

# **Dual-Mobility Bearings Reduce Instability but are No Panacea in Revision Total Hip Arthroplasty for Recurrent Dislocation: Mid-Term Results from a Single-Center Series**

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## **INTRODUCTION:**

Dual-mobility (DM) bearings are gaining in popularity, as a method to mitigate dislocation in revision total hip arthroplasty (THA). However, there is limited data on its efficacy in revision due to recurrent dislocation. The purpose of this study was to report on a consecutive series of DM constructs used in revision THA for recurrent dislocation and to identify risk factors for failure.

## **METHODS:**

Between 2012 and 2019, 100 consecutive patients underwent revision THA due to dislocation, of which 45 patients (45 hips) received DM bearings. The average age at the time of revision was 74 years (51-88) and patients had an average of 1.6 prior revisions (0-7). Complete cup replacement was performed in 31 patients (69%) and DM cups were cemented into a well-fixed cup in 7 patients (16%). Six patients (13%) had additional stem revision. Rates of redislocation, rerevision for dislocation, and overall rerevision rates were evaluated. Univariate Cox regression was used to analyze demographic variables and biomechanical parameters (leg-length difference, offset, center of rotation, acetabular orientation) as potential risk factors for redislocation. Modified Harris hip scores (mHHS) were calculated. The mean follow up was 53 months (1-103).

## **RESULTS:**

The redislocation rate was 11.1% (5/45) and the median time between revision THA and redislocation was 10 months (0-47). The overall rerevision rate for dislocation and rerevision rate for any reason were 6.7% (3/45) and 17.7% (8/45), respectively. Significant risk factors for redislocation were a lower patient age (HR 1.10; p=0.020), a lower Charlson Comorbidity Index (HR 2.38; p=0.031), abductor mechanism deficiency (HR 14.42; p=0.021), smaller polyethylene head sizes (HR 1.25; p=0.041), and cementation of the DM cup into a well-fixed component (HR 8.23; p=0.022). In all patients with redislocation, the DM component was outside the Lewinnek zone (HR 78.05; p=0.238); no other significant associations were found for any biomechanical parameters. Mean mHHS improved from 43.8 before revision to 65.8 points at last follow up (p<0.01).

## **DISCUSSION AND CONCLUSION:**

This study demonstrates that the use of DM bearings does not reliably prevent instability in revision due to dislocation. Besides correction of component malposition, reconstruction of the abductor integrity may play a key role to reduce the burden in these high-risk patients.