

Impact of Dedicated Hip Fracture Service for Intertrochanteric Fracture Fixation Outcomes

Arielle Richey Levine, Trevan Kyle Klug, Michael Patrick Leslie

INTRODUCTION:

Hip fractures represent a significant cause of morbidity and mortality among the geriatric population with research indicating a 1-year mortality of 15-30% and a in-hospital mortality of 5-10%. Hip fracture care also contributes to healthcare resource use and cost, and this is only expected to continue to grow as a larger proportion of the United States population enter the over-65 age category. Accordingly, research aimed at determining the resources that will improve outcomes for patients represents a key component of continuing to improve hip fracture care for geriatric patients.

METHODS:

Retrospective review of all intertrochanteric hip fractures admitted to a single center from 2014 – 2023 was conducted. Variables collected included basic patient and operative characteristics, medical comorbidities, radiographic and clinical outcomes, discharge disposition data, as well as mortality data based on medical record review and obituary searches conducted for all patients included in the database.

RESULTS:

The dedicated hip fracture service showed a decreased hospitalization mortality rate compared to previously reported national data. Time to the surgery, post-discharge mortality data, rates of re-operation, rates of orthopaedic complications and medical complications were also lower than previously reported national data for a population that mimics previously reported demographic characteristics and comorbidity profiles (Table 1).

DISCUSSION AND CONCLUSION:

The development of a dedicated hip fracture service represents a significant area for development and innovation within the United States as a larger proportion of the population enters the demographic with peak risk factors for fragility hip fractures. The implementation of these dedicated services—based on collaborations between orthopaedic surgeons, anesthesiologists, geriatricians, cardiology and hospital administration—has the potential to improve outcomes for patients and augment value-based medical care.

Patient Characteristics (n = 2128)				
Gender	Female: 1572 (73.9%)		Male: 556 (26.1%)	
Age	Average: 83.8 years		Standard Deviation (SD): 8.5 years	
Body Mass Index	Average: 24.8 kg/m ²		SD: 5.6 kg/m ²	
Hypertension	Yes: 1755 (82.5%)	No: 372 (17.5%)	N/A: 1 (0.05%)	
Dyslipidemia	Yes: 719 (33.8%)	No: 1408 (66.2%)	N/A: 1 (0.05%)	
Coronary Artery Disease	Yes: 573 (26.9%)	No: 1554 (73.0%)	N/A: 1 (0.05%)	
Congestive Heart Failure	Yes: 450 (21.2%)	No: 1677 (78.8%)	N/A: 1 (0.05%)	
Aortic Stenosis	Yes: 215 (10.1%)	No: 1912 (89.9%)	N/A: 1 (0.05%)	
Chronic Obstructive Pulmonary Disease	Yes: 415 (19.5%)	No: 1712 (80.5%)	N/A: 1 (0.05%)	
Diabetes	Yes: 530 (24.9%)	No: 1597 (75.1%)	N/A: 1 (0.05%)	
Renal Disease	Yes: 449 (21.1%)	No: 1678 (78.9%)	N/A: 1 (0.05%)	
Stroke	Yes: 273 (12.8%)	No: 1854 (87.2%)	N/A: 1 (0.05%)	
Dementia	Yes: 601 (28.2%)	No: 1527 (71.8%)	N/A: 1 (0.05%)	
Depression/Anxiety	Yes: 936 (44.0%)	No: 1191 (56.0%)	N/A: 1 (0.05%)	
History of Cancer	None: 1398 (65.3%)	In Remission: 545 (25.6%)	Active Malignancy: 122 (5.7%)	Prior & Current Malignancy: 62 (2.9%)
Prior Osteoporosis or Osteopenia	None: 1035 (48.6%)	Osteopenia: 483 (22.7%)	Osteoporosis: 610 (28.7%)	N/A: 1 (0.05%)
ASA Status	1: 6 (0.3%)	2: 380 (17.9%)	3: 1488 (69.9%)	4: 252 (11.8%)
Days to Surgery	Average: 1.6 days		SD: 3.7 days	
Surgery Rescheduled?	No: 1830 (86.0%)		Yes: 298 (14.0%)	
Reoperation?	No: 2016 (94.7%)		Yes: 112 (5.3%)	
Complications	No Complications: 1394 (65.3%)	Orthopaedic Complications*: 168 (7.9%)	Medical Complications**: 161 (7.6%)	N/A: 87 (4.1%)
Mortality Data	Hospitalization: 41 (1.9%)	≤7-day: 40 (1.9%)	8-30-day: 90 (4.2%)	31-365 day: 380 (17.9%)
Survival Time	Average Survival Time for Deceased Patients: 671 days (SD: 691.3)			

* Orthopaedic Complications include: Nonunions, Malunions, Avascular Necrosis, Hardware Failure (Cut-Out, Cut-Through, Backouts), Infections, Periprosthetic Fractures, Post-surgical Hematomas, Dislocations

** Medical Complications include: Pulmonary Emboli, Deep Vein Thrombosis, Stroke, Cardiac Events, Disseminated Intravascular Coagulation, etc.

*** Complications were not necessarily mutually exclusive—i.e., patients with an orthopaedic could also have been included as having a medical complication and visa-versa