

Evidence-based algorithm to treat patients with proximal humerus fractures-a prospective study with early clinical and overall performance results

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BACKGROUND

On the basis of patients' demands, bone quality, and fracture type, we developed an evidence-based treatment algorithm for proximal humerus fractures (PHF) that includes all treatment modalities from open reduction and internal fixation, hemiprosthesis, to reverse total shoulder arthroplasty. This study was done to assess its feasibility and early clinical outcome.

MATERIALS AND METHODS

Patients with isolated PHF in 2014 and 2015 were included in this prospective study. The quality of life (EQ-5D) and the level of autonomy before injury were recorded. The fractures were classified and local bone quality was measured. When possible, patients were treated according to the algorithm. Radiographic and clinical follow-up-Constant score, subjective shoulder value, and EQ-5D-took place after 3 months and 1 year. The rate of unplanned surgery was analyzed.

RESULTS

A total of 192 patients (mean age 66 years; 58 male, 134 female) were included. Of these, 160 (83%) were treated according to the algorithm. In total, 132 patients were treated conservatively, 36 with open reduction and internal fixation and 24 with reverse total shoulder arthroplasty or hemiarthroplasty. Generally, the mean EQ-5D before trauma and 1 year after treatment was equal to 0.88 to 0.9 points. After 1 year, the overall mean relative Constant score was 95% and mean subjective shoulder value 84%. Unplanned surgery was necessary in 21 patients.

CONCLUSION

This comprehensive algorithm is designed as a noncompulsory treatment guideline for PHF, which prioritize the patient's demands and biology. The high adherence proves that it is a helpful tool for decision making. Furthermore, this algorithm leads to very satisfying overall results with low complication and revision rates.

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