Does Time to Surgical Fixation Matter in Pathologic Proximal Femur Fractures?

Azeem Tariq Malik, John H Alexander, Joel L Mayerson[1], Thomas J Scharschmidt
[1]The Ohio State University

INTRODUCTION:

Although current national and international evidence appears to suggest that a total time to operative fixation of less than 48 hours is associated with improved outcomes in patients with native/traumatic hip fractures, little is known whether the same stands true for patients presenting with suspected pathologic proximal femur fracture. Cancer patients, particularly, those with suspected pathologic fractures secondary to metastatic disease often require a complete work-up prior to surgery. Furthermore, pathologic proximal femur fractures may also be the first presentation for patients with unknown primaries, which warrant additional tests and scans to identify the primary cancer type to guide treatment paradigms and operative plan.

METHODS:

The 2016 to 2019 American College of Surgeons – Hip Fracture Targeted National Dataset was utilized for this study. The Hip Fracture Targeted Dataset was preferred over other datasets, such as the NSQIP and insurance claims, due to its uniqueness in recording the time to surgery. The Targeted Dataset also allows accurate identification of pathologic fractures from cancers/primary tumors, as it uses patient follow-up records and/or biopsy results to identify type of hip fracture. This method is superior to using ICD codes to identify pathologic fractures, as often times, osteoporotic fractures are also coded as pathologic fractures. Time to operative fixation was divided into 0-48 hours and >48 hours. Multi-variate logistic regression analyses was used to analyze if time to operative fixation is associated with a difference in rates of 30-day medical/surgical complications, reoperations, readmissions, and mortality.

RESULTS:

A total of 959 patients with pathologic fractures of the proximal femur were included in the study. Around 75% (N=723 patients) received surgery (intramedullary nail, hemiarthroplasty, and dynamic hip screw) within 48 hours, whereas 25% (N=236) received surgery after 48 hours. Following multi-variate analysis, undergoing surgery >48 hours after admission (vs. within 48 hours) was not associated with a difference in the rates of wound complications (OR 0.21 [95% CI 0.03-1.64]; p=0.137), pulmonary complications (OR 1.16 [95% CI 0.53-2.51]; p=0.715), renal complications (OR 0.06 [95% CI 0.001-3.63]; p=0.178), thromboembolic complications (OR 1.40 [95% CI 0.49-2.26]; p=0.903), cardiac complications (OR 1.68 [95% CI 0.44-6.51]; p=0.451), septic complications (OR 0.61 [95% CI 0.16-2.31]; p=0.470), bleeding requiring transfusions (OR 1.02 [95% CI 0.68-1.53]; p=0.921), urinary tract infections (OR 0.91 [95% CI 0.30-2.72]; p=0.859), unplanned readmissions (OR 0.88 [95% CI 0.52-1.50]; p=0.644], unplanned reoperations (OR 0.61 [95% CI 0.21-1.75]; p=0.359), and death (OR 0.89 [0.47-1.70]; p=0.731).

DISCUSSION AND CONCLUSION:

Based on review of national hip fracture data, a delay in time to operative fixation of pathologic proximal femur fractures does not seem to influence 30-day outcomes. These findings are reassuring, as it allows providers to promote the importance of complete cancer work-up and/or medical optimization prior to operating on these vulnerable patients.