

# Management Of Fracture Of Shaft Of Femur By Intramedullary Nailing In A Developing Country: A Clinical Study

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## Abstract

A prospective study of 100 patients with fracture of shaft femur managed with intramedullary nailing at a level 1 trauma centre in a developing country set up was done. Patients had either Kuntscher nail or interlocking nail depending on financial status of the patient. Most of the patients were in the second and third decade and 87% of the patients were males. Road traffic accident was the etiology in all patients. The results were good in 73% and fair in 25% of patients. Intramedullary nailing with Kuntscher nail or interlocking nail is an excellent method of fixation of fracture of shaft of femur in a developing country set up.

## INTRODUCTION

Various methods of fixation of femur include- intramedullary nailing (antegrade or retrograde), plates and screws.<sup>1,2,3,4</sup> A prospective study of 100 patients with fracture of shaft femur managed with intramedullary nailing at a level 1 trauma centre in a developing country set up was done.

## MATERIAL AND METHODS

A prospective study of 100 patients with fracture of shaft femur managed with intramedullary nailing at a level 1 trauma centre in a developing country set up was done. Patients had either Kuntscher nail or interlocking nail depending on financial status of the patient (Closed or open). Patients were allowed to gradually weight bear only when there was significant bridging callus at the fracture site .Patients were assessed according to degree of knee flexion, duration of fracture healing and complications.(Table 1). They were followed for an average of 2 years.

Figure 1

Table 1

	Range of Motion(degrees)
Good	>110
Fair	60-110
Poor	0-60

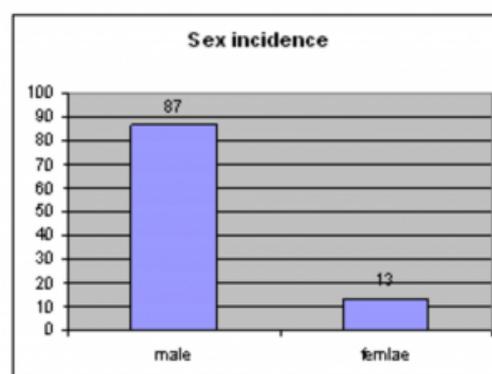
## RESULTS

Most of the patients (87%) in the study were males.(Table 2) Majority of the cases were in the second and third decade (63%). The youngest in the study was 17years whereas the oldest was 80 year old (Table 3) Road traffic accident was the etiology in all the patients. The site of fracture was proximal and middle third of the shaft of femur with a right side predominance.(Table 4) 83% of the fracture pattern was transverse with 17% being oblique or communited.(Table 5)

Figure 2

Table 2

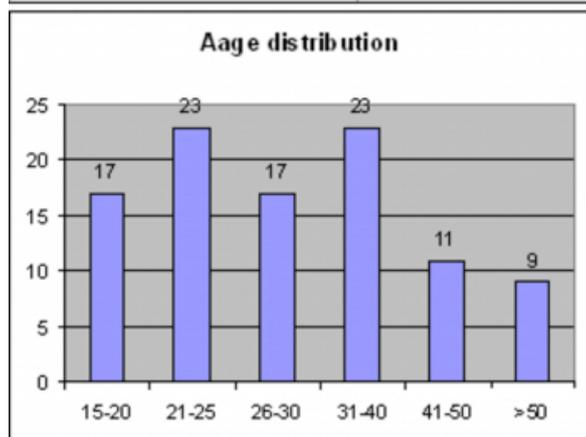
Sex	Number of patients
Male	87
female	13



**Figure 3**

Table 3

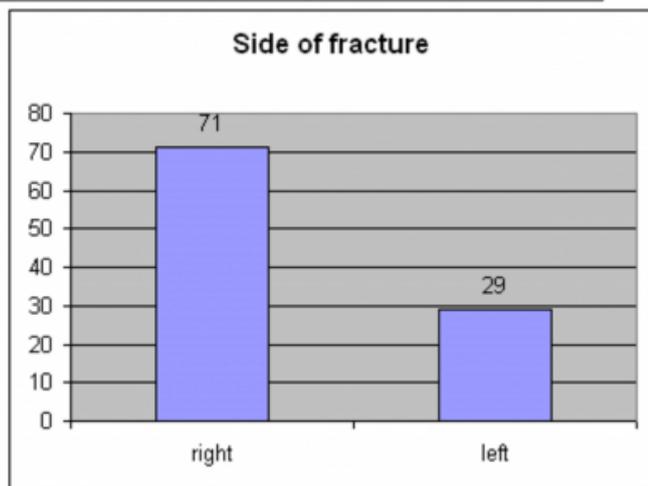
Age	Number of patients
15-20	17
21-25	23
26-30	17
31-40	23
41-50	11
>50	9



**Figure 4**

Table 4

Side of fracture	Number of patients
Right	71
Left	29



**Figure 5**

Table 5

Type of fracture	Number of patients
Transverse	83
oblique	17

60% of the patients were managed with Kuntscher nail and 40% with interlocking nail.(Figures 1,2) The average time of fracture healing was 16 weeks in both the groups.(Figure 3) The results were good in 73% and fair in 25%.(Table 6) There was 3% incidence of infection which was managed successfully with antibiotics. There were 2 cases of implant failure in the patients who had Kuntscher nail, which treated with interlocking nail.(Table 7) There were no cases of non-union in our series.

**Figure 6**

Figure 1: Fixation of fracture of shaft femur with Kuntscher nail



**Figure 7**

Figure 2: Fixation of fracture of shaft femur with interlocking nail



**Figure 8**

Figure 3: Union of the fracture of shaft of femur with significant callus



**Figure 9**

Table 6

Results	Number of patients
Good	73
Fair	25
Poor	2

**Figure 10**

Table 7

Complication	Number of patients
Infection	3
Implant failure	2
Joint stiffness	2

### **DISCUSSION**

The various methods of fixation of fracture of shaft of femur include retrograde or antegrade intramedullary nailing, elastic nails or pre drilled Kuntscher nails. Ricci et al in their series of 293 fractures of shaft of femur concluded that the results are same with retrograde or antegrade nailing.<sup>1</sup> Arpacioğlu and colleagues had a high success rate in fixation of 48 fractures of shaft of femur with interlocking nail.<sup>2</sup>

Dhakal and co workers in their series of 44 patients with fracture of shaft femur concluded that pre drilled Kuntscher nail is an equally effective way of fixation of fracture of shaft of femur. 3

In our series of 100 patients with fractures of shaft femur, road traffic accident was the predominant etiology and financial capacity was the basis of deciding the nature of fixation (Kuntscher nailing or Interlocking nail). Majority of the patients were in the second and third decade and there was male predominance. The average healing time in both the groups was similar (16 weeks). There were 2 cases of implant failure with Kuntscher nail which was treated successfully with interlocking nails. Incidence of infection was 3% which was managed successfully with antibiotics.

### **CONCLUSION**

Kuntscher nails are cost effective and give an acceptable result in the management of fracture of shaft of femur in a

developing country set up.

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