

## The Clinical Profile of Distal Third Femoral Shaft Fractures Patients

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### Abstract

### Original Research Article

**Objective:** In this study our main goal is to evaluate the clinical profile of distal third femoral shaft fractures patients.

**Method:** This prospective observational study was carried out at National Institute of Traumatology and Orthopedic Rehabilitation (NITOR), Dhaka from June 2007 to December 2008. Where a total of 10 patients with distal femoral fractures were selected and treated with open reduction and internal fixation were included in the study. **Result:** During the study, most of the patients belong to 30-39 years age group and 80% were male. Highest number of patients had right side involvement (60%). (90%) had sustained high-energy trauma while only 10% suffered low-energy trauma. Also, 50% were operated upon within 1-2 weeks of injury. **Conclusion:** From our result we can conclude that, most of the patients had right side involvement and majority had sustained high-energy trauma. Early surgery, closed reduction, at least two screws in each fragment and early post-operative knee mobilization are essential for good outcome in patients.

**Keywords:** Distal third femoral shaft fractures, knee joint, retrograde nailing.

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## INTRODUCTION

The term 'distal femur' traditionally comprises the lower third of the femur. This zone is the literature varies greatly between the distal 7.6 cm and the distal 15 cm of the femur.

The supracondylar area of distal femur is the transition zone between the distal diaphysis and the femoral articular condyles. At the diaphyseal-metaphyseal junction, the metaphysis flares, especially origin the medial side, to provide platform for the broad condylar weight-bearing surface of the knee joint. Anteriorly between this condyle is the smooth articular depression for patella 'I' and posteriorly the intercondylar notch.

The femoral shaft gives attachment of different muscles and is subjected to major muscular forces that deform the thigh after a fracture. In fracture distal third of femur, the distal fragment may be held flexed by unopposed action of the gastrocnemius [1].

From one review found that available evidence for treatment options of distal femur fractures is insufficient to inform clinical practice and that there is a priority for a high-quality trial to be undertaken [2]. The incidence of malunion, non-union and infection are relatively high. Non operative treatment is consistently associated with poor results. Because of proximity to knee joint, full knee function may be difficult [3].

In this study our main goal is to evaluate the clinical status of distal third femoral shaft fractures patients.

## OBJECTIVE

- To assess the clinical profile of distal third femoral shaft fractures patients.

## METHODOLOGY

### Type of Study

- This prospective observational study

**Place and Period Study**

- The study was carried out at-the National Institute of Traumatology and Orthopedic Rehabilitation (NITOR), Dhaka from June 2007 to December 2008.

**Study Population**

- 10 patients with distal femoral fractures were selected and treated with fin nailing. 8 patients were male and 2 patients were female. The mean age was 38.5 years (range 20-60 year). Six fractures were Winquist type I and four fractures were Winquist type II. Most of the fractures were high energy injuries caused by road traffic accidents.

**Sampling Method**

- Purposive sampling method was followed as per inclusion and exclusion criteria.

**Inclusion Criteria**

- Age: Adult patients i.e. fractures with distal epiphyseal fusion.
- Fracture: Distal femoral shaft only.
- Injury: Closed fractures only.
- Injury time: Fresh and less than three weeks old fractures were taken.
- Fracture type: Stable fractures i.e. Winquist type I and type II fractures.

**Data collection procedure:**

A pretested and predesigned proforma containing history and examination findings of the patient, operative procedure and follow up was used to collect the data.

**Data Analysis**

Data were collected, compiled and tabulated according to key variables. All statistical analysis of different variables were carried out according to standard statistical methods and calculations done by using scientific calculator.

**RESULTS**

In Table-1 shows age distribution of the patients where 40% patients belong to 30-39 years' age group. The following table is given below in detail:

**Table-1: Age distribution of the patients**

Age distribution of the patients	n	%
20-29	2	20
30-39	4	40
40-49	3	30
50-60	1	10

Table-2 shows that out of 10 cases 8 (80%) were male and 2 (20%) were female. The male female ratio was 4:

**Table-2: Sex distribution of patients (IT-10)**

Sex	Number of patients	Percentage
Male	8	80
Female	2	20

In Table-3 shows distribution of side involvement (:n = 10) where highest number of patients had right side involvement (60%). The following table is given below in detail:

**Table-3: Distribution of side involvement**

Side involvement	Number of patients	Percentage
Right	6	60
Left	4	40

In Table-4 considering mechanism of injury, shows that the highest percentage (90%) had sustained high-energy trauma while only 10% suffered low-energy trauma. The following table is given below in detail:

**Table-4: Mechanism of injury**

Mechanism of injury	n	%
High-energy trauma	9	90
Motor vehicle accident	5	50
Motor cycle accident	2	20
Auto-pedestrian accident	1	10
Fall from height	1	10
Low energy trauma	1	10

Table-5 shows that 5 patients (50%) were operated upon within 1-2 weeks of injury.

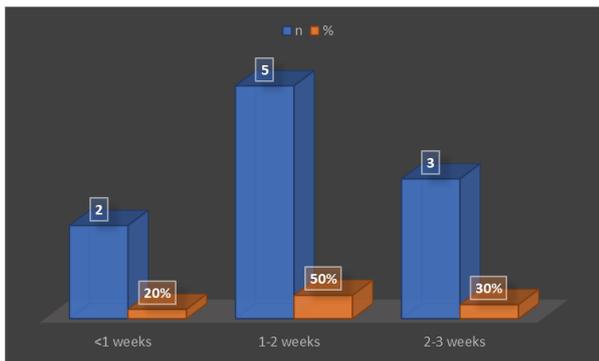
**Table-5: Time interval between injury and operation**

Group	Time interval between injury and fixation (wk)	Number of patients	Percentage
1	< 1	2	20
2	1-2	5	50
3	2-3	3	30

Table-5 of time interval between injury and fixation of fracture (n = 10)

In Figure-1 shows time interval between injury and fixation (wks) where 50% were operated upon

within 1-2 weeks of injury. The following figure is given below in detail:



**Fig-1: Time interval between injury and fixation (wks)**

## DISCUSSION

In the study, the age of the patients was between 20 to 60 years, mean age being 38.5 years. Almost similar findings were reported by two studies where the average age of the patients was 38 years and 39 years respectively [4, 5].

Total number of cases were 10, among them 8 (80%) were male and 2 (20%) were female. Male-female ratio was -: 1. In one study male-female ratio was 8: 3 [4] & in the another study, the male-female ratio was 6.5: 1. 60% patients were affected on the right side and 40 % patients were affected on the left side [5].

Analyzing the mechanism of injury, it was found that majority (90%) of patients sustained injury due to high-energy trauma. Among 90% patients, 50% patients sustained injury from Motor Vehicle Accident, 20% from motor cycle accidents and 10% due to auto-pedestrian accidents. Only 10% of distal femoral shaft fractures occurred due to low-energy trauma as a result of fall on the ground. Another study reported in study that 76% distal femoral fractures were due to high energy trauma [4].

All fractures united within average 16 weeks and were able to bear weight within 12 weeks of fixation. Period of fracture healing was average 22.4 weeks in the one study & 18 weeks in the study of other study [6, 7].

## CONCLUSION

From our result we can conclude that, most of the patients had right side involvement and majority had sustained high-energy trauma. Early surgery, closed reduction, at least two screws in each fragment and early post-operative knee mobilization are essential for treatment in patients.

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