Paper #22

Primary Total Hip Arthroplasty in Patients Less than 50 Years of Age at a Mean of 16 Years

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Introduction: The purpose of this study was to evaluate clinical and radiographic outcomes of patients under 50 years of age undergoing primary THA at minimum of 10 years.

Methods: 309 Consecutive THAs performed on 273 patients were reviewed. At a minimum of 10-years, 13 were deceased, and 23 were lost to follow-up leaving 273 THAs in 243 patients who were followed for a mean of 16 years (range 10-19.9 years). The cohort consisted of 115 females (47.3%) and 128 males (52.7%), with a mean age of 42.3 years at the time of surgery (range, 19-49 years old). 216 had highly cross-linked polyethylene (XLPE) and 57 non-XLPE acetabular liners. Analysis involved Kaplan-Meier survivorship with a log-rank test for equivalence, Fischer's exact test for pairwise comparisons and a paired t-test for Harris Hip Score both with alpha=0.05 being statistically significant.

Results: There were six revisions for wear in the non-XLPE group (10.5%) compared to none in the XLPE group ($p<0.001$). Similarly, survivorship with revision for any reason at 15 years was significantly higher in the XLPE group 93.0% (95% CI 88.0 to 93.4%) compared to 84.2% (95% CI 71.9 to 91.5%) in the non-XLPE group ($p=0.008$). Additional revisions in the XLPE group included 6 for instability (2.8%), 5 secondary to infection (2.4%), and 3 stem failures (1.4%). Non-wear related revisions in the non-XLPE group included 5 due to instability (8.8%) and 3 stem failures (5.3%). Mean Harris Hip Scores for the entire cohort improved from a mean of 46.2 points preoperatively to 89.8 points postoperatively ($p<0.001$).

Conclusions: The use of XLPE has led to a significant reduction in the risk of failure in patients <50 years old, with over 93% survivorship at 15 years. Instability and infection, however, remain substantial causes of failure.