Humerus fracture in an elder patient without movement disability. A case report

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Abstract

A 75-year-old male presented to the emergency department of a local rural health center complaining of severe right shoulder pain. The patient reported a fall while he was walking a year ago. Due to COVID-19 pandemic he had an x-ray at a private medical diagnostic imaging center but he did not have his x-ray explained by a hospital doctor or his general practitioner. He reported pain and movement disability only for the first 10 days after the fall and that he had full strength recovery after two weeks without sling immobilization or physiotherapy. There are several strategies for the treatment of humeral fractures especially for the elderly, without any recommendations to follow an evidence specific procedure.

Introduction

Humerus fractures are common osteoporotic fractures in the elderly [1] and the majority of them are non-operatively managed [1]. Bone mass, movement ability and the patients’ medical history need to be assessed [1]. A good outcome predictor is patients’ movement ability [1]. Due to the unclear evidence-based treatment of choice, the surgeon should consider the comfort level with the specific procedures in order to choose [1].

The incidence of humerus fractures is 6% [2]. The majority of the patients are female over 50 years old [2]. The anatomy of the area helps stabilizing the shoulder due to tendons that produce reliable deforming forces on bone fragments [3]. A displacement greater than 1 cm can affect movement ability and proper muscle tension [4,5]. The axillary and suprascapular nerve are most often injured [6].

A classification for humerus fractures (Neer Classification) divides the area of humerus bone in 4 sections and is a helpful tool for management and diagnosis [7]. A fragments’ displacement greater than 1 cm creating an angle 45° with the vertical axon of humerus bone is considered important [8].

Case presentation

A 75-year-old man with a medical history of hypertension visited the emergency department of our rural health center because he felt pain in the right shoulder. He reported a fall while he was walking a year ago. After the fall he felt severe pain and movement disability only for the first two weeks. He never had a bone density test to evaluate osteoporosis and assess the risk of bone fracture. Following the accident, he did not wear a sling to immobilize his shoulder and he was not examined by a physician or a physiotherapist. The past x-rays showed right humerus fracture while the present did...
not. There was a full recovery without any special treatment or medical advice. The patient reported that due to COVID-19 pandemic he did not visit a medical center or other primary care setting to seek medical advice. Because of the recurrence of the pain we recommended bone density testing for osteoporosis evaluation and we referred the patient to an orthopedic doctor specialized in shoulder pain rehabilitation but hedenied.

There are not specific recommendations for humerus fracture treatment especially in elder patients. There is a great debate whether patients may profit from surgical or conservative treatment in this type of fractures. This unique case reports there was no fragment displacement, the patient experienced no severe pain or movement disability two weeks after the fall. Conservative treatment can be more effective in older patients and may be cost effective for health systems.

Discussion

The Health Technology Assessment (HTA), for measuring the effectiveness of humerus treatment revealed that surgical treatment was not associated with better outcome for non displaced humerus fractures [9]. In addition, Launonen et al., report not important benefit of surgical treatment compared to conservative [10]. A systematic review by Bek et al., 2018 [11] concluded to similar findings. In a study of 30 patients, 40% of humerus fractures were linked to cuff tears [12]. Functional loss follows rotator cuff tears [13].

Following surgical fixation of humerus fractures there is no significant difference regarding the different age groups of the patients [14-16]. A study showed that more important is the social independence before the fracture [17]. A Cochrane review [18] reports that there is insufficient evidence to provide individual recommendations for humerus fractures proper treatment. In general, non displaced fractures, difficult surgical patients and social independent patients are treated conservatively [1]. Around 50% of all humerus fractures may be conservatively treated because there are no displaced fragments [19]. Few studies reported controversial results about the proper treatment and outcomes regarding to humerus [20-22]. This underlines the need for more well-designed cost-effectiveness studies [9]. Instead of prolonged hospital stays, home care and short time stays in home is preferred for the elderly in contrast to younger population. Rehabilitation costs may be a higher priority [9]. It is worth noting that the amount of high cost fracture surgery is rising despite the absence of scientific effectiveness [9]. A British study showed that a great amount of resources could be saved if non-operative treatment is chosen instead [23]. However, over the past decade, most of older adults with proximal humerus fractures continue to receive non operative treatment [24].

In conclusion, low risk surgical patients with displaced humerus fracture, are good candidates for surgical repair. On the other hand, in elderly patients without displaced fragment of humerus fracture conservative treatment is more cost effective.

Further studies in this field will contribute to conduct specific recommendations for proper management of humerus fractures.

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References


