

## **Clinical Outcomes of Distal Femoral Fractures Treated with Locking Plate.**

Dr. D.S.Ramnath, M.S.Ortho<sup>1</sup>, Dr.Ravi Kiran.N<sup>2</sup>, Dr.Saketh Kolla<sup>3</sup>,  
Dr.M.Abhinandan Reddy<sup>4</sup>

<sup>1</sup>professor I/C, Govt Medical College, Nizamabad, Telangana, Hyd

<sup>2</sup>assistant Professor, Osmania Medical College, Hyderabad.

<sup>3</sup>senior Resident, Ogh Hyderabad

<sup>4</sup>senior Resident Ogh Hyderabad.

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**Abstract:** Locked plating (LP) of distal femoral fractures are widely used now- a-days. Risk factors for implant failure, nonunion is limited. The purpose of this study was to assess outcomes of LP treatment for distal femoral fractures. 30 distal femoral fractures were treated with locking plate. Nonunion and infection, and implant failure were used as outcome variables. 20% of the patients developed a non union. 10% developed hardware failure. 2% developed infection. In spite of new fixation techniques, distal femoral fractures resulted in worse clinical outcomes. Soft tissue management is important. Submuscular plate insertion decreases the nonunion rate.

**Keywords:** Femur Fracture Supracondylar Locked plating Outcome

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### **I. Introduction**

Distal femoral fractures account for less than 1% of all fractures and supracondylar fractures occur in young patients involved in high-energy accidents and osteoporotic patients. Surgical fixation has given better outcomes than conservative management. The recent trend is toward distal femoral locking plates which can be inserted submuscularly as a minimally invasive procedure to preserve fracture hematoma, and avoid extensive soft tissue damage. A significantly higher nonunion rate for stainless steel plate implants compared to titanium has been reported. The purpose of this study was to analyze the clinical outcomes of locked plating for supracondylar femur fractures.

### **II. Methods**

All patients with supracondylar femoral fracture treated with locking plate and age older than 18 years were included in this study. Patients with metastatic bone disease, nerve injury were excluded. 30 fractures were surgically treated for distal femur fractures during the study period. Follow-up was 24 months. Open or closed reduction and internal fixation of the supracondylar femoral fracture was performed under C-arm guidance. Patients were followed at intervals of 2 weeks, 6 weeks, 12 weeks, 6 months, 1 year, and 2 years. Complaints of pain were assessed with a visual analog scale (VAS). Complications were recorded - Hardware loosening, Hardware failure, and Revision surgery. Infection was defined as either deep or superficial.

### **III. Results**

16 left, 14 right in 30 patients with a mean age of 55 years (range 18–85 years). There were 16 males and 14 females. Surgical complications were found in 20% of patients. 20% of the patients developed a non union. 10% developed hardware failure. 2% developed infection

### **IV. Discussion**

Earlier studies have shown reduced nonunion rates for locked plating of distal femoral fractures compared to non-locking plates, but more recent studies found nonunion rates up to 20%. Though locking plates have provided an additional option for treatment of distal femoral fractures, the use of locked plates has increased and the numbers of fractures fixed with plates have increased complications rate- including nonunion, delayed union, and implant failure are not rare. The submuscular plate insertion reduces nonunion formation significantly.

### **V. Conclusion**

In spite of new fixation techniques, distal femoral fractures resulted in worse clinical outcomes. Soft tissue management is important. Submuscular plate insertion decreases the nonunion rate.

### **Competing Interests**

The authors declare that they have no competing interests.

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