Femoral Neck Fractures in Dialysis Patients: Is Fracture Fixation Justified?
Jason Lipof, MD; Alexander Greenstein, MD; Michelle Lawson, BS; Gillian Soles, MD; John Ketz, MD; Catherine Humphrey, MD; Kyle Judd, MD, MS; John Gorczyca, MD

Purpose: Hemodialysis (HD) patients have a high risk of femoral neck fracture (FNF), and the morbidity and mortality are high. The role for internal fixation (IF) in HD patients with FNF is not well-defined. We hypothesize that IF for nondisplaced FNF will have a higher reoperation rate but a lower complication rate than hemiarthroplasty (Hemi) for displaced FNF.

Methods: Between January 2008 and October 2017, 59 HD patients with FNF (AO/OTA 31B-1 + 2) were identified by CPT codes (27235 + 27536) (15 IF, 44 Hemi). Charts were reviewed for age, sex, comorbidities, vitamin D, Ca++, albumin, TSH (thyroid-stimulating hormone), PTH (parathyroid hormone), fracture type, procedure(s), ASA (American Society of Anesthesiologists) class, follow-up, and mortality. We used log rank test, Fisher’s exact test, and Cox regression analysis.

Results: The 1-year mortality was 13% with IF and 36% with Hemi (P <0.035). The complication rate (infection, periprosthetic fracture, mal/nonunion, reoperation) was 27% with IF and 9% with Hemi (P = 0.19). Medical comorbidities were associated with neither complication rate nor mortality. In both groups, higher albumin level had a lower risk of mortality (hazard ratio [HR] = 0.135 [0.04, 0.456], P = 0.001) while higher ASA class had a higher risk of mortality (HR = 6.402 [1.030, 39.811], P = 0.046).

Conclusion: HD patients with FNF have an alarming rate of mortality and complications that appear to be related more to the end-stage renal disease requiring HD than to any other medical comorbidity. IF patients have a lower mortality rate but a higher complication rate compared to HD patients. Lower albumin level and higher ASA were associated with higher mortality. This study questions the benefit of internal fixation of nondisplaced femoral neck fractures in hemodialysis patients.