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Study on outcome of fracture shaft of the humerus treated non operatively with a functional brace

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Background: Non-operatively treated fractures of the humeral diaphysis have a high rate of union with good functional results. The objective of this study is to find out the outcome of fractures of the humeral diaphysis treated with a functional brace that permits motion of shoulder and elbow joints and progressive use of the injured extremity.

Materials and Methods: This was a descriptive analytical study in patients of 16 years and above with closed fracture shaft of humerus treated with a functional brace that permits the motion of shoulder and elbow joints. The fracture arms were initially stabilized with U slab or hanging cast for an average of 11 days before application of brace. Radiographs were made at each follow-up visit until the fracture union occurred. Angulation at fracture site, motion at shoulder and elbow joint were measured at the time of removal of brace.

Results: One hundred and five out of 108 fractures (97.2%) were united with mean duration of 12.16 weeks (Range, 7.5-19.3 weeks). Radial nerve injury was present in 6 cases (5.5%). Various angulation of less than or equal to 15° was present in 90.9% out of 99 patients, while no angulation was present in 6 cases (5.7%) out of 105 patients. Apex anterior angulation of less than or equal to 10° was present in 100% out of 48 patients, whereas apex posterior angulation of less than or equal to 10° was present in 94.1% out of 51 patients.

Conclusion: Functional bracing for the treatment of fractures of the humeral diaphysis is associated with a high rate of union with nearly normal elbow motion and some restriction of shoulder motion.

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