Developmental Dysplasia of the Hip: An Independent Risk Factor for Adverse Outcomes Following Total Hip Arthroplasty

Roman Austin, Saad Tarabichi[1], David Deckey, Koorosh Kashanian[2], George A Grammatopoulos[3], Joshua Bingham
[1]Mayo Clinic Arizona, [2]University of Ottawa, [3]The Ottawa Hospital

INTRODUCTION:
Although several techniques for hip preservation have been described for the management of developmental dysplasia of the hip (DDH), it is well-established that definitive treatment option for patients with DDH often is a total hip arthroplasty (THA). Notwithstanding, there have been conflicting reports in the literature on whether DDH patients are at an increased risk of developing complications following THA. The purpose of this study was to determine whether DDH patients undergoing primary THA had comparable outcomes to patients undergoing surgery for osteoarthritis (OA).
METHODS:
All patients undergoing primary THA from 2010 to 2022 were identified using an insurance claims database (n=1,098,743). The 9th and 10th editions of the International Classification of Diseases were utilized to identify patients with a diagnosis code for either DDH or OA of the hip at the time of surgery. Patients with OA (n=30,071) were matched on a 1:1 basis to patients with DDH (n=30,071) using age, gender, body mass index (BMI), Elixhauser Comorbidity Index (ECI) and tobacco use. Outcomes of interest included 90-day medical complications, 90-day readmission rates, and 2-year surgical complications.
RESULTS:
There was no difference in age, sex, BMI, tobacco use, and ECI between the two groups ($p>0.05$). Patients in the DDH group were found to have higher rates of overall 90-day medical complications (4.21% vs. 2.02%, $p<0.00001$), re-admission (9.17% vs. 7.18%, $p<0.00001$), and re-operation (4.22% vs. 2.92%, $p<0.00001$). Regarding indications for revision surgery, DDH patients had higher rates of PJI (1.10% vs. 0.64%, $p<0.00001$), periprosthetic fracture (0.41% vs. 0.15%, $p<0.00001$), and aseptic loosening (0.7% vs. 0.3%, $p<0.00001$).
DISCUSSION AND CONCLUSION:
This study found that DDH patients undergoing primary THA had higher rates of 90-day medical complications, readmissions, and reoperations, when compared to matched OA patients. Future research is necessary to develop risk stratification protocols that are specific to DDH patients undergoing THA.