

Is serial radiological evaluation of one-part proximal humeral fractures necessary?

Matthijs Jacxsens, Jeremias Schmid, Vilijam Zdravkovic, Bernhard Jost & Christian Spross

AIMS

In order to determine whether and for whom serial radiological evaluation is necessary in one-part proximal humerus fractures, we set out to describe the clinical history and predictors of secondary displacement in patients sustaining these injuries.

PATIENTS AND METHODS

Between January 2014 and April 2016, all patients with an isolated, nonoperatively treated one-part proximal humerus fracture were prospectively followed up. Clinical and radiological evaluation took place at less than two, six, 12, and 52 weeks. Fracture configuration, bone quality, and comminution were determined on the initial radiographs. Fracture healing, secondary displacement, and treatment changes were recorded during follow-up.

RESULTS

In 100 patients (59 female, 41 male; mean age 57 years), 91 of the fractures (91%) remained stable. In five of nine patients (55%) with secondary displacement, surgery was recommended. Comminution, present in 23 patients (23%), was identified as a predictor of secondary displacement ($p < 0.001$). Patients' age, sex, fracture configuration, and bone quality were not associated with secondary displacement ($p \geq 0.438$). Nonoperative treatment resulted in a mean absolute Constant score (CS) of 80 (49 to 98), relative CS of 101% (63% to 138%), median subjective shoulder value of 95% (interquartile range (IQR) 90% to 100%), and median EuroQol five-dimensional questionnaire score of 0.89 (IQR 0.80 to 1.00) with bone union in all cases at one-year follow-up.

CONCLUSION

Radiological re-evaluation was only necessary in patients presenting with comminution and may be redundant for 77% of patients with one-part proximal humerus fractures. Nonoperative treatment of one-part proximal humerus fractures remains the mainstay of treatment with a low rate of secondary surgery, a high union rate, and good clinical results. Cite this article: 2019;101-B:1307-1312.

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