Alarmingly High Rates of Deep Vein Thrombosis and Pulmonary Embolism Following Closed Reduction for Dislocated Total Hip Arthroplasty

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INTRODUCTION: Venous thromboembolism (VTE) and dislocation are well-described complications following total hip arthroplasty (THA). However, the relationship between THA dislocation and VTE remains unclear. This study sought to determine the risk of deep vein thrombosis (DVT) and pulmonary embolism (PE) in patients who experience a hip dislocation and subsequent closed reduction following primary THA.

METHODS: All primary THA patients were identified in the Premier Healthcare Database. THA patients who had a dislocation within 90 days of surgery treated with closed reduction were compared to patients who did not dislocate within 90 days of surgery. Differences in patient demographics, comorbidities, hospital characteristics, and postoperative chemoprophylactic agents were calculated between cohorts. Univariate and multivariable regression were used to assess the impact of THA dislocation treated with closed reduction on 90-day DVT and PE risk.

RESULTS: 550,208 primary THAs were identified. Of these patients, 3,700 (0.68%) experienced a dislocation within 90 days, of which 2,487 (67.22%) were treated with closed reduction. Patients who dislocated and underwent closed reduction had increased rates of DVT (0.92% vs. 0.30%, P<0.001) and PE (1.61% vs. 0.51%, P<0.001) compared to patients who did not dislocate. After controlling for confounding factors, patients in the closed reduction group had elevated risks of both DVT (adjusted odds ratio [aOR] 2.74, 95%-confidence interval [CI]: 1.99-3.77, P<0.001) and PE (aOR 2.52, 95%-CI: 1.66-3.83, P< 0.001).

DISCUSSION AND CONCLUSION: Patients who undergo closed reduction for dislocation following primary THA have an alarmingly high risk of DVT and PE. These findings should prompt surgeons to consider chemoprophylaxis among patients who experience a dislocation, even when treated with a closed reduction.