$), respectively.

DISCUSSION AND CONCLUSION:

Patients who underwent isolated head and liner exchange during revision THA for instability had an increased risk of postoperative dislocation and re-operation. Surgeons should consider the advantages of more extensive component revision over exchange in appropriately selected patients undergoing revision for instability.