

Total Hip Arthroplasty vs. Hemiarthroplasty for Pathologic Proximal Femur Fractures: Which Offers Better Value?

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INTRODUCTION: Significant advancements in cancer treatments and therapeutics have resulted in individuals living longer with malignant neoplasms. Thus, it is of no surprise that the prevalence of metastatic disease is increasing. Although cancers metastasize to multiple organs/locations, the proximal femur remains a common site for metastatic bone disease. Given the precarious location of proximal femur metastases, these patients are prone to experience pathologic fractures that require urgent surgical management. Although current evidence supports use of endoprosthesis reconstructions/replacements for surgically managing these fractures, controversy remains as to whether total hip arthroplasty (THA) offers a better outcome, as compared to the conventional hemiarthroplasty (HA), particularly in elderly patients. Given the increasing utilization of THAs for management of native proximal femur fractures, there is a need for evidence that investigates differences in complication rates (both medical and surgical) between these two different treatment modalities.

METHODS: The 2005 to 2013 Medicare Standard Analytical Files (SAF100) was queried using International Classification of Diseases 9th Edition procedural and diagnosis codes to identify patients undergoing THA or HA for pathologic proximal femur fractures. Multivariate logistic regression analyses were used to compare for differences in 90-day medical and surgical complications. Multivariate Cox-proportional hazard analyses were used to assess whether patients undergoing HA (as compared to THA) had better event-free survival (with regards to dislocations and revision surgery).

RESULTS: A total of 7,022 pathological proximal femur fractures were included – out of which 5,605 (79.8%) were treated with HA, and 1,449 (20.6%) were treated with THA. Patients undergoing HA (vs. THA) were significantly less likely to experience 90-day wound complications (2.8% vs. 4.1%, OR 0.72 [95% CI 0.53-0.99]; p=0.040) and blood transfusions (43.7% vs. 27.8%, OR 0.81 [95% CI 0.72-0.91]; p<0.001), but had higher odds of getting pneumonia (15.2% vs. 11.2%, OR 1.32 [95% CI 1.10-1.59]; p=0.003). Cox-proportional analyses showed that HAs were associated with lower odds of dislocations (HR 0.42 [95% CI 0.29-0.63]; p<0.001), and revision surgery (HR 0.43 [95% CI 0.29-0.66]; p<0.001). On average, 90-day reimbursements associated with THA was \$26,872, whereas that of a HA was \$26,244, with no significant difference in risk-adjusted payments (-\$74; p=0.897).

DISCUSSION AND CONCLUSION:

Based on our findings, it appears that undergoing a hemiarthroplasty was associated with slightly better medical and surgical outcomes. Interestingly, we were unable to establish a significant difference in overall reimbursements between THAs and HAs, likely due to largely similar pricing of inpatient episodes of care by Medicare for THAs and HAs. Further study, that assesses differences in functional outcomes, between THAs and HAs is warranted to better delineate which procedure would provide the most value when choosing surgical options for managing pathologic proximal femur fractures.