



Obesity is a Risk Factor for Early Aseptic Loosening and Osteolysis of Hip Replacements

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Introduction: Obesity poses a higher rate of post-operative complications after total hip Arthroplasty (THA). However, little is known about the time to presentation for each of these complications prior to revision THA. The purpose of this study was to correlate pre-operative BMI and the time to revision THA for aseptic loosening/osteolysis, infection, instability, adverse reaction to metal debris (ARMD), and peri-prosthetic fracture.

Methods: Using the total joint registry of our institute, we retrospectively reviewed the medical records of 257 revision THA-patients who underwent surgery from January 2011-December 2013. Patients were stratified according to age, gender, ASA scale, reason for revision THA (aseptic loosening/osteolysis, infection, instability, ARMD, periprosthetic fracture, and miscellaneous), preoperative BMI, and time to revision THA.

Results: Of 257 hip revisions, 124 (49%) were performed for aseptic loosening/osteolysis, 51 (20%) for infection, 36 (14%) for instability, 20 (7.5%) for ARMD, 10 (4%) for peri-prosthetic fracture, and 16 (6%) for miscellaneous causes. 112 (44%) revision THAs were performed before 5 years (early), 65 (25%) revision THAs were performed between 5 to 10 years (mid-term), and 80 (31%) revision THAs were performed after 10 years (late). Increasing BMI adversely affected the mean time to revision THA. The mean survivorship of the primary implant at 5 years was 75% for a BMI of 18-25, 62% for a BMI of 25-30, 44% for a BMI of 30-35, 27% for a BMI of 35-40 and 25% for a BMI of over 40 ($P<0.001$). The mean survivorship of the primary implant at 15 years was 30%, 18%, 13%, 6% and 0%, respectively ($P<0.001$). There was a significant increase in early revision THA for aseptic loosening/osteolysis in obese patients ($P<0.001$).

Conclusions: Obesity poses a higher risk of early revision THA following primary THA due to aseptic loosening/osteolysis. Preoperative BMI influences the survivorship of patients undergoing revision THA.