

Mid-term Results of Dual Mobility for Monoblock Metal-on-Metal Revision – Is It Safe?

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Introduction: Revision of monoblock metal-on-metal (MoM) total hip arthroplasty (THA) is associated with high complication rates. Limited revision by conversion to dual mobility (DM) without acetabular component extraction may mitigate these complications. However, the concern for polyethylene wear and osteolysis remains unsettled. This study investigates the mid-term results of DM conversion of monoblock-MoM THA compared to formal acetabular revision.

Methods: 143 revisions of monoblock-MoM THA were reviewed. 29 were revision to a DM construct and 114 were complete revision of the acetabular component. Mean patient age was 61. 55% were women. Components used, acetabular cup position, radiographic outcomes, serum metal ion levels, and HOOS Jr clinical outcome scores were investigated.

Results: At 3.6years follow up [range 2-5years] there were 2 revisions (6.9%) in the DM cohort, 1 for instability and another for periprosthetic fracture. Among the formal acetabular revision group there was 20% early complications (23/114) and 16% early revision surgery (18/114) for: aseptic loosening (6%), deep infection (6%), dislocation (4%), acetabular fracture (3%), and superficial infection or delayed wound healing (6%). In the DM cohort, there were no radiographic signs of aseptic loosening, component migration or polyethylene wear. One DM patient had a small posterior metadiaphyseal femur lesion that will require close monitoring. There were no other radiographic signs of osteolysis. There were no clinically significant elevations of serum metal ion levels. HOOS Jr scores were favorable.

Conclusions: Limited revision with conversion to DM is a viable treatment option for failed monoblock-MoM THA with lower complication rates than formal revision. Limited revision to DM appears to be a safe option for revision of monoblock-MoM THA with a cup in good position and an internal geometry free of sharp edges or articular surface damage. Longer follow-up is needed to demonstrate any potential wear implications of these articulations.