

Assessment of Efficacy of Supraintercondylar and Supracondylar Femur Fractures Treated with Condylar Buttress Plates: A Comparative Study

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Abstract

Background: Treatment of supraintercondylar and supracondylar femur fractures is generally challenging. This study was conducted to compare the efficacy of supraintercondylar and supracondylar femur fractures treated with condylar buttress plates. **Subjects and Methods:** The study was conducted in Department of Orthopaedics, Government S K Hospital, Sikar, Rajasthan, India. The sample size of 50 patients was selected for the study. Participants of age above 21 were included in the study. Among these in group I, there were 25 participants of supra intercondylar fractures whereas in group II, 25 participants of supra condylar fractures. Statistical analysis was done by using SPSS, version 22 (SPSS, Inc., Chicago, IL) and $p < 0.05$ was considered statistically significant. **Results:** In our study, 32 were males whereas 18 were females. Supra intercondylar fractures were present in 17 males and 8 females whereas supra condylar fractures were present in 15 males and 10 females. Rate of union occur in 23 cases of Supra intercondylar fractures whereas in 24 cases supra condylar fractures. Complications such as stiffness, varus deformity occur more in supra intercondylar fractures. Time taken for union in both the cases are almost same. **Conclusion:** Our study concludes that clinical results of supracondylar fractures was better with condylar buttress plates as compared to supra intercondylar fractures.

Keywords: supraintercondylar fracture, supracondylar fracture, condylar buttress plates.

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Introduction

Distal femur fractures apparently account for not as much of 1% of all the fractures and include between 4%–6% of all femur fractures. Supra condylar femur fractures occur usually among young persons that involve in high-energy accidents like motor vehicle and motorcycle accidents and sports trauma and older persons, those are osteoporotic.^[1] Intra-articular fractures of distal femur account for an enormous surgical challenge. These fractures are difficult to manage and surgical management is usually suggested for a favorable outcome as these are often comminuted and intra-articular.^[2] With time pattern of management of supra-condylar and inter-condylar femur fractures are changing. Distal femoral fractures are treated using several devices.^[3,4] Utilizing multiple techniques 70%-85% cases, good to excellent results were reported for open reduction and internal fixation.^[5] The JudetLetournel screw plate which is an extramedullary hardware is routinely used.^[6] From 2000 on, Distal femoral fractures are also fixed with condylar buttress plates.^[7] The present study was conducted to assess the efficacy of Supraintercondylar and Supracondylar Femur Fractures Treated with Condylar Buttress Plates.

Subjects and Methods

The study was conducted in Department of Orthopaedics, Government S K Hospital, Sikar, Rajasthan, India over the period of 1 year. The sample size of 50 patients was selected for the study. The study was approved by the ethical committee of institution. All the participants were informed about the study and a written consent was obtained from all the participants. Participants of age above 21 were included in the study. Among these in group I, there were 25 participants of supra intercondylar fractures whereas in group II, 25 participants of supra condylar fractures. Statistical analysis was done by using SPSS, version 22 (SPSS, Inc., Chicago, IL) and $p < 0.05$ was considered statistically significant.

Results

The sample size of 50 patients was selected for the study. Among these in group I, there were 25 participants of supra intercondylar fractures whereas in group II, 25 participants of supra condylar fractures. In our study, 32 were males whereas 18 were females. Supra intercondylar fractures were present in 17 males and 8 females whereas supra condylar fractures were present in 15 males and 10 females. Table 3 shows the clinical outcome of the study. Rate of union occur in 23 cases of Supra intercondylar fractures

whereas in 24 cases supra condylar fractures. Complications, stiffness, varus deformity only occur in supra intercondylar fractures. Time taken for union in both the cases are almost same.

Table 1: Distribution of gender

Gender	N(%)	p-value
Male	32(64%)	<0.05
Female	18(36%)	
Total	50(100%)	

Table 2: Distribution of fractures on the basis of gender

supra intercondylar fractures (25)		supra condylar fractures(25)	
Male	Female	Male	Female
17	8	15	10

Table 3: Clinical outcomes

Variable	Supraintercondylar Fracture	Supracondylar Fracture
Rate of union	23	24
Time taken for union (months)	6	5.7
Complications	1	0
Infection	3	2
Stiffness	2	0
Varus deformity	3	0

Discussion

Fractures of the distal femur account for 6 % of all femur fractures and is clinically challenging. Sufficient mechanical stability is required in the treatment of distal femur fractures; thus, patients should receive early rehabilitation to achieve better clinical outcome. At present, fixation options include nailing systems and plating systems. Intramedullary nailing can be performed in retrograde pattern. Advantages of intramedullary nailing include less extensive dissection, decreased blood loss, and decreased operating time.^[8] In our study, 32 were males whereas 18 were females. Supra intercondylar fractures were present in 17 males and 8 females whereas supra condylar fractures were present in 15 males and 10 females. Rate of union occur in 23 cases of Supra intercondylar fractures whereas in 24 cases supra condylar fractures. Complications such as stiffness, varus deformity occur more in supra intercondylar fractures. Time taken for union

in both the cases was almost same.

Similar study conducted by Parihar K et al shows that the rate of union was 93.3% (n=28) in supra intercondylar fractures and 96.7% (n=29) in supracondylar fractures. There was no significant difference between the two groups.^[9]

Weng CJ et al conclude that union rate of supraintercondylar fractures was 90 % and supracondylar fractures was 91.7 %. In supraintercondylar group, 16.7 % revealed postoperative varus deformity, whereas none in supracondylar.^[10]

Conclusion

Our study conclude that clinical results of supracondylar fractures was better with condylar buttress plates as compared to supra intercondylar fractures.

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