Risk Factors for Prosthetic Joint Infections following Total Hip Arthroplasty for Femoral Neck Fracture

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INTRODUCTION: Prosthetic joint infection (PJI) after hip arthroplasty (HA) for femoral neck fracture (FNF) is one of the most common postoperative complications. The purpose of this study was to evaluate patient demographics and perioperative risk factors predisposing to PJI following HA for FNF.

METHODS: Patients from nine academic medical centers who underwent HA 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 risk factors and outcomes between patients who had a PJI following HA vs those who did not.

RESULTS: Six hundred and fifty patients met inclusion criteria and a total of 43 (3.4%) patients suffered a PJI. PJI rates increased as expected with several different medical comorbidities including worsening American Society of Anesthesiologists (ASA) score (p=0.0133), diabetes mellitus (DM) (p=0.0218), hypertension (HTN) (p=0.0095), liver disease (p=0.0177), and chronic obstructive pulmonary disease (COPD) (p=0.0372). Perioperative factors that increased PJI risk were intraoperative blood transfusion (p=0.0018), hemovac drain use (p=0.0296), general anesthesia (p=0.0375), postoperative pulmonary embolus (PE) (p=0.0248), and discharge to a skilled nursing facility (SNF) (p=.0003). When adjusted for sex, ASA, DM, and liver disease, all other perioperative risk factors became insignificant aside from discharge to a SNF (p=0.0188).

DISCUSSION AND CONCLUSION: We found an overall PJI rate of 3.4% in a large cohort of FNFs who underwent HA with at least one year of follow-up. PJI is associated with worsening ASA score, DM, HTN, liver disease, COPD, intraoperative blood transfusion, hemovac drain use, general anesthesia, postoperative PE, and discharge to a SNF. When adjusted for sex, ASA, DM, and liver disease, discharge to a SNF remains a significant risk factor and should be avoided to decrease PJI risk.