

Increased Risk of Postoperative Periprosthetic Femur Fracture with Uncemented Versus Cemented Hemiarthroplasty: A Nationwide Database Study of 24,468 Femoral Neck Fractures

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Purpose: Femoral component fixation in hemiarthroplasty (HA) is achieved with cemented or uncemented fixation. Postoperative periprosthetic femur fracture (PPFx) substantially increases morbidity, mortality, and cost. Previous investigations suggesting uncemented fixation as a risk for PPFx were limited in their generalizability. We aimed to evaluate the risk of postoperative PPFx based on stem fixation with review of a robust national administrative claims database.

PAPER ABSTRACTS

Methods: A retrospective review using the Medicare Standard Analytical Files from the PearlDiver database was performed for patients receiving HA for treatment of femoral neck fracture (FNF). We identified postoperative PPFx as our primary outcome and stratified femoral fixation as cemented or uncemented. Demographic data were collected: age, sex, obesity, and Charlson Comorbidity Index (CCI). Propensity matched analysis with odds ratios (ORs) was performed to evaluate association between fixation and risk of postoperative PPFx; multivariate analysis was used to adjust for demographic characteristics and comorbidities.

Results: We identified 24,468 patients with HA as treatment of FNF from 2015 to 2020. The mean age was 77 years (standard deviation [SD] 6.14), 66.9% were female, mean CCI was 3.54 (SD 3.17), and 16% carried a diagnosis of obesity. 12,777 (52.2%) received cemented femoral fixation and 11,691 (47.8%) uncemented. We identified a total of 660 (2.7%) postoperative PPFxs. Uncemented fixation was associated with an increased risk of postoperative PPFx (OR 3.32 [95% confidence interval (CI), 2.75-4.00]; $P < 0.001$). Females with uncemented fixation had a higher risk for postoperative PPFx (OR 3.70 [95% CI, 2.94-4.76]; $P < 0.001$).

Conclusion: We noted an increased risk of postoperative PPFxs with uncemented femoral fixation for HA to treat FNF, particularly in females. The risk of postoperative PPFx should be considered as surgeons choose femoral fixation for HA in the treatment of FNFs.

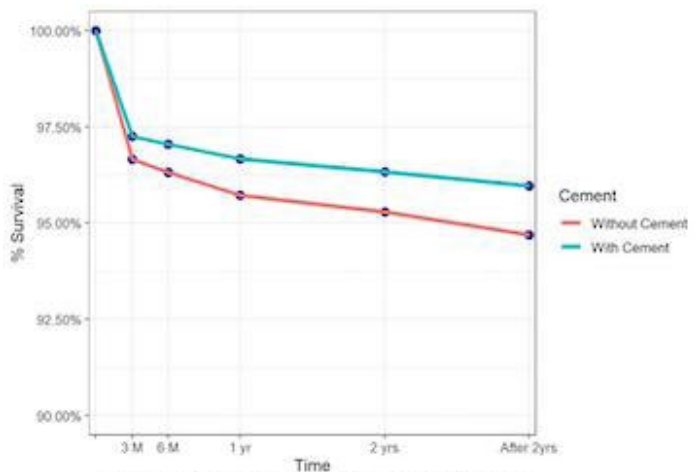


Fig 1. % of patients without post-operative periprosthetic fracture

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