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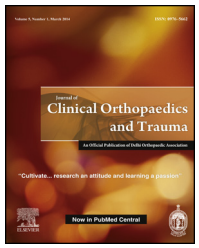

Original Article

Evaluation of proximal femoral locking plate in unstable extracapsular proximal femoral fractures: Surgical technique & mid term follow up results☆

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ABSTRACT

Background: Stable trochanteric femur fractures can be treated successfully with conventional implants such as sliding hip screw, cephalomedullary nails, angular blade plates. However comminuted and unstable inter or subtrochanteric fractures with or without osteoporosis are challenging & prone to complications. The **PF-LCP** is a new implant that allows angular stability by creating fixed angle block for treatment of complex, comminuted proximal femoral fractures.

Method: We reviewed 30 patients with unstable inter or subtrochanteric fractures, which were stabilized with PF-LCP. Mean age of patient was 65 years, and average operative time was 80 min. Patients were followed up for a period of 3 years (June 2010–June 2013). Patients were examined regularly at 3 weekly interval for signs of union (radiological & clinical), varus collapse (neck-shaft angle), limb shortening, and hardware failure.

Result: All patients showed signs of union at an average of 9 weeks (8–10 weeks), with minimum varus collapse (<10°), & no limb shortening and hardware failure. Results were analysed using IOWA (Larson) hip scoring. Average IOWA hip score was 77.5.

Conclusion: **PF-LCP** represents a feasible alternative for treatment of unstable inter- or subtrochanteric fractures.

☆ Place of study – Lady Hardinge Medical College and RML Hospital.

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1. Introduction

Proximal femoral fractures are one of the commonest fractures encountered in orthopaedic trauma practice (about 3 lakh per year[1] with mortality rate of 4.5%–22%[2]). Hence the interest in development of improvements in management of these fractures remains high.

Extracapsular proximal femoral fractures are those occurring in the region extending from extracapsular basilar neck region to 5 cm below lesser trochanter. Proximal femoral fractures include intertrochanteric and subtrochanteric fractures.[3] Stable proximal femoral fractures can be managed with conventional implant with predictable results whereas unstable fractures are challenging, and prone to complications. There is a lack of consensus on the treatment for unstable proximal femoral fractures. Here we report our experience of complex extracapsular proximal femoral fractures with proximal femoral locking plate. Although good results are obtained with use of locking plate for complex fractures in other anatomic regions but scanty literature exists regarding their long term use in proximal femoral regions. Our aim is to evaluate the mid term clinical and functional outcome of PF-LCP in management of complex proximal femoral fractures with regards to complications, mortality, reoperations and outcome.

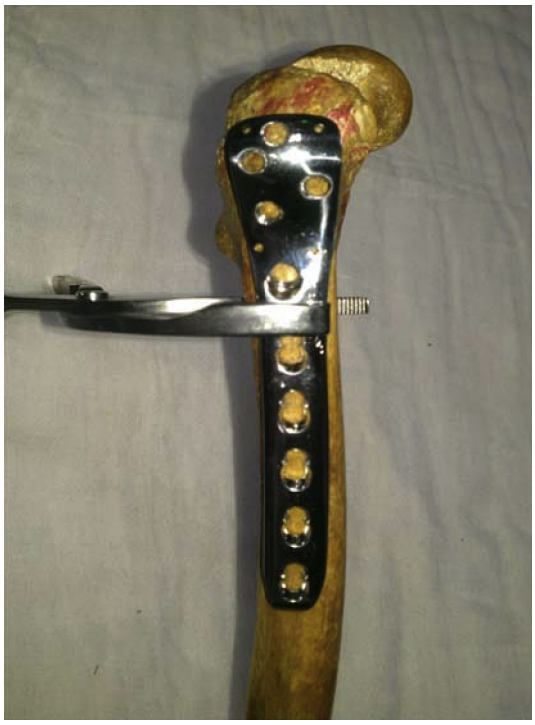

Fig. 1 – Showing PF-LCP applied over bone model.

2. Methods

Our study included a total 30 patients (20 males & 10 females) with unstable proximal femoral fractures (AO Type[3] 31A2 & 31A3) who were subjected to management using PF-LCP. The mean age of the patients was 65 years (36–82 years). Extracapsular proximal femoral fractures included both intertrochanteric and subtrochanteric fracture. Intertrochanteric fractures were classified according to Evans, whereas subtrochanteric fractures were classified according to Seinsheimer. Open fracture, Pathological fracture, Inability to walk before fracture, Polytrauma patients, Bilateral trochanteric, with associated shaft fractures and patients with systemic manifestations were excluded from the study. Patients were followed up for a period of 3 years (June 2010–June 2013). Patients were examined regularly at 3 weekly interval for signs of union (radiological & clinical), varus collapse (neck-shaft angle), limb shortening, and hardware failure. Patients were allowed non-weight bearing ambulation from day after surgery. Toe-touch weight bearing was started at 3 weeks and full weight being at 8 weeks (subject to union criteria).

All the patients were evaluated for osteoporosis and were given specific scores (1–6) according to the *SINGH'S INDEX*.[4]

2.1. *Surgical technique*

PF-LCP implant is a limited contact, angular stable plate designed for management of complex proximal femoral fractures.[5] PF-LCP is anatomically pre-contoured to fit the proximal femur (Figs. 1 and 2). There are separate implants for left and right side. Proximal portion is pre-contoured to fit at greater trochanter. There are distal combi-holes of variable length. Proximal hood has 5 holes which take purchase in head and neck of femur (5 mm). Most proximal screw is inserted at an angle of 95°. The second and third screws are inserted at an angle of about 90° in anterior & posterior planes respectively. The fourth screw is inserted at an angle of 120° and the fifth at an angle of 135° which acts as medial buttress screw (preventing varus collapse). The remaining distal

Fig. 2 – Showing PF-LCP applied over bone model.