Paper #20

Delta Ceramic on Ceramic THA - Midterm Results

William G. Hamilton, MD, James P. McAuley, MD, FRCSC, Thomas J. Blumenfeld, MD, James Lesko, PhD, Sam Himden, BA, CCRA, Douglas A. Dennis, MD

Introduction: Little data exists on the Delta ceramic on ceramic (COC) ceramic bearing. The purpose of this study is to report the mid-term results of the 28mm and 36mm Delta COC articulations.

Methods: From 2003-2007, 345 subjects received a Delta COC THA in a prospective multicenter IRB approved study with either 28mm (n=177) or 36mm (n=168) articulations. Mean age was 56.9 (range 20 to 75), mean BMI was 29.5 (range 18.4 to 53.1). Annual clinical and radiographic evaluations were performed. Kaplan-Meier survivorship estimates were calculated. Patients were asked if they heard noises from their hip, and positive responses were recorded. The incidence of squeaking was calculated, and several factors were evaluated for possible association with squeaking: age, sex, BMI, cup abduction angle, cup size, head size, and 2+ year Harris Hip score.

Results: At mean follow-up of 5.1 years (range 1.9 to 7.9) the latest average Harris Hip score was 94.4 (range 47 to 100). There were 3 (0.9%) postoperative liner fractures and no femoral head fractures. Nine revisions were performed (28 mm: 1 liner fracture, 2 stem loosening, 1 deep infection; 36mm: 1 liner fracture, 2 stem loosening, 2 deep infection). Kaplan-Meier survivorship at 6 years was 96.8% (93.7-98.4) for the entire cohort; 28 mm 97.7% (93.9-99.1), 36 mm 95.9% (89.9-98.3). Twenty-six (7.5%) subjects reported squeaking; there was no difference in average Harris Hip score (93.3) between this cohort and the remaining patients, and none of these patients were revised. Two (0.6%) subjects were able to reproduce a sound in clinic. Of the variables described above, only head size was statistically associated with squeaking (28mm: 7/177, 36mm: 19/168, $p = 0.013$).

Conclusion: The 6-year survivorship is 97% with the Delta COC bearing. A low incidence (<1%) of liner fractures and reproducible squeaking was observed.