



Paper #49

Adverse Reactions to Metal-on-metal are not Exclusive to Large Heads in Total Hip Arthroplasty

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Introduction: Large head metal-on-metal total hip arthroplasty (MoM-THA) is attractive for increased stability, but have exhibited high rates of loosening and adverse reactions to metal debris (ARMD). Some suggest smaller diameter MoM-THA may be immune to ARMD. The purpose of this study was to review our experience with small head MoM-THA ($\leq 32\text{mm}$) to determine if ARMD occurs with these devices.

Methods: Three hundred patients (348 hips) underwent MoM-THA at our center using a titanium modular acetabular component with chromium-cobalt tapered insert. Head size was 28mm in 71% and 32mm in 29%. Average age was 56 years and gender was male in 52%. Twenty-nine patients (34 hips) were lost prior to 2-year follow-up leaving 271 patients (314 hips) for review.

Results: Follow-up averaged 10.5 years (range, 2-18). Nineteen (6.1%) cups have been revised: 2 (0.6%) infection, 5 (1.6%) loosening, and 12 (3.8%) ARMD. ARMD had two general patterns: 1) 4 hips presented with pain, normal radiographs and elevated serum Co/Cr levels; 2) 6 hips presented with late gradual onset of groin pain, weakness, subluxation, and squeaking and/or grinding in their hips while radiographs and infection serology appeared normal. Revisions in cases with mechanical symptoms were associated with catastrophic pseudotumor and soft-tissue damage. Remaining ARMD revisions were for femoral loosening associated with soft-tissue changes in one and acetabular fracture after falling with metallosis and bone loss present in the other.

Conclusion: Unlike LDMOM, where aseptic loosening and early failure of ingrowth appear to be the main failure modes with ARMD appearing in the early to mid-term, MoM-THA with a titanium shell and metal insert had very low rate of aseptic loosening. ARMD incidence was low but represented 63% of revisions performed. The late onset and devastating nature of metal-related failures is concerning. Symptomatic patients require increased work-up and vigilant observation for ARMD.
