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A RETROSPECTIVE COHORT STUDY ON FUNCTIONAL OUTCOME OF LOCKING COMPRESSION PLATE OSTEOSYNTHESIS IN DISTAL FEMUR FRACTURES

Orthopaedics

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ABSTRACT

AIMS AND OBJECTIVES: To assess the clinical and radiological outcomes following locking compression plates for distal femur fractures.
Primary Objective: to evaluate the fracture pattern, radiological signs of union. **Secondary Objective:** To evaluate the advantages, disadvantages in term of success rates of fractures union, patient compliance and complications.
MATERIAL AND METHODS: This is a retrospective cohort study done on 55 patients who sustained distal femoral fractures, and are treated in Private hospital in Ernakulam, kerala from dec.2013 to dec.2016. All patients were resuscitated immediately in emergency room and other major systems involvements were ruled out, in case if present we treated appropriately. Primary stabilisation done by external fixators in case of type 3 open fractures, and definitive fixations done using LCP, once soft tissue status improved.
The patients were followed up over a period of 2 years and reviewed successively at 1 month. 3 month, 6 month, 9 month & 2 years. The primary outcome measured were delay in fixation (due to various reasons), ROM, clinical & radiological signs of union, and angular deformity at union. The secondary outcome measured were complications and Neer's outcome scores (at 6 month & 2 years) and the data's were quantified and analysed.
RESULTS: Based on data's collected we found that the nonunion rate in our cohort study is found to be 3.4% (N=2) irrespective of fracture pattern and delayed union is found to be 19 % (N=11). Both the non-unions were open fractures and treated later by bone grafting and exchange of LCP with bone grafting(due to aseptic loosening) with average union time of 36 and 32 weeks respectively.
Out of 11 delayed union, 2 are females and 9 are males, 63 % of cases were open fractures(N=7) and remaining 27% of cases were closed(N=4).The progression of non-union is zero in our study due to secondary intervention.7 cases were treated with bone grafts, 1 case was treated with exchange LCP and bone grafting(aseptic loosening), 2 had infection. Hence implant removal done and limb maintained in external fixator with antibiotic beads and after satisfactory settlement of infection, fixed with LCP and bone grafting, 1 case treated with tricortical bone graft .The average union among delayed union is 24.7 weeks with outcome measured using Neer's score(after 2 years) is excellent for 6, good for 1, fair for 4 with a persistent extensor lag of 10 degree seen in 4 cases may be attributed to prolonged immobilization and loss of compliance to physiotherapy. The delay in definitive fixation of fracture might also have attributed to the delay in union.
CONCLUSION: The evolution of implants for the fixation of distal femur fractures has come a long way and at present, the latest in the armamentarium is the Distal Femur Locking Compression Plate, It provides a sound answer to the age old problems of varus collapse, osteoporotic bone, malunion and nonunion though it does not completely eliminate them. Complications does occur, but if the principles of fixation are properly adhered to with early commencement of rehabilitation, the outcome of Distal Femur Fractures can rather be greatly improved with tremendous decrease in disability adjusted periods of the patient.
LIMITATION: The limitation of our study include
1. As the data is collected retrospectively, the patients with missing data's (like interim radiograph before union) were excluded, making the results of categorical data less precise & biased.
2. Open and closed fractures are not categorised separately.
3. Intra-articular and extra-articular fractures are not categorised separately.
4. Association of delay in fixation with fracture union is not calculated.
5. The data's collected are patients from a single centre & single surgeon and thus the results may not reflect or correspond to the true burden.

KEYWORDS