Metabolic Syndrome Increases Risk of Readmission and Complications in Operative Fixation of Pilon Fractures: Results from the ACS-NSQIP Database

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INTRODUCTION:

Studies demonstrate that metabolic syndrome (MetS) negatively impacts surgical outcomes. Pilon fractures are complex fractures fraught with a higher risk of perioperative complications. It is critical to properly risk-stratify MetS patients with pilon fracture to improve orthopaedic outcomes and promote value-based care. This study sought to identify risk factors for adverse outcomes after pilon open reduction internal fixation (ORIF) for MetS patients.

METHODS:

Patients who underwent ORIF for pilon fractures from 2012 to 2019 were identified in the American College of Surgeons National Surgical Quality Improvement Program database. MetS patients were compared to non-MetS patients for rates of adverse events, prolonged stay, and readmission in the 30-day postoperative period. All statistical analyses were conducted using SPSS. Paired student t-tests were used to assess continuous variables. Pearson's Chi-square and odds ratios were used for categorical variables.

RESULTS:

A total of 1,915 patients met this study's inclusion criteria, and 127 MetS patients were identified in the cohort. The MetS cohort was older (62.7 vs. 42.5 yo, p-value <0.01), with a greater proportion of female patients (59.1% vs. 50.2%, p=0.054). MetS patients experienced significantly higher rates of infectious complications (7.9% vs. 3.9% OR 2.75 (CI 1.36-5.53), p=0.008) major adverse events (11% vs. 4.3%, OR 2.79 (CI 1.53-5.09) p=0.002), and readmissions. MetS patients also had longer lengths of stay (7 days vs. 3.8 days, p-value<0.001), and were more likely to be discharged to a non-home location (51.2% vs. 19.5%, p-value<0.01, OR 4.32 (CI=3.0-6.24) p<0.001).

DISCUSSION AND CONCLUSION:

MetS patients have an increased risk of 30-day major complications, infection, and readmissions and therefore warrant additional consideration for perioperative monitoring. As value-based healthcare connects reimbursements to outcomes, policies must incentivize surgeons caring for a disproportionate number of MetS fracture patients through appropriate adjustments to quality metrics.