INTRODUCTION

Locking plates potentially provide high stability in to a degree that a second plate is not required. The increased stability is the result of the difference in the mechanics of conventional plate and locking plate fixation. Stability is maintained at the angular stable screw plate interface. Because the screws are locked to the plate, it is difficult for one screw to pull out or fail unless all adjacent screws fail. The increase in stability provided by locking plates is most helpful to surgeons treating a fracture in poor-quality bone, a comminuted bi- or tri-fragmentary fracture, or an unstable fracture pattern like comminuted fractures, fracture with nonunion, peri-prosthetic fracture, metaphyseal fractures and fractures in osteoporotic bones were chosen for LCP fixation. All the fractures were fixed with LCPs taking care to protect the periosteal blood supply. Under regional or general anesthesia, involved leg was prepared and draped. Tourniquet was routinely applied but inflated only when necessary. Bone grafting was done in old ununited fractures and early range of motion exercises was started in stable fixation. Any associated medical problems were taken care before patient is taken for operation. SEX: No. of cases MALE 24(80%) FEMALE 6(20%) TOTAL 30(100%) MODE OF TRAUMA RTA 23(77%) FALL 7(23%) TOTAL 30(100%) In fracture of femur a lateral incision was made, in fractures of tibia lateral incision for proximal end and lateral and medial for distal end, fracture site exposed. Fragments were first reduced and hold with K-wires. Reductions were achieved and a LCP plate was applied. Locking screw applied in distal metaphyseal portion & proximal diaphysis. K-wires used for holding the fragments were removed. In cases where LISS technique was also used for supracondylar femur, proximal and distal tibia fractures. Operations were performed directly by a consultant orthopedic trauma surgeon or under their immediate supervision. The LCP was used as a bridging construct across the diaphyseal—metaphyseal fracture. Where appropriate, articular

MATERIAL AND METHODS

A prospective study was conducted in our hospital for fracture of long bones of lower limbs after an informed consent. This study was conducted with due emphasis for clinical observation and analysis of results after surgical management for role of locking compression plating in fracture of long bones. All patients were evaluated clinically and radiographically at the time of admission. Fracture patterns like comminuted fractures, fracture with nonunion, peri-prosthetic fracture, metaphyseal fractures and fractures in osteoporotic bones were chosen for LCP fixation. All the fractures were fixed with LCPs taking care to protect the periosteal blood supply. Under regional or general anesthesia, involved leg was prepared and draped. Tourniquet was routinely applied but inflated only when necessary. Bone grafting was done in old ununited fractures and early range of motion exercises was started in stable fixation. Any associated medical problems were taken care before patient is taken for operation. SEX: No. of cases MALE 24(80%) FEMALE 6(20%) TOTAL 30(100%) MODE OF TRAUMA RTA 23(77%) FALL AT HOME 7(23%) TOTAL 30(100%) In fracture of femur a lateral incision was made, in fractures of tibia lateral incision for proximal end and lateral and medial for distal end, fracture site exposed. Fragments were first reduced and hold with K-wires. Reductions were achieved and a LCP plate was applied. Locking screw applied in distal metaphyseal portion & proximal diaphysis. K-wires used for holding the fragments were removed. In cases where LISS technique was also used for supracondylar femur, proximal and distal tibia fractures. Operations were performed directly by a consultant orthopedic trauma surgeon or under their immediate supervision. The LCP was used as a bridging construct across the diaphyseal—metaphyseal fracture. Where appropriate, articular
fragments were anatomically reduced and rigidly fixed via separate small incisions. Splintage and immobilization was applied as per fixation achieved. After discharge from hospital patient was follow up after 2 weeks for suture removal and wound examination. Than after six weeks patient was assessed clinically and radiologically. Thereafter patient was assessed every four weekly. Full weight bearing was permitted to patient based on radiological evidence of callus formation and For assessment of results of distal femur fracture reduction was done according to modified Mehrotra’s Grading and Scoring was taken likewise Grade I = 3 points; Grade II = 2 points; Grade III = 1 point. Excellent = 21-27 points; Fair = 15-20 points; Poor = 9-14 points.

Majority of the cases 23(77%) were injured due to road traffic accident (RTA) followed by 7 (23%) cases were of fall at home (Table 1).

Majority of the patients (96.7%) started weight bearing within 2-3 months post operatively. In our study 8 cases are of 33-A1, 4 cases of 33-A2, 3cases each of33-A1, 41-A2, 43-A2, 2 cases of 32-A2, 1 case each of 33-A3, 41-A1, 43-A1, C1, 43-B1, 43-C8, 44-A2. In 60 % of cases direct reduction was done and in 40% cases MIPPO was done. Almost 95% of patient allowed weight bearing after 10-12weeks.

Table 3: Comparison of final results.

<table>
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<tr>
<th>AUTHOR</th>
<th>RESULTS</th>
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<tr>
<td>Schtazker &amp; Lambert et al</td>
<td>EXCELLENT/FAIR</td>
</tr>
<tr>
<td>Gupta RK et al</td>
<td>71%(with AO techniques)</td>
</tr>
<tr>
<td>Gajendra R et al</td>
<td>21%(without AO techniques)</td>
</tr>
<tr>
<td>Shrestha D et al</td>
<td>96%</td>
</tr>
<tr>
<td>Our Study</td>
<td>97%</td>
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RESULT: In our study satisfactory results i.e. excellent and fair results were 97% which were comparable with other studies of schtazker & lambert et al59-92%, Gupta RK et al43-96%, Gajendra R et al58-80%, Shrestha D et al60 : 95%. In our study the poor result was 3% which was non-union due to implant failure. Which was comparable to other studies of Gupta RK(C ) et al which was 4%, Gajendra R et al which was 20%, Shrestha D et al which was 5%.

Favourable results of LOCKING COMPRESSION PLATE might be contributed to the fact that Locking compression system provides early weight bearing and good functional status in majority of patients with minimal complication with suitable techniques.

CONCLUSION

We concluded that LCP is the most common and widely used orthopaedics implant for fixation of fracture in long bones, LCP are used by both MIPO and ORIF techniques. The various principles like Brigeing, neutralizing, mechanical, Point fixation and dynamic compression principle are available in LCP and can be used as per requirement.

Locking compression provides:-

- Absolute stability
- Minimal obliteration to blood supply
- Minimal periosteum stripping
- Increased rate of union
- Early range of motion
- Act as internal fixator
- Decrease chances of infections and non-union
- Minimal surgical exposure if done by MIPO

Using MIPO is technically feasible and advantageous, that it minimises soft tissue compromise and devascularisation of the fracture fragments61. The procedure includes three important components: bone reduction (indirect reduction in MIPPO), minimal soft tissue dissection and stabilisation with a long percutaneously inserted plate fixed with a limited number of widespread.

CASE1
REFERENCES


