Periprosthetic Proximal Femur Fractures and Primary Elective Total Hip Patients Are Not the Same: A Comparison Study

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Purpose: The incidence of periprosthetic proximal femur fractures (PPFFs) is increasing as the number of elective total hip arthroplasties (THAs) increases. The current bundled payment system's CPT coding and Medicare Severity Diagnosis Related Groups (MS-DRGs) place greater financial reimbursement value on THA. Currently, the comorbidity burden at presentation, cost of care, and length of stay (LOS) between THA and PPFF is unknown. We compare comorbidity burden, LOS, postoperative mortality, and cost of care between THA and PPFF. The authors hypothesize that PPFF patients present with greater comorbidity burden, LOS, cost of care, and mortality.

Methods: All adult patients between 2016 and 2022 from a single, multicenter health-care system undergoing PPFF or THA were reviewed retrospectively. Patient demographics and clinical characteristics were collected. The primary outcomes compared were LOS, direct cost of care, modified Charlson Comorbidity Index (CCI), and inpatient postoperative mortality. Univariate analysis and multivariate regressions were performed to compare the 2 groups.

Results: Of the 9181 patients included, 4.6% (n = 420) underwent PPFF fixation and 95.4% (n = 8761) THA. The mean age for PPFF and THA patients was 80.2 ± 8.5 and 74.7 ± 6.6 years, respectively. There were more females in the PPFF group (69.3%) compared to THA group (60.8%). Univariate analysis demonstrated increased LOS (median: 4.3 vs 1.3, P<0.0001), direct cost (median: $12,320 vs $8,221, P<0.0001), CCI (median: 3 vs 2, P<0.0001), and postoperative mortality (2.1% vs 0.13%, P<0.001) in PPFF. Multivariate analysis, after controlling for age, gender, race and CCI, showed that PPFF had higher LOS (β coefficient: 2.5, 95% confidence interval [CI]: 2.3-2.7, P<0.001), direct cost (β coefficient: 3,583.3, 95% CI: 3118.2 -4,048.5, P<0.001) and postoperative mortality (odds ratio [OR]: 6.6, 95% CI: 2.5-17.9).

Conclusion: PPFF patients present with higher comorbidity burdens, and experience greater LOS, cost of care, and postoperative mortality than THA patients. In the current health-care pay for quality performance and bundled payments, data presented here support a needed revision of financial reimbursement allocated for PPFF patient care.