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Characteristics of Femur Fracture Patients at RSUD Sanjiwani from January - August 2023

I Kadek Adi Surya Pramana[1], Kadek Yoga Premana[2]

[1]General Practitioner at Sanjiwani District General Hospital, Gianyar
[2]Orthopedic Surgeon Specialist at Sanjiwani District General Hospital, Gianyar

Corresponding Author: I Kadek Adi Surya Pramana

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ABSTRACT

Background: The causes of femur fractures are diverse and can be influenced by several factors. These bone fractures often occur due to high-impact trauma, such as car accidents, sports injuries, or other traumatic events that result in excessive stress on the bone. Another contributing factor is bone energy or strength reduction, which is frequently observed in the elderly population.
Methods: This study is retrospective descriptive research with cross-sectional data collection. Data were obtained from the medical records of patients diagnosed with femur fractures who received treatment at RSUD Sanjiwani Gianyar in 2023.
Results: The majority of patients experienced injuries due to falls (68.2%). Based on age, the study noted that 29.5% of patients were between 18 and 40 years old, 25% were between 40 and 65 years old, and 45.5% were over 65 years old. Most patients were female (72.7%), and the majority of patients had closed fractures (93.2%), while only a small percentage had open fractures (6.8%). Based on this data, the majority of fractures occurred in the proximal one-third of the femur bone (56.8%), followed by the medial one-third (20.5%) and the distal one-third (22.7%).
Conclusion: There is a variation in patient age, with the majority being over 65 years old. Furthermore, most patients are female, with the majority experiencing closed fractures, and the most common location for fractures is the proximal one-third of the femur bone. These findings provide a general overview of the characteristics of this study's patient population with femur fractures.

Keywords: Femur Fracture, Frailty, Pathological Fracture

INTRODUCTION

Femur fracture is a bone discontinuity in the femur, the longest, largest, heaviest, and strongest bone in the human body. The causes of femur fractures are highly varied and can be influenced by several factors. These bone breaks often occur due to high-impact trauma, such as car accidents, sports accidents, or other traumatic incidents that result in excessive stress on the bone. Another contributing factor can be decreased bone energy or strength, which is frequently observed in the elderly population.[1]

Femur fractures can occur in the proximal, medial, and distal parts. Cases of fractures in the distal part of the femur make up only 3-6% of all femur fractures. This type of fracture more often results from low-energy trauma in the elderly population, usually occurring after falls from a standing position. Elderly patients frequently have multiple underlying conditions, making low-energy fractures potentially lead to various complications. Reported mortality rates at 30 days, six months, and one year

have been 6%, 17-18%, and 18-30%, respectively, with a five-year mortality rate reaching 48%.[2]

Proximal femur fractures also more commonly occur in the elderly population, with over three-quarters of proximal femur fractures happening in patients aged over 75 in Germany. Although approximately 1.3 million hip fractures were reported globally in 1990, this number is estimated to increase significantly, reaching a range of 7.3 to 21.3 million by 2050. Proximal femur fractures in elderly patients often have a profound impact on their lives, stripping away the ability to maintain their independence, which may already be compromised. Mobility levels and the ability to perform daily activities are often difficult to recover within one year after a hip fracture.[3]

Furthermore, about 25-50% of people aged 85 and above are considered frail, experiencing three or more factors such as unintentional weight loss, grip weakness, self-reported exhaustion, slow walking speed, and low physical activity. Frailty describes their high vulnerability to stressors, where even minor events like mild infections or minor surgeries can result in significant declines in health status.[4]

Femur fractures, especially in frail patients, are associated with a high risk of cardiovascular, pulmonary, thrombotic, infectious, or bleeding complications. Delaying surgery further increases the risk of mortality. Therefore, operative management should ideally be performed within the first 24 hours, as delaying beyond this point increases perioperative complication and mortality risks. Patients who undergo surgery within the first 48 hours have a 20% lower risk of dying in the following year, particularly those with comorbidities who can significantly benefit from surgery within 24 hours.[5] All of these factors emphasize the importance of a thorough understanding and careful treatment of femur fractures, especially in elderly patients with frailty. Knowledge of the characteristics of femur fracture patients is crucial to enhance physicians' accuracy in diagnosis and improve the effectiveness of patient care for femur fractures.

MATERIALS & METHODS

This study is a retrospective descriptive research study with data collected cross-sectionally. Descriptive research aims to present and report the occurrence and information available without intervening in these findings. The data used in this study is secondary data consisting of medical records of patients diagnosed with femur fracture at Sanjiwani Gianyar Hospital who received treatment at the hospital in 2023 based on medical interviews, physical examinations, and relevant diagnostic tests. The data collected include age, gender, mechanism of injury (MOI), fracture type, and fracture location.

The data are analyzed using the Statistical Package for the Social Sciences (SPSS) software version 24.0. Descriptive statistical tests are conducted to understand the characteristics and frequency distribution of various variables in the research sample. Means will present numerical variables, while percentages will be used for categorical data.

RESULT

This study involved 44 patients who experienced femur fractures. In this research, most patients suffered injuries due to falls (68.2%), while a few others had injuries from traffic accidents (29.5%). Based on age, the study noted that 29.5% of patients were between 18 and 40 years old, 25% were between 40 and 65 years old, and 45.5% were above 65 years old. Most patients were female (72.7%), while males comprised 27.3% of the subjects. Data regarding the type of fracture were obtained from reading patients' medical records, with most patients experiencing closed fractures (93.2%), while only a small portion had open fractures (6.8%). Based on this data, the majority of fractures occurred in the proximal third of the bone (56.8%), followed by the medial third (20.5%) and

the distal third (22.7%). The data can be seen in Table 1.

Table 1. Femur Fracture Characteristics

Characteristics	Total N= 44
Mechanism Of Injury (MOI)	
Fall, n (%)	30 (68.2%)
Traffic Accident, n (%)	13 (29.5%)
Age	
18-40 years, n (%)	13 (29.5%)
40-65 years, n (%)	11 (25%)
>65 years, n (%)	20 (45.5%)
Gender	
Male, n (%)	12 (27.3%)
Female, n (%)	32 (72.7%)
Fracture Type	
Closed Fracture, n (%)	41 (93.2%)
Open Fracture, n (%)	3 (6.8%)
Fracture Location	
1/3 Proximal, n (%)	25 (56.8%)
1/3 Medial, n (%)	9 (20.5%)
1/3 Distal, n (%)	10 (22.7%)

CONCLUSION

Femur fracture is defined as damage to the structure or discontinuity of the femur bone. This study analyzed 44 patients recorded at RSUD Sanjiwani Gianyar diagnosed with femur fracture who received treatment at RSUD Sanjiwani Gianyar from January to August 2023. The results of the analysis indicate that most patients experienced injuries due to falls, and a small number due to traffic accidents. There was variation in the ages of the patients, with the majority being above 65 years old. Furthermore, the majority of the patients were women. From the data on the fracture type, most patients had closed fractures, and the most common fractures occurred in the proximal third of the femur bone. These findings provide a general overview of the characteristics of this study's patient population with femur fractures.

Declaration by Authors

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