

Effect of wound status and weight bearing on peri-operative mortality in Fracture Neck of Femur in elderly patients [60 years and above]

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Abstract

Background: Hip fractures in elderly patients are serious injuries that can lead to immobility and permanent dependence, negatively impacting patients’ quality of life and resulting in a financial burden for health systems and societies. Hip fractures can also lead to death.

Methods: The present study was conducted in patients with fractures neck of femur (age 60 years and above) presenting to the Department of Orthopaedics, Dr RPGMC Kangra at Tanda. All cases presenting to the department and fulfilling the criteria were studied for a period of one year starting from the date of start of the study.

Results: Wound status was healthy in 25% of 4 died patients and 98.8% of survived patients. Wound status was significantly worse in died patients’ groups at 15 day (P=0.007)

Weight bearing was comparable between both groups at 15 days (P=0.038)

Conclusion: Perioperative mortality was affected by wound status at day 15.

Keywords: Mortality, Hip, Fracture, Singh’s Index

Introduction

Fractures of the femoral neck are a devastating injury that extends far beyond the musculoskeletal trauma, with significant long-term consequences for the quality of life of both patients and careers. The fractures are common in the elderly. Patient care is complex, requiring multidisciplinary teams and integrated care pathways. Patients above the age of 90 represent a challenging subgroup as they have a number of concurrent medical comorbidities, and are susceptible to postoperative complications and poorer outcomes.

Factors that influence prognosis of elderly patients after hip fracture are age, gender, comorbidities, anticoagulation therapy, and general physical health status at the time of injury.⁵ Furthermore, timing of surgery is thought to play an important role regarding survival. Although international clinical practice guidelines recommend surgical treatment of acute hip fracture within 24 to 48 hours after admission, these recommendations are still discussed controversially.^{6,7} Some researchers argue that early surgery can lead to an increased risk of perioperative complications, including pneumonia, deep venous thrombosis, bleeding, pulmonary embolism, urinary tract infections, and decubital ulcerations because clinicians do not have enough time to optimize patients' medical conditions preoperatively.⁸

Material And Method

The present study was conducted in patients with fractures neck of femur (age 60 years and above) presenting to the Department of Orthopaedics, Dr RPGMC Kangra at Tanda.

All cases presenting to the department and fulfilling the criteria were studied for a period of one year starting from the date of start of the study. The study was initiated following approval from Institutional Ethics Committee. The patients were given the right to abstain from participation in the study or to withdraw at any time of the study without reprisal.

Inclusion criteria

All patients of fractures neck of femur 60 years and above.

Exclusion criteria

1. concomitant trauma involving other systems
2. associated fracture of the pelvis
3. bilateral hip fracture

4. pathological fracture
5. did not give consent to participate in the study

After a detailed history, patients were clinically evaluated at the time of admission. Demographic data of the patients such as age, sex, pre-existing co-morbidities, type of fracture, degree of osteoporosis and type of surgical procedure were recorded.

Statistical analysis

The data were presented as frequency, percentages or mean±SD whereas applicable. Student t-test was used to compare continuous variables between 2 groups. Chi-square test was used to compare categorical variables. P value <0.05 was considered significant. Statistical analysis was performed using SPSS v21.

Results

The present study was aimed to determine peri-operative mortality in fractures of neck of femur in the elderly patients presenting to the Department of Orthopaedics at Dr RPGMC Tanda over the period of one year. A total of 90 patients were included in the study. Results of the study have been described below:

A total of 90 patients with fracture neck of femur were included in the study over a period of one year.

Table 1 given below summarizes the wound status. We observed that wound status was healthy for 98% (n=86/88) patients on day-15.

Table 1: Wound Status (DAY-15) (N=90)

Wound Status	n	%
Healthy	86	98
Discharge Present	2	2

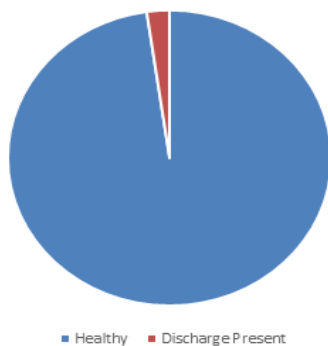


Figure 1: Wound Status (DAY-15) (N=88).

Table 2 given below summarizes wound status between different groups. Our study observed that 33% (n=1) patients in group A had discharge in wound at day-15 while 33% (n=2) patients in group B had discharge in wound at day-15. Our study also observed that wound status at day-15 were statistically significant between the groups (P=0.007).

Table 2: Comparison of Wound Status between Different Groups of Patients (N=90)

Wound status at 15 Days	Group A (n=5)	Group B (n=6)	Group C (n=79)	P Value
Healthy	2	4	77	0.007
Discharge present	1	2	1	

Two patients died on within 15 days after surgery

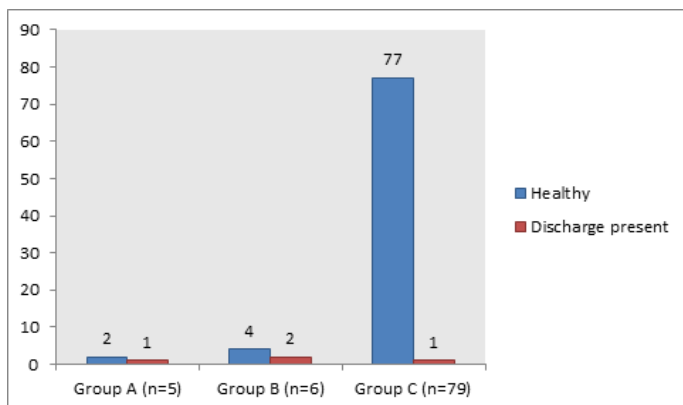


Figure 2: Comparison of Wound Status between Different Groups of Patients (N=90)

Weight Bearing

Table 3 given below summarizes the weight bearing at different time points. We observed that 17% (n=15/90) patients were not walking on day-15, 7% (n=9/90) on day-30, 10% (n=9/90) on day-45, and 6% (n=6/90) on day-90 (table 2 and figure 3).

Table 3: Weight Bearing At Different Time Points (N=90)

	Not Walking	NWB with Walker	Touch Toe Walking	Partial Weight Bearing
Day-15	15	53	20	-
Day-30	6	-	81	-
Day-45	4	31	50	-
Day-90	2	-	-	83

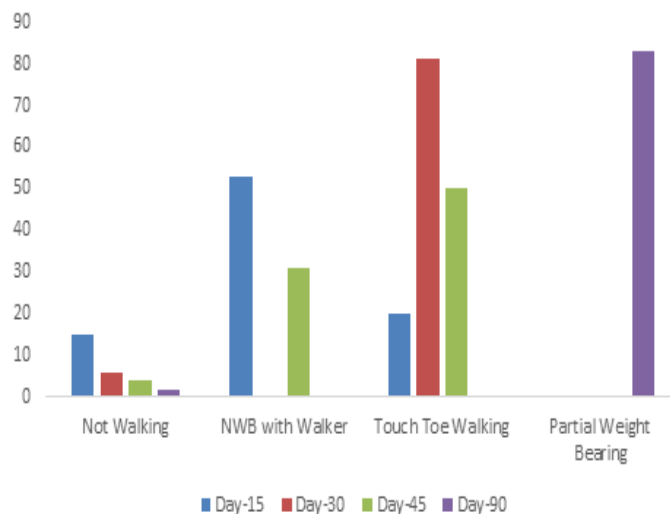


Figure 3: Weight Bearing At Different Time Points (N=90).

Weight bearing was found to be statistically non-significant at day-15 (P=0.830). At day-30, one patient in group A, and 4 patients each in group B and C were not able to walk while none of the patients also had full weight bearing. Weight bearing was found to be

statistically non-significant at day-30 ($P=0.324$). At day-90, 2 patients each in group A and C while 3 patients in group B had full weight bearing. Weight bearing was found to be statistically non-significant at day-90 ($P=0.077$).

Wound status was healthy in 25% of 4 died patients and 98.8% of survived patients. Wound status was significantly worse in died patients' groups at 15 day ($P=0.007$)

Weight bearing was comparable between both groups at 15 day ($P=0.038$)

Discussion

The present study was aimed to determine peri-operative mortality in fractures of neck of femur in the patients (age 60 years and above) presenting to the Department of Orthopaedics, Dr RPGMC Kangra at Tanda.

All cases presenting to the department and fulfilling the criteria were studied for a period of one year starting from the date of start of the study. The study was initiated following approval from Institutional Ethics Committee. Patients fulfilling inclusion criteria were evaluated in detail at time of admission. Demographic data of the patients such as age, sex, pre-existing comorbidities, type of fracture, degree of osteoporosis and type of surgical procedure were recorded.

All data concerning the type of surgery, hospital stay and perioperative mortality was collected. After surgery patients were discharged on the fourth day if the clinical conditions permitted. The telephone number of the investigator was marked on discharge card. The patients were followed up in OPD on the 15th postoperative day for sutures removal and further on 45th and 90th postoperative day for assessment of functional ability.

In our study, age, sex, economic status, BMI, and arm circumference were comparable in the non-survivors and

survived patients. Urea levels were significantly higher in died patients. It has been suggested mortality insignificantly influenced by preoperative cognitive state, medical comorbidities and mobility. Dementia, chronic obstructive pulmonary disease, chest infection, heart failure, anemia, abnormal sodium (low or raised), elevated urea, elevated creatinine and malignancy, have all been described as risk factors for increased mortality in the months following a hip fracture. However, in our study only elevated urea levels were observed. Increased urea levels as a predictor of 30-day mortality has been reported earlier by Sheikh et al.

Conclusion

We found that Wound status was significantly worse in died patients' groups at 15 day ($P=0.007$). Weight bearing was comparable between both groups at 15 day ($P=0.038$). Perioperative mortality was affected by wound status at day 15.

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