

Large metaphyseal volume hemiprotheses for complex fractures of the proximal humerus

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BACKGROUND

Results of hemiarthroplasty after acute complex proximal humerus fractures are controversial. The main problem is the fixation and healing of the greater tuberosity (GT). To address this problem a hemiarthroplasty with a large metaphyseal volume was designed and introduced.

METHODS

Thirty hemiarthroplasties were implanted for acute, complex, proximal humeral fractures in 30 consecutive patients (average age: 63.3 years; range, 41-78). One patient was lost; 2 patients could only be interviewed telephonically. Two patients had to be revised because of secondary displacement of the GT within the first 2 postoperative years. The remaining 25 patients were assessed clinically, radiographically, and with computer tomography (CT) imaging after a mean of 25 months (range, 24-29).

RESULTS

Greater tuberosity healed in situ in 23 patients. In 12 cases, CT documented severe resorption of GT without displacement of a measurable bone fragment and an intact clinical cuff function with a radiographically preserved acromio-humeral distance. The mean Constant score was 59 points (range, 26-81), the mean relative Constant score 75% (range, 31-100). The mean anterior elevation was 117° (range, 45-160). The mean subjective shoulder value was 70% (range, 25-98). In 4 cases (14%), tuberosity dislocation occurred which was associated with an increase of fatty infiltration and poor result.

CONCLUSION

The 2-year results with a large metaphyseal volume fracture-prosthesis showed good to excellent results, with a failure rate of 14%. Substantial resorption of the greater tuberosity was frequent, but was not associated with functional incompetence of the rotator cuff. The overall results obtained justify its continued use.

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