

A Case of Post Traumatic Comminuted Distal Femoral Fracture Internally Fixed Using Locking Compression Condylar Plates

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Abstract: *The LCP condylar plate is used in the management of comminuted distal femoral fractures. 47 year old male patient presented with alleged history of trauma and inability to move the left lower limb and severe pain over the left thigh. X-ray of left thigh was taken which showed a comminuted fracture of distal end of femur classified as type C2 under OTA classification. Patient was treated surgically with locking compression condylar plates placement after satisfactory reduction under C-arm.*

Keywords: distal femur, comminuted fracture, lateral compression plate

1. Introduction

Fractures of the distal femur are complex injuries which produce significant long term disability. Distal femoral fractures constitute to about 4 to 6% of all the femoral fractures¹. Both high-energy trauma or low-energy trauma can cause distal femur fractures. High-energy trauma such as motor vehicle accidents, sports, and pedestrian accidents are more common in men around 15-50 years of age, whereas low-energy trauma such as falls from a standing height, at home are more common in women around 50 years of age².

Condylar locking compression plates is used for extra-articular fractures, uni-condylar fractures, supra- and inter-condylar fractures. The advantage of locking plate is even in comminuted fractures, the fixation is stable. This is due to the fact that primary stability of the plate is due to the locking the screw into the plate and is independent of the friction effect as the screw presses the plate³.

2. Case Presentation

47 year old male patient presented with alleged history of trauma and inability to move the left lower limb and severe pain over the left thigh. On examination there was swelling of lower end left thigh and tenderness was present over the lower end of left thigh. Range of movements was painful and restricted. There was no neuro-vascular deficit. X-ray of left thigh was taken which showed a comminuted fracture of distal end of femur classified as type C2 under OTA classification⁴.

3. Surgical Intervention

Anaesthetic fitness was obtained and the patient was posted for locking compression condylar plating of left distal femur. Under general anaesthesia, patient in supine position on the fracture table with left leg on traction. Parts painted and draped. A single straight lateral incision is made along

the lateral side of the thigh, the incision extends across the midpoint of the lateral condyle anterior to fibular collateral ligament, across knee Joint and then gently curves anteriorly to end just distal and lateral to tibial tubercle. Then, the fascia lata is incised, superior geniculate artery is identified and ligated.

The vastus lateralis muscle is then carefully elevated from the intermuscular septum and retracted anteriorly and medially. Condylar plate was placed followed by placement of three types of threaded guide wires of size 7.3mm, 5.0mm and 2.5mm to stabilize the fracture. The 5.0mm drill guide is used to centre the 4.3mm drill bit in the locking portion of the combi-hole. Cannulated 7.3 mm locking screw was used to fix the angulated construction and 7.3mm fully threaded and partially threaded screws were used to compress the plate. Proximal plate was fixed with cortical screws. Reduction was checked under C-arm and found to be satisfactory. Wound closed in layers with sterile dressings.

4. Discussion

The main advantage of a locking compression condylar plates is that it functions as a single unit mechanically as the screw head gets locked in the plate and is therefore very useful in comminuted fractures⁵. The combi-hole in the plate can be used for applying normal screws for compression as well as locking screws in fractures where normal screw purchase is decreased⁵. The screw- plate interface in LCP is very less as the plate need not be contoured and this increases the holding power of the implant⁶.

The LCP condylar plates are more stable as they contain multiple points of contact of the screw with the fixed plate to screws and therefore have a decreased incidence of varus collapse post surgery.

5. Conclusion

The LCP condylar plate plays a very important role in the management of comminuted distal femoral fractures. As these fractures are inherently unstable LCP condylar helps provide stability to these fractures and is an important procedure that can be used to treat comminuted fractures.

6. Case Illustration



Figure 1: (a) Pre-op L thigh AP (b) Pre-op: L thigh-Lat

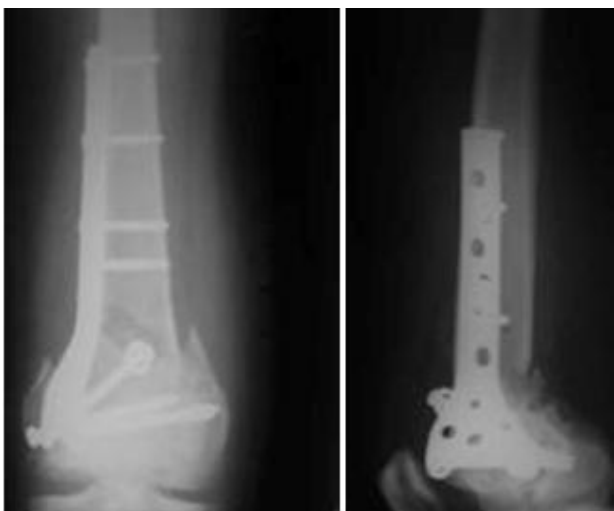


Figure 2: (a) Post-op- L thigh X-ray AP (b) Post-op- L thigh X-ray Lat
Showing the lateral compression plate in situ

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