Primary Wrist Hemiarthroplasty for Irreparable Distal Radius Fracture in the Independent Elderly

Guillaume Herzberg, MD, PhD1 Marion Burnier, MD1 Antoine Marc, MD1 Yadar Izem, MD1

Wrist Surgery Unit, Herriot Hospital, Lyon, France

Address for correspondence G. Herzberg, MD, PhD, Wrist Surgery Unit, Herriot Hospital, Pavilion T., 5 Place d’Arsonval, 69437-LYON, Cedex 03, France (e-mail: guillaume.herzberg@chu-lyon.fr).

Abstract

Background Volar plating for acute distal radius fractures (DRF) in the elderly has been recommended. Some studies have suggested that open reduction with internal fixation (ORIF) in this situation results in frequent complications. Our purposes were to provide a definition of irreparable DRF in independent elderly patients and to review the results of a preliminary retrospective series of wrist hemiarthroplasty (WHA) in this patient population.

Materials Between 2011 and 2014, 11 consecutive independent elderly patients (12 wrists) with irreparable intra-articular DRF were treated with primary WHA at the acute stage. A resection of the ulnar head was associated in nine wrists. A total of 11 wrists with more than 2 years of follow-up form the basis of this paper.

Description of Technique The approach was dorsal longitudinal. An osteotome longitudinally entered the dorsal aspect of the fracture medial to the Lister tubercle. Two thick osteoperiosteal flaps were elevated radially and ulnarily in a fashion similar to opening a book. The distal radius articular surface was excised. The implant was pressed into the radial canal with attention to restoring distal radius length. The two osteoperiosteal flaps were brought back together and sutured so as to close, again like a book, the osseous and soft tissues around the implant.

Results At mean follow-up of 30 months, average visual analog scale (VAS) pain was 1/10. Mean QuickDASH (Disabilities of the Arm, Shoulder and Hand) score was 32, and mean Patient-Rated Wrist Evaluation (PRWE) score was 24. Mean forearm rotation arc was 151°. Mean active flexion-extension arc was 60°. Mean active extension was 34°. Mean grip strength was 14 kg (64% of contralateral wrist). Mean Lyon wrist score was 73%. Bone healing around the implants was satisfactory in all but one case.

Conclusions Our data suggest that treatment of irreparable DRF in the independent elderly patient with a bone-preserving WHA may be a viable option. Longer-term follow-up and comparative studies are needed to confirm the validity of this concept.

Keywords ► wrist ► distal radius fracture ► arthroplasty ► independent elderly ► elderly

Open reduction and internal fixation (ORIF) with volar plating for acute distal radius fractures (DRF) is widely used, even for elderly patients.1,2 However, some studies have recently questioned its use for DRF in the elderly.3,4 It has been suggested that ORIF fails to confer a clinical benefit and results in frequent complications.3,4

Roux5,6 proposed to treat elderly patients presenting with acute DRF with a wrist hemiarthroplasty (WHA). His preliminary series included six wrists operated on at the acute stage. Vergnenègre,7 using the same implant, reported satisfactory clinical and radiological results in eight patients.