

Management and Outcomes of Periprosthetic Fractures of the Femur

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Purpose: Increasing age and numbers of primary and revision arthroplasties lead to an increase in periprosthetic fractures. Based on type and site of fracture, implant status and comorbidities various surgical strategies are available. Complex surgery and comorbidities increase morbidity and mortality associated with these injuries. Aim was to assess management, mortality rates, complications, and outcomes of periprosthetic femoral fractures.

Methods: January 2010 to June 2015, from a prospective database periprosthetic femoral fractures were identified. Patients with early fracture after revision joint replacements, previously known infected joint were excluded. Data collected included patient demographics, comorbidities, mechanism of injury, American Society of Anesthesiologists (ASA) grade, type and site of fracture, time to surgery, surgical management, postoperative rehabilitation, early complications, unplanned further surgeries, implant and patient survival. Kaplan-Meier survival analysis was performed to assess mortality rates.

Results: 109 periprosthetic femoral fractures in 108 patients during the study period. Mean age was 79 years (21-96) male to female ratio 31:77. There were fractures around hip hemiarthroplasty (12), cemented total hip replacement (THR) (36), uncemented THR (21), total knee replacement (TKR) (26), and interprosthetic femoral fractures (14). Most patients were ASA grade 3 (82 of 108). All except 1 fracture was from standing height falls. 14 were on warfarin. 8 on clopidogrel. Mean time to surgery was 3 days (1-12). Follow-up period was a mean of 2 years. Complications included 1 death on table, 4 wound hematomas that were washed out, 3 deep infections that were managed with debridement and implant retention with suppressive antibiotics as patients were not suitable for 2-stage or prolonged single-stage revision surgeries. Three plate fixations for B1 fractures around a THR failed. Of the 86 patients who went to rehabilitation unit, 38 went to assisted-living facility. Majority of the patients (79) used a walking aid in the long term. Mortality rate was 36/109. Deaths within 3 months (early deaths) were 12 (11%), within a year 29 deaths (27%). Late deaths were natural deaths or due to unrelated events.

Conclusion: Incidence of early periprosthetic fractures is higher in uncemented THR while cemented THRs have a higher incidence of late fractures. Periprosthetic femoral fractures occur in patients who often have significant medical comorbidities. Surgical intervention in general has a good outcome, but most of the patients spend time in a rehabilitation unit and do not reach their prefracture mobility status. One-year mortality is 27% in these patients.