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A comparative study of internal fixation of forearm fractures Using locking compression plate and dynamic compression plate

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OBJECTIVES

This study has been carried out to evaluate role of locking compression plate (LCP) in treating diaphyseal fractures of forearm bones and compare the results of fracture fixation by using Locking Compression Plate versus Dynamic compression Plate.

METHODOLOGY

A prospective study was done from June 2008 to June 2010, including forty eight patients with fractures of radius and ulna. Forty were male and eight were female. Eleven had radial bone fractures, seven had ulnar bone fracture and thirty had both bones fractures. In Group I (DCP group), twenty four patients were subjected to open reduction and internal fixation of forearm bone fractures with 3.5 mm stainless steel DCP and nonlocking screws. In Group II (LCP group), 24 patients with forearm bone fractures were managed by open reduction and internal fixation using 3.5mm stainless steel LCP and locking head/nonlocking screws. All paients were followed up at monthly interval until union. Average duration of follow up was 14 months. Clinical assessment regarding functional outcome was done at the final follow-up.

RESULTS

There was no nonunion. The mean union time in Group I (DCP group) was 13.67 weeks (range, 8-24 weeks, SD 3.67). Delayed union occurred in one patient in this group. In Group II (LCP group), the mean union time was 16.25 weeks (range, 12-24 weeks, SD 3.14). Delayed union occurred in one patient. Results of functional outcome were based on status of fractures union and range of movement. Excellent & satisfactory results were observed in 87.5% cases in Gp I and 91.67% cases in Gp II. On statistical analysis, there was no significant difference in the mean union time and functional outcome in Gp I and Gp II.

CONCLUSION

Dynamic compression plate and locking compression plate were equally effective in treating diaphyseal fractures of forearm. Bony union had occurred earlier with Dynamic Compression Plate but functional outcome in both the groups had been same at final follow up. Locking plate offers the flexibility of being used as compression plate, as a bridging fixator, or as a system combining both techniques.