Two-Year Revision Risk for Femoral Neck System Versus Cannulated Screws for Femoral Neck Fractures

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Purpose: Our objective was to compare revision risk between the femoral neck system (FNS) and cannulated screws for surgical fixation of femoral neck fractures in a multicenter US health-care system.

Methods: A cohort study was conducted using data from a US health-care system's hip fracture registry. Patients aged ≥60 years who underwent surgical fixation for femoral neck fractures were identified (2017-2022). Study groups restricted to fixation using either FNS or three 6.5 to 7.3-mm cannulated screws. All-cause revision risk was evaluated through multivariable Cox regression with confounder adjustment.

Results: The final study included 352 FNS and 1686 cannulated screws. Procedures were performed by 346 surgeons at 32 hospitals. Crude 2-year revision incidence was 4.0% and 4.8% for FNS and cannulated screws, respectively (Figure). In adjusted analysis, no difference in all-cause revision risk (hazard ratio [HR] = 0.92, 95% confidence interval [CI] = 0.50-1.71, P = 0.79) was observed when comparing FNS to cannulated screws. Comparable results were observed when restricting only to fixations performed by surgeons who used both devices (270 FNS vs 430 cannulated screws, 72 surgeons; HR = 0.91, 95% CI = 0.39-2.17, P = 0.84).

Conclusion: In the cohort of elderly patients who underwent femoral neck fracture fixation, we found the more technically advanced and costly FNS had comparable revision rates to cannulated screws. This persisted even when focusing on surgeons proficient in both implants.