Unreconstructable acute distal humeral fractures and their sequelae treated with distal humeral hemiarthroplasty: a two-year to eleven-year follow-up

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Background: The aim of this study was to describe for the first time the medium to long-term outcome after distal humeral hemiarthroplasty (DHH).

Methods: Twenty-six patients (mean age, 62; range, 29-92 years) treated with DHH for intra-articular distal humeral fractures and its sequelae were studied retrospectively.

Results: Four patients had died and 4 had been revised to total elbow arthroplasty: 2 for periprosthetic fractures and 2 for primary component loosening (all in prostheses without an anterior flange). Six other complications had occurred: ulnar neuritis, 4; stiffness, 1; and wound necrosis, 1. Seventeen patients underwent assessment at a mean of 80 months after surgery. The mean values of the American Shoulder and Elbow Surgeons (ASES) elbow score (pain, 9.93; function, 25; satisfaction, 9.06); Mayo Elbow Performance Score (90); Quick Disabilities of Arm, Shoulder and Hand (19), and EuroQol EQ5D (Index, 0.84; Visual Analog Scale, 80) outcome measures demonstrated good function and satisfaction with little pain. The mean flexion extension arc was 116°. There was no evidence of instability. Radiologic evidence of ulnar wear was seen in 13 patients and may be related to prosthetic design to some extent. Worse wear was associated with a higher ASES pain score, lower satisfaction score, and lower EuroQoL Visual Analog Scale of quality of life. Degree of wear correlates with time after surgery but not with age at the time of surgery.

Conclusion: DHH offers a treatment option for unreconstructable distal humeral fractures and is associated with a good long-term outcome.

Level of evidence: Level IV, Case Series, Treatment Study.

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