

Marginal secondary displacement in distal radius fractures at follow-up – an important predictor for late displacement and malunion

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Background and purpose

Nonoperative treatment with cast and radiographic follow-up is common in distal radius fractures (DRFs). Surgical treatment recommendations are often based on the degree of secondary displacement and functional demands. However, suppose the fracture is within an acceptable radiological range but has a marginal deterioration in alignment between the initial visit and the follow-up. In that case, this may pose a risk for further late displacement and malunion. This study investigated whether marginal secondary displacement within an acceptable radiological range was a predictor of late displacement.

Patients and methods

This study includes a secondary analysis a prospective, multicenter cohort study. We included 165 patients treated nonoperatively with complete follow-up and acceptable alignment at 10-14 days after injury as defined by our protocol. We analyzed and compared radiographs performed after reduction, at 10-14 days after injury and after union at a minimum of 3 months. Logistic regression was used to analyze risk factors for late displacement and malunion.

Results

Marginal secondary displacement (odds ratio, OR 9.7, 95% confidence interval, CI 3.6-28.5), volar comminution (OR 8.8, 95% CI 1.5-73.4), loss of volar hook (OR 6.8, 95% CI 1.6-36.4) and dorsal comminution (OR 2.6, 95% CI 1.1-6.4) were predictors of late displacement. Age and sex were not related to late displacement.

Interpretation

Marginal secondary displacement is an important predictor of late displacement and malunion in DRFs. Clinicians should assess a deterioration in fracture alignment on radiographic follow-up and not unequivocally accept general guidelines on alignment.