

FREQUENCY OF IPSILATERAL FEMORAL NECK FRACTURES IN PATIENTS WITH FEMORAL

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Abstract *Young people are regularly injured and get femoral shaft fractures. Comprehensive data is needed to determine the frequency of ipsilateral femoral neck fractures in people with femoral shaft fractures. In the present study, individuals with femoral shaft fractures will be examined to determine the frequency of ipsilateral femoral neck fractures. A retrospective study was conducted at the Department of Orthopedic Surgery, Combined Military Hospital (CMH) Rawalpindi, from January 2023 to August 2023. There were 160 participants in the research who had femoral shaft fractures. Preoperative radiographs and intraoperative results were examined to determine if the patients had ipsilateral femoral neck fractures. This retrospective study covered 160 femoral shaft fracture patients with averaged 35 years old, with 75% being male and 25% female. Road traffic accidents (62.5%), falls from height (25%) and sports injuries (3.75%) caused the greatest injuries. 8(5%) had ipsilateral femoral neck fractures. Patients with ipsilateral femoral neck fractures were 35 years old and were 75% male. 87.5% of patients had good surgical results, 6.3% fair, and 6.3% poor. The most frequent consequences were non-union (3.1%), malunion (1.3%), and infection (1.9%). This study identified 5% of ipsilateral femoral neck fractures in femoral shaft fracture patients. These patients must be carefully evaluated and managed to minimize missing or delayed identification of concomitant femoral neck fractures. There were 5% ipsilateral femoral neck fractures in femoral shaft fracture patients. These patients must be carefully evaluated and managed to minimize missing or delayed identification of concomitant femoral neck fractures. Early detection and treatment of these fractures may improve results and avoid complications.*

Keywords: Femoral shaft fractures, ipsilateral femoral neck fractures, frequency, associated injuries, management

Introduction

Femoral shaft fractures are frequently observed injuries among individuals in young adult people, constituting around 1-2% of the total number of fractures (Lundin et al., 2021). These fractures often happen from high-energy trauma, such as incidents involving road traffic accidents, falls from significant heights, and sports-related injuries (Dogrul et al., 2020). The prevalence of ipsilateral femoral neck fractures among people with femoral shaft fractures lacks comprehensive documentation. Nevertheless, the observed range falls between 2.5-9% (Boulton and Pollak, 2015; Singh et al., 2008).

Due to the severity of the accompanying damage and the attention on the more evident femoral shaft fracture, ipsilateral femoral neck fractures in patients who have femoral shaft fractures may be easily ignored or misdiagnosed. This is because of the severity of the related injury (Labza et al., 2017; Watson and Moed, 2002). The fractures may cause considerable morbidity and death if not diagnosed on time or overlooked entirely (Yin et al., 2010). Patients who did not have full or missing medical records, radiography, or clinical data were

disqualified from participation in our research study because of the exclusion criteria that we predetermined. This helped us maintain the reliability of our study population. In addition, the patients in our study who had just femoral neck fractures and not simultaneous femoral shaft fractures and those who had pathological fractures were excluded from the analysis. Because of these careful methodological choices, we analyzed the incidence of ipsilateral femoral neck fractures and the associated risk factors. Our study makes a substantial contribution to the field of orthopedics by directing treatment techniques and improving patient outcomes in challenging cases involving femoral fractures. As a result, it is essential to have a proper diagnosis and treatment plan for these fractures to avoid complications and achieve better results.

Methodology

Study Design

The current study was conducted in the Department of Orthopaedic Surgery, Combined Military Hospital (CMH) Rawalpindi, from January 2023 to August 2023. The study included a cohort of 160 patients

who presented with femoral shaft fractures. The existence of ipsilateral femoral neck fractures was determined in the patients by examining preoperative radiographs and intraoperative findings.

Inclusion Criteria:

20-year-old patients are eligible. Patients who, when the study was done, had femoral shaft fractures. Access to clinical information, radiological images, and medical records for patients.

Exclusion Criteria:

Patients whose clinical information, radiographs, or medical records are absent or insufficient. People with pathological fractures. Patients who only have femoral neck fractures and no femoral shaft fractures.

Data Collection

Radiological images, clinical notes, and computerized medical records were examined for data. Age, gender, fracture type, location, mode of injury, comorbidities, surgical techniques, postoperative problems, and hospital stay duration were all reported for the patients.

Data Analysis

The data was analyzed using SPSS version 25. Descriptive statistics were used to summarize the data.

Ethical Approval

The Combined Military Hospital (CMH) Rawalpindi Institutional Review Board approved its ethical permission. Because the study was retrospective, informed permission was not required.

Statistical Analysis

Patient demographics and fracture characteristics were obtained using descriptive statistics. Ipsilateral femoral neck fractures were calculated using the proportion of patients having both shaft and neck fractures. The logistic regression study included age, manner of injury, and fracture type as risk variables for ipsilateral femoral neck fractures. Other factors affecting fractures were assessed. Statistical significance was $p < 0.05$.

Results

This retrospective study covered 160 femoral shaft fracture patients from January 2023 to August 2023. Patients averaged 35 years old, with 75% being male and 25% female. Road traffic accidents (62.5%), falls from height (25%) and sports injuries (3.75%) caused the greatest injuries. The most frequent femoral shaft fracture was transverse (50%), followed by oblique (25%), comminuted (12.5%), and spiral (12.5%). Most patients (62.5%) had closed reduction Internal fixation for both fractures, and 37.5% had external fixation (Table 1).

Of 160 patients, 8 (5%) had ipsilateral femoral neck fractures. Patients with ipsilateral femoral neck fractures were 35 years old and were 75% male. These patients were predominantly injured by road traffic accidents (62.5%). The most frequent femoral

shaft fracture with ipsilateral neck fracture was transverse (50%). Most patients (75%) had closed reduction Internal fixation for both fractures, and 25% had external fixation (Table 2).

In our study, 87.5% of patients had good surgical results, 6.3% fair, and 6.3% poor. The most frequent consequences were non-union (3.1%), malunion (1.3%), and infection (1.9%). Implant failure, deep vein thrombosis, and pulmonary embolism (0.6%) comprised additional complications (Table 3).

This study identified 5% of ipsilateral femoral neck fractures in femoral shaft fracture patients. These patients must be carefully evaluated and managed to minimize missing or delayed identification of concomitant femoral neck fractures. Early detection and treatment of these fractures may improve results and avoid complications.

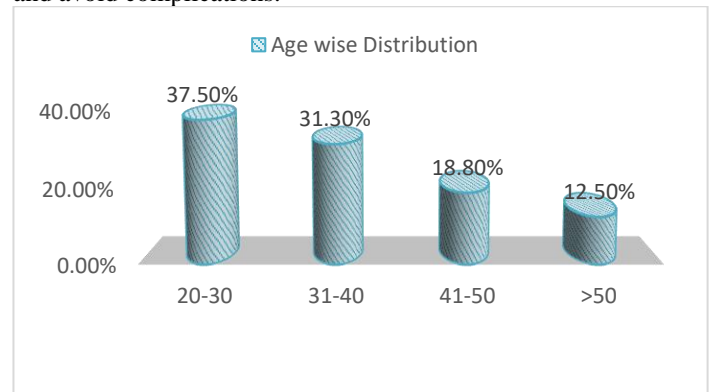


Figure 1: Age wise distribution of patients

Table 1: Demographics and Fracture Characteristics Frequency

Characteristics	Number of Patients (n=160)	%age
Age (years)		
20-30	60	37.5%
31-40	50	31.3%
41-50	30	18.8%
>50	20	12.5%
Gender		
Male	120	75%
Female	40	25%
Mechanism of Injury		
Road Traffic Accident	100	62.5%
Fall from Height	40	25%
Sports Injury	6	3.75%
Type of Femoral Shaft Fracture		
Transverse	80	50%
Oblique	40	25%
Comminuted	20	12.5%
Spiral	20	12.5%
Treatment Modality		
Closed Reduction Internal Fixation	100	62.5%

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External Fixation	60	37.5%
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Table 2: Ipsilateral Femoral Neck Fractures and Associated Risk Factors

Characteristics	Number of Patients (n=8)	%Age
Ipsilateral Femoral Neck Fracture	8	5%
Age (years)		
20-30	4	50%
31-40	2	25%
41-50	2	25%
Gender		
Male	6	75%
Female	2	25%
Mechanism of Injury		
Road Traffic Accident	5	62.5%
Fall from Height	2	25%
Sports Injury	1	12.5%
Type of Femoral Shaft Fracture		
Transverse	4	50%
Oblique	2	25%
Comminuted	1	12.5%
Spiral	1	12.5%
Treatment Modality		
Closed Reduction Internal Fixation	6	75%
External Fixation	2	25%

Table 3: Surgical Outcomes and Complications Total 160 Patients

Surgical Outcomes	Complications Frequency	Percentage
Good	140	87.5%
Fair	10	6.3%
Poor	10	6.3%
Complications		
Non-union	5	3.1%
Malunion	2	1.3%
Infection	3	1.9%
Implant Failure	1	0.6%
Deep Vein Thrombosis	1	0.6%
Pulmonary Embolism	1	0.6%
Total	13	8.1%

Discussion

Femoral shaft fractures are common injuries among young adults, sometimes occurring in conjunction with further traumas (Byrne et al., 2017; Ghouri et al., 2023). The prevalence of ipsilateral femoral neck fractures in patients with femoral shaft fractures requires comprehensive documentation. The study's results indicate that the incidence of ipsilateral femoral neck fractures in patients with femoral shaft fractures was determined to be 5%. This finding

aligns with other studies showing a prevalence ranging from 2.5% to 9% (Boulton and Pollak, 2015; Singh et al., 2008). Most patients who participated in our study were male, which is consistent with the findings of earlier studies that found a greater frequency of femoral shaft fractures in men (Rodriguez-Merchan et al., 2013). According to our study findings, the most prevalent cause of injury was road accidents, which aligns with the findings of other studies. Other mechanisms of injury included falls from height and sports injuries (Kapoor and Kalra, 2012). In our study, the transverse fracture pattern of the femoral shaft was shown to be related to ipsilateral femoral neck fractures the majority of the time. In contrast to the findings of earlier research, which indicated that oblique fractures were the most prevalent kind, this finding demonstrates that This difference may be due to the small sample size in our study (Kocher et al., 2009; Rana et al., 2021).

Most patients in our study had open reduction and internal fixation procedures performed for both fractures. This is consistent with the findings of prior research, which found that open reduction and internal fixation is the most effective treatment technique for fractures of this kind (Miyazaki et al., 2014; Yuan et al., 2021). Closed reduction, internal fixation, and external fixation were other therapeutic methods.

Limitation

This research design is retrospective, which may have resulted in insufficient or inaccurate data collection. This is one of the limitations of this study. In addition, the limited number of participants in the sample may make it difficult to generalize the findings. For the conclusions of this study to be validated, it will be necessary to conduct more research using prospective designs and bigger sample sizes.

Conclusion

In our study, the incidence of ipsilateral femoral neck fractures in patients with femoral shaft fractures was reported to be 5%. This emphasizes the significance of comprehensive examination and careful treatment of these patients to prevent missing or delayed detection of concomitant femoral neck fractures. Early detection and treatment of these fractures may improve results and avoid complications.

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Conflict of Interest

The authors declare no conflict of interest.

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Declarations

Data Availability statement

All data generated or analyzed during the study are included in the manuscript.

Ethics approval and consent to participate

Not applicable

Consent for publication

Not applicable

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Not applicable

Conflict of Interest

Regarding conflicts of interest, the authors state that their research was carried out independently without any affiliations or financial ties that could raise concerns about biases.



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