Nationwide Analysis of Femoral Neck Fractures in Elderly Patients: A Receding Tide

***Derek Ju, MD**; Sean Rajaee; Carol Alice Lin, MD; Charles N. Moon*
Cedars-Sinai Medical Center, Los Angeles, California, USA

Purpose: Geriatric femoral neck fractures are associated with significant morbidity and medical cost. We evaluated incidence and management trends of femoral neck fractures over the past decade in the United States.

Methods: Patient data from 2003 through 2013 were obtained from the Nationwide Inpatient Sample database. Femoral neck fractures in patients ≥65 years of age were identified and grouped using ICD-9 procedure codes of internal fixation, hemiarthroplasty, or total hip arthroplasty. The nationwide incidence of femoral neck fractures was calculated and presented as an age-adjusted population rate. Bivariate methods were used for trend analysis and comparisons between groups. Logistic regression modeling was used to identify complications.

Results: From 2003 to 2013, we identified 808,941 femoral neck fractures in patients 65 years and older. The national age-adjusted incidence of femoral neck fractures decreased from 242 per 100,000 US adults in 2003 to 146 in 2013. The proportion of fractures managed operatively with total hip arthroplasty (THA) increased over time (5.9% in 2003 vs 7.4% in 2013, P <0.001). Concurrently, the use of hemiarthroplasty (HA) declined (65.1% vs 63.6%, P <0.001). In 2013, the median age of patients treated with THA was significantly younger (77.3 years) compared to HA and open reduction and internal fixation (ORIF) (83.2 and 82.0). The THA group had significantly higher median initial hospital costs ($18,265) compared to the HA and ORIF groups ($15,786 and $11,177). THA utilization rates were higher in urban teaching hospitals (8.2% vs 6.9%) and large hospitals (7.6% vs 7.1%). In the multivariable logistic regression model, transfusions were more likely to occur in THA patients compared to HA (odds ratio [OR] 1.4, 95% confidence interval [CI] 1.2-1.6, P = 0.001) and ORIF (OR 3.2, 95% CI 2.7-3.9, P <0.001).

Conclusion: In the last decade, the total number and population rate of femoral neck fractures in the elderly declined significantly. There was a modest but significant increase in the utilization of THA. THA is associated with significantly higher initial hospital costs and incidence of transfusions when compared to ORIF and HA.