



Original Article

Posterior four-part fracture-dislocations of the proximal humerus: clinical and functional evaluation of osteosynthesis treatment[☆]



Carla Teresa Barbosa de Oliveira^{a,*}, Elpídio da Graça^a, Vânia Aparecida Fanelli^b

^a Universidade de Ribeirão Preto, Ribeirão Preto, SP, Brazil

^b Clínica Ortohealth, Ribeirão Preto, SP, Brazil

ARTICLE INFO

Article history:

Received 1 February 2017

Accepted 6 April 2017

Available online 5 April 2018

Keywords:

Humeral fractures

Shoulder dislocation

Internal fracture fixation

ABSTRACT

Objective: To evaluate patients diagnosed with posterior four-part fracture-dislocations of the proximal humerus, that were surgically treated with osteosynthesis, regarding their clinical and functional outcomes.

Methods: A prospective observational study of eight patients from the same hospital institution in the interior of São Paulo State (Brazil), through individual interviews using the UCLA, DASH, and Constant international scores. The active movements included in the scores plus the range of motion of the affected and non-affected limb were measured. The affected shoulder's radiographs were requested to verify bone conditions and the fixation of the osteosynthesis.

Results: The rating of eight patients by the international scores indicated that seven of the eight patients presented good clinical and functional evolution of the affected limb; this represents 87.5% of the evaluated individuals.

Conclusion: Surgical treatment with osteosynthesis performed during the acute period (<four weeks) leads to good results in most cases.

© 2017 Sociedade Brasileira de Ortopedia e Traumatologia. Published by Elsevier Editora Ltda. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Fraturas-luxações posteriores do úmero proximal em quatro partes: avaliação clínico-funcional do tratamento por osteossíntese

RESUMO

Objetivo: Avaliar os pacientes com diagnóstico de fratura-luxação posterior da extremidade proximal do úmero em quatro partes que foram tratados cirurgicamente com osteossíntese, do ponto de vista clínico e funcional.

Palavras-chave:

Fraturas do úmero

Luxação do ombro

Fixação interna de fraturas

[☆] Study conducted at Hospital Santa Lydia, Ribeirão Preto, SP, Brazil.

* Corresponding author.

E-mail: carla.teresa@hotmail.com (C.T. Oliveira).

<https://doi.org/10.1016/j.rboe.2018.03.010>

2255-4971/© 2017 Sociedade Brasileira de Ortopedia e Traumatologia. Published by Elsevier Editora Ltda. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Métodos: Estudo observacional prospectivo de oito pacientes de um mesmo serviço de ortopedia e traumatologia do interior do Estado de São Paulo, por meio de entrevistas individuais, com os scores internacionais de UCLA, DASH e Constant. Mediram-se os movimentos ativos incluídos nos scores e a amplitude de movimentos do membro acometido e do não acometido. Solicitaram-se radiografias do ombro acometido para verificar as condições ósseas e de fixação dos materiais de síntese.

Resultados: A avaliação de oito pacientes por meio dos scores usados indicou que sete apresentaram uma boa evolução clínico-funcional do membro acometido, ou seja, 87,5% dos avaliados.

Conclusão: O tratamento cirúrgico com osteossínteses feito no período agudo (< quatro semanas) apresenta bons resultados na maioria dos casos.

© 2017 Sociedade Brasileira de Ortopedia e Traumatologia. Publicado por Elsevier Editora Ltda. Este é um artigo Open Access sob uma licença CC BY-NC-ND (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Introduction

The shoulder joint is prone to dislocation due to its anatomical structure and its biomechanics, which allow an extensive range of movement.¹ It is believed that, among the major joints of the human body, the shoulder suffers most dislocations, with an incidence of 8.2 to 23.9 per 100,000 inhabitants.²

According to Cooke and Hackney,³ of all dislocations, 4% are posterior and only 1% are associated with fractures. Fractures of the proximal humerus account for 4% to 10% of all fractures; the most common trauma mechanism is a fall from the patient's own height.⁴

Posterior fracture-dislocation of the shoulder (PFDS) is an uncommon orthopedic entity,⁵⁻¹⁰ and bilateral PFDS is even rarer, initially described by Mynther in 1902.^{5,11,12} The most frequent causes described in the literature are epilepsy, extreme trauma, and electric shock, hence it is known as triple E syndrome. The imbalance of muscle strength between the medial and lateral rotator groups accounts for the trauma mechanism, attributed to adduction and medial rotation (MR) of the affected limb.^{5,13} In addition to the high-energy trauma, the intense muscle contraction forces the humeral head against the glenoid edge, causing fracture with possible comminution.⁵

The infrequent diagnosis of PFDS and its non-specific symptoms, such as pain and limitation of movement with the limb in MR and adduction, contribute to the underdiagnosis and delayed treatment of this condition. This may increase the number of complications, including osteonecrosis and collapse of the humeral head, inverted Hill-Sachs injury, posterior instability, and the inevitable arthrosis.⁶ The diagnosis of PFDS can be made through imaging tests, such as shoulder radiographs, in anteroposterior, scapular, and especially lateral axillary views.¹⁴

Moreover, dislocation and PFDS have been described since the last century, but to date, the literature features few articles with a sufficient numbers of cases.¹⁵

In the present study, the authors evaluated patients diagnosed with PFDS classified according to Neer as four-part fractures, that were surgically treated with osteosynthesis material, all of whom were followed-up by the same surgeon

at an orthopedics and traumatology unit in the interior of São Paulo State (Brazil).

Material and methods

Between July 2001 and June 2013, eight patients were diagnosed with posterior fracture of the proximal humerus, classified as four-part fractures by the Neer classification. Posterior fracture-dislocations of the proximal humerus in three or less parts, anterior fracture-dislocation, and posterior four-part fracture-dislocation of the proximal humerus treated conservatively or with arthroplasty were not included. Patients were diagnosed and treated by the staff of an orthopedics and traumatology unit in the interior of São Paulo, State (Brazil), and are currently in outpatient follow-up. Eight shoulders were treated in eight patients (seven males and one female), with mean age of 47 years (range: 37-59). Five patients reported motorcycle accident as cause of the injury, one reported seizure crisis, and two reported electric shock. Four patients presented injury to the dominant limb, and four on the non-dominant side (Table 1). All patients in the study were diagnosed and treated in the acute phase (up to four weeks after the event), Δt of 11.5 days (range: 1-28 days). Five patients presented injuries associated with blunt force trauma in the contralateral hand, compound fracture of ipsilateral leg bones, contralateral patellar fracture and ipsilateral third-finger fracture, and posterior contralateral shoulder dislocation.

For all eight patients, radiographs of the affected shoulder were made in anteroposterior (AP; Fig. 1), scapular profile (P; Fig. 2), and lateral axillary views (Fig. 3); in four cases, computed tomography (CT) scans were performed (Fig. 4A and B).

Patients were treated through open surgery and internal fixation with osteosynthesis. In one patient, Ethibond sutures were used, and in the other, fixation with Kirschner wire (KW) and securing sutures were used. Six shoulders were secured with locking plate (LP) and screws associated with securing sutures (Fig. 5A-C). All patients were immobilized with a lateral rotation (LR) thoraco brachial (TB) plaster cast for 45 days, followed by outpatient and radiological follow-up. No patient evolved with acute complications. Four patients underwent

Download English Version:

<https://daneshyari.com/en/article/8599787>

Download Persian Version:

<https://daneshyari.com/article/8599787>

[Daneshyari.com](https://daneshyari.com)