



AB089. SOH22ABS163. Follow up study on a large head Metal-on-Metal bearing surface with TMZF stem with high rates of revision and trunnion failure

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Background: Mechanically assisted crevice corrosion at head neck interface puts implants at risk of trunnionosis, femoral head dissociation, implant failure and the development of metallosis. Metal-on-Metal bearings have very low wear rates, significantly lower than metal-on-polyethylene, but their wear results in cobalt and chromium ion systemic distribution. We present a study of the MITCH metal-on-metal bearing surface coupled with an Accolade TMZF stem.

Methods: This was a retrospective review of 25 patients that underwent MITCH/Accolade TMZF implantation at a minimum of 12 years post operatively. The primary outcome of this study was all-cause revision with particular attention to revision due to trunnion failure and cobalt and chromium ion levels.

Results: We had a revision rate of 56% (n=14) at a minimum of twelve years post operatively. Most notably there were four revisions for a catastrophic trunnion failure for dissociation or fracture. There were two revised for impending trunnion failure. There were five revised for elevated cobalt and chromium levels and radiological evidence of metallosis.

Conclusions: Patients undergoing TMZF alloy cementless

stems coupled with large CoCr alloy heads are at high risk of catastrophic trunnion failure. We had very high rates of catastrophic trunnion failure in our study. It is thought that this high rate of trunnionosis is related to a significantly different Young's modulus resulting in a material mismatch coupled with galvanic corrosion.

Keywords: Arthroplasty; bearing; corrosion; hip; trunnionosis

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Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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