

Geriatric Hip Fracture With Proximal Upper Extremity Fracture Increases Morbidity, Mortality, and Cost

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Purpose: Hip fracture incidence continues to increase globally. Approximately 5% of patients with hip fractures have a concomitant upper extremity fracture, and patients with both upper extremity and hip fractures may experience significantly greater risk of complications and poor outcomes. This study aims to investigate the differences in medical, surgical, and hospital-related outcomes within 30 days between patients with a hip fracture with and without concomitant upper extremity fracture, with further subgroup analysis based on fracture location.

Methods: This retrospective cohort study assessed the impact of concomitant upper extremity fractures on 30-day outcomes in the setting of a hip fracture by querying a national database. ICD-10 codes were used to identify geriatric patients with hip fracture with and without a concomitant upper extremity fracture. Patients were subclassified as having a shoulder girdle, humerus, forearm, or hand fracture. Demographics, complications, cost, and in-house mortality were recorded. Validated logistic and linear regression models were used to determine significance.

Results: In total, 367,007 patients sustained a hip fracture, and 19,852 had a concomitant upper extremity fracture. Aggregate data for hip fracture with any upper extremity fracture had an increased risk of mortality, length of stay, cost, and medical and surgical complication ($p < 0.001$). There was a 41% increase in mortality across all upper extremity fractures, a 77% to 83% increased chance of in-hospital mortality with a concomitant proximal upper extremity fracture (humerus and shoulder), and no significant change in mortality in the forearm and hand subgroup ($p < 0.001$). Concomitant shoulder and humerus fractures had an increased risk of all-cause medical complication ($p < 0.001$). Concomitant humerus and forearm fractures had an increased risk of all-cause surgical complication ($p = 0.003$).

Conclusion: There is increased risk of mortality, complications, and cost of geriatric hip fractures with concomitant upper extremity fracture. These effects are most pronounced in proximal—versus more distal—upper extremity fractures. Surgeons should be aware of these increased risks for prognostic purposes, and, with future research, may consider surgical intervention of the concomitant proximal upper extremity injury aimed at producing a functional and weightbearing upper extremity to help optimize postoperative recovery.