Risk Factors for Instability after Total Hip Arthroplasty for Femoral Neck Fracture

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INTRODUCTION: Dislocation after total hip arthroplasty (THA) for femoral neck fracture (FNF) is one of the most common postoperative complications and leads to significantly poorer patient outcomes. The purpose of this study was to evaluate risk factors predisposing to dislocation following THA for FNF.

METHODS: Patients from nine academic medical centers who underwent a THA for FNF between 2010-2020 with at least one year of follow up were included in this retrospective review. Chi-square, Fisher's Exact, and t-tests were used to compare patient demographics and outcomes in those who had a dislocation following THA for FNF vs. those who did not. An adjusted logistic regression was also used to determine risk factors for dislocation.

RESULTS: Six-hundred-fifty patients met inclusion criteria and a total of 33 (5.1%) patients suffered at least one dislocation event. Both groups (dislocators vs. non-dislocators) were similar in terms of demographic variables. Dislocation rates were significantly higher in posterior-based (7.3%) than anterior and lateral-based (3.8%) approaches (p=0.05). Prosthetic joint infection (PJI) was significantly associated with instability with a 17.6% rate of instability in infected hips versus a 4.4% rate of dislocation in non-infected hips (p=0.0052). Intraoperative blood transfusion (p=0.0079), diabetes (p=0.0487), and liver disease (p=0.0567) were associated with an increased risk of dislocation. When adjusted for approach and sex, intraoperative blood transfusion continued to be significant [hazard ratio 3.10 (p=0.0043)].

DISCUSSION AND CONCLUSION:

We found an overall dislocation rate of 5.1% in a large cohort of FNFs who underwent THA with at least one year of follow up. Dislocation risk after THA for FNF was nearly doubled in patients who had a posterior-based approach. It was also higher in patients with an associated PJI, an intraoperative blood transfusion, diabetes, and liver disease.