

True frequency and risk factors for hip dislocation within two years after primary total hip arthroplasty (THA) – a Danish nationwide population-based study

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Background: Hip dislocation is one of the leading indications for revision hip surgery and the term 'Revision due to dislocation' is often how this complication is measured. The true occurrence of hip dislocation can be difficult to establish as closed reductions may not be captured in available registers.

Purpose / Aim of Study: The purpose of this study was to identify the true frequency of hip dislocation after primary THA and secondary to find risk factors for dislocation.

Materials and Methods: From the Danish Hip Arthroplasty Registry, we extracted 31.762 primary THAs inserted from 2010-2014 due to osteoarthritis with two years follow-up. Dislocations were identified through extraction from the Danish National Patient Registry. Matching diagnosis and procedure codes were deemed correct while non-matching codes were reviewed through a comprehensive, nationwide review of patient files. Risk factors were analyzed by logistic regression adjusting for age, sex, co-morbidity (ASA-score), body mass index (BMI), head size, fixation and surgical approach. Results are presented as odds ratios (OR) with 95% confidence intervals.

Findings / Results: We identified 1890 dislocations in 1094 THAs which corresponds to a dislocation frequency of 3.4% (3.2-3.7) This is a 50% increase compared to the registry-captured frequency of 2.3% (2.1-2.5). Age<65 had lower risk (OR=0.71 (0.60-0.84)) and age>75 higher risk of dislocation (OR=1.32 (1.14- 1.53)) compared to age=65-74. ASA-score of 1 were associated with reduced risk (OR=0.69 (0.56-0.87)) and ASA-score of 3 with increased risk (OR=1.67 (1.35-2.06)) compared to ASA-2 Male gender (OR=0.85 (0.75-0.97)), cemented fixation (OR=0.70 (0.57-0.86)) and lateral approach (OR=0.30 (0.17-0.52)) were all associated with lower risk. Head size of 32mm (OR=1.26 (1.09- 1.45)) and 40mm (OR=1.56 (1.13-2.14)) had higher risk of dislocation than 36mm heads, while dual mobility cups had reduced risk (OR=0.13 (0.05-0.35)).

Conclusions: We report the true frequency of dislocations within two years after primary THA in Denmark between 2010-14 to be 3.4%, and while most literature report the risk factors for 'Revision due do dislocation', we are able to present several risk factors for all patients with hip dislocation and not only the revised.