



ORIGINAL ARTICLE

Results after internal fixation of humerus distal fractures in patients aged over 65 years[☆]

L. Serrano-Mateo*, Y. Lopiz, C. León-Serrano, C. García-Fernández, L. López-Durán-Stern, F. Marco

Servicio de Cirugía Ortopédica y Traumatología, Hospital Universitario Clínico San Carlos, Madrid, Spain

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KEYWORDS

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Abstract

Introduction and objective: Distal humerus fractures in the elderly frequently associated with poor bone quality and comminution, making it harder to achieve proper osteosynthesis. Our aim is to evaluate the radiological and functional results of open reduction and internal fixation of these fractures.

Material and methods: Retrospective study of 26 patients treated by open reduction and internal fixation between the years 2005 and 2010. Mean follow-up was 42 months. At final follow-up, a radiography evaluation (Knirk and Jupiter score) and clinical examination using Mayo Elbow Performance Score and Quick-Disabilities of the Arm, Shoulder and Hand Score was performed. Mean age of the group was 76.8 years (65–89), with 83% of the patients being female. Sixteen patients suffered type C fractures and 8 type A by AO classification. All underwent posterior surgical approach.

Results: Mean elbow flexion reached 118.86°, with a mean extension deficit of 25°. More than 3 quarters (79.1%) of the patients showed 0–1 grade degenerative changes on the x-ray films at final follow-up. Functional results reached an average 19.87 points on Quick-Disabilities of the Arm, Shoulder and Hand Score, and 85 points on Mayo Elbow Performance Score. Non-union occurred in 2 cases: distal humerus in one patient and olecranon osteotomy in another. Ulnar nerve neuropraxia was recorded in 2 cases, and radial nerve in one. All 3 recovered uneventfully. Revision surgery was required, with 2 patients needing hardware removal and one a new fixation.

Discussion: Treatment by open reduction and internal fixation with plating in elderly people for type A and C distal humerus fractures gives good functional results regarding this population, and thus scarcely disturbs their quality of life.

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* Corresponding author.

E-mail addresses: l.serrano.mateo@gmail.com, serrano.mateo@hotmail.com (L. Serrano-Mateo).

PALABRAS CLAVE

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Resultados de la reducción abierta y osteosíntesis de fracturas de húmero distal en mayores de 65 años**Resumen**

Introducción y objetivo: Las fracturas de húmero distal en ancianos asocian mala calidad ósea y gran conminución, lo que teóricamente dificultaría la síntesis de las mismas. Nuestro objetivo es evaluar los resultados radiológicos y funcionales del tratamiento mediante reducción abierta y fijación interna de estas fracturas.

Material y métodos: Estudio retrospectivo entre los años 2005-2010 de 26 pacientes tratados mediante reducción abierta y fijación interna. Seguimiento medio de 42 meses. Al finalizar el mismo se realizó una valoración radiográfica (Knirk and Jupiter scale) y funcional mediante las escalas Mayo Elbow Performance Score y Quick-Disabilities of the Arm, Shoulder and Hand Score. La edad media fue de 76,8 años (65-89) siendo el 83% mujeres. Se encontraron 16 pacientes con fractura tipo C y 8 tipo A (según la AO). Todos fueron tratados mediante abordaje posterior.

Resultados: La flexión media fue de 118,86° con un déficit de extensión medio de 25°. El 79,1% de los pacientes presentaban un grado 0-1 de artrosis. La media obtenida en las escalas funcionales fue: Quick-Disabilities of the Arm, Shoulder and Hand Score: 19,87; Mayo Elbow Performance Score: 85. Encontramos 2 casos de pseudoartrosis: una de húmero distal y otra de la osteotomía del olécranon. Hallamos 2 casos de neuroapraxias cubitales y una radial que se recuperaron sin secuelas. Hubo 3 reintervenciones: 2 retiradas de material y un caso de nueva osteosíntesis.

Discusión: El tratamiento con reducción abierta y osteosíntesis con placa para las fracturas tipo A y C de húmero distal en ancianos proporciona unos resultados funcionales satisfactorios para las demandas de este tipo de paciente, lo que altera escasamente la calidad de vida percibida por los mismos.

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Introduction

Fractures of the distal humerus present an incidence of 5.7 per 100,000 people/year distributed in a bimodal form (young people as a result of high-energy traumatism and a second peak in elderly women, with osteoporotic bone, secondary to low-energy traumatism). The latest epidemiological data show a considerable increase of this type of fractures in patients aged over 65 years in the last decade.¹

There is a controversy over what the ideal treatment to follow in this type of fractures in the elderly. Added to the greater complexity from the comminution associated with them is the problem of fixation of osteosynthesis material in a bone with its altered biomechanical and biological characteristics, which encourages implant failure and alters the process of consolidation. In many occasions, this makes it necessary to have a greater period of joint immobilization after fracture fixation, with the functional repercussions that involves. All of this has made the treatment of these fractures the object of debate in the literature, with opposing therapeutic attitudes that vary from conservative treatment to open reduction or elbow arthroplasty.^{2,3}

The objective of this study was to analyze the functional and X-ray results, along with the complications associated, of open reduction and osteosynthesis with internal plating for this type of fractures in patients aged more than 65 years.

Material and methods**Study population**

We performed a retrospective study on the patients who had suffered distal humerus fracture (supracondylar and supra-intercondylar humerus) in the period 2005–2010 in our center. The criteria for inclusion were: patients aged more than 65 years with this type of fracture treated using internal fixation. There were 26 patients who fulfilled these criteria. Twenty-four of the 26 patients were located by telephone and given appointments to receive an X-ray and functional assessment. The 2 patients lost to follow-up were 2 deaths due to causes unrelated to the fracture. Mean follow-up up to the final interview was 42 months (from 15 months to 7 years). Mean patient age was 76.8 years (65–89) and 83% of the patients were women.

Of the 24 patients included in the study, we found 16 cases of intra-articular fractures (Type 13 C1–C3 using the AO classification) and 8 cases of extra-articular fractures (Type 13 A1–A3).

The lesions were caused by own-height falls in all the cases. In 21 of the cases, the fractures were isolated humerus fractures. In 3 cases, there were associated lesions: fracture of the ipsilateral radial head, the ipsilateral coronoid, and the ipsilateral Galeazzi. All cases were closed fractures.

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