



International Journal of Case Reports in Orthopaedics

E-ISSN: 2707-8353

P-ISSN: 2707-8345

IJCRO 2021; 3(2): 100-102

Received: 20-06-2021

Accepted: 22-07-2021

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Bilateral proximal humerus fractures managed by two different surgical fixations: A case report

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DOI: <https://doi.org/10.22271/27078345.2021.v3.i2b.75>

Abstract

Proximal humerus fractures are considered the most common of all humerus fractures, they constitute 5% of all bone fractures. However, bilateral proximal humerus fractures in patients younger than 65 years of age are rare to happen according to the literature. In this report, we present a 49 years old male, who was involved in a pedestrian accident, developed bilateral proximal humerus fractures, treated by two different surgical fixations “based on the type of fracture”. Bilateral proximal humerus fractures are rare presentation, and often found in older people. Therefore, Surgical option by Open reduction internal fixation (ORIF) is considered the most preferred option of treatment. Other options include prosthetic replacement or conservative treatment, which are ideal for certain types of fractures and people. Our aim of this study is to share the experience of our treatment plan, as well as to give an idea about the types of possible fractures that can happen with this kind of rare presentation.

Keywords: Bilateral, proximal, humerus, case report, ORIF

Introductions

Proximal humerus fractures have been increased recently among people over 65 years of age, who are known to have osteoporotic bone disease ^[1]. Moreover, Proximal humerus fractures are the most common of all humerus fracture, they constitute 5% of all fractures ^[2].

It has been found that Females are more likely to experience this kind of fracture after a low energy fall ^[3]. The mechanism of injury has been commonly reported as a fall on outstretched upper extremity from a standing height ^[2].

However, bilateral proximal humerus fractures in people younger than 65 years of age are rare to happen according to the literature ^[4]. Conservative management has been suggested in some studies, yet surgical fixation was the most preferred treatment option₄.

Our aim of this case report is to share the kind of fractures in Bilateral proximal humerus fractures and type of surgical fixations that can be achieved in this rare presentation.

Case Report

Our report presents a 49-years-old male, who is known to have a type 2 diabetes, who was involved in a pedestrian accident. Patient presented to our emergency room after a loss of consciousness at the scene, with bilateral arms held closely to his chest and complains of pain over his bilateral shoulder.

At the beginning, ATLS protocol has been applied, and the Patient was vitally stable. There was an ecchymosis bilaterally in the anterolateral side of his shoulder with an intact skin, more obvious in his right shoulder, with a painful passive range of motion. A careful neurovascular examination was performed with unremarkable findings.

Radiographs were obtained and showed bilateral proximal humerus fracture. On the right side, humerus showed three parts “comminuted” fracture, greater tuberosity and shaft were displaced with respect to the lesser tuberosity and articular surface which remained together. On the left side, the humerus radiograph showed two parts fracture that involved the greater tuberosity only.

Patient has been admitted under the care of our orthopedic department and planned for surgical fixation. The right side proximal humerus fracture was fixed by a Philos plate with locking screws [Figure 1]. However, the Left side proximal humerus fixed by using 3 cannulated partial threaded cancellous screws [Figure 2].



Fig 1: Right side proximal humerus showed 3 parts fractures, fixed by a Philos plate with locking screws.



Fig 2: Left side proximal humerus showed 2 parts fractures, fixed by 3 cannulated partial threaded cancellous screws.

Discussion

The Neer classification for proximal humerus is considered the most frequently used classification along with AO classification. It divides the proximal humerus based on the anatomical relationships of 4 parts: greater tuberosity, lesser tuberosity, articular surface, shaft [1].

This classification helps the surgeon in choosing the appropriate surgical option for the patient. Minimally displaced one-part fracture is usually treated by conservative treatment with sling immobilization. However, open reduction and internal fixation (ORIF) is indicated in all Two- part fractures, except lesser tuberosity is treated by closed reduction unless if it is displaced and blocks internal rotation.

Three and four-part fractures depend on the good quality of bone and age of the patient. Younger patients should have a trial of ORIF by plate and screws. However, a prosthetic replacement (total shoulder arthroplasty, shoulder hemiarthroplasty, reverse total shoulder arthroplasty) is suggested in elderly patients [2].

In 2016, Ruy E Rodriguez-Corlay *et al* suggested that a conservative treatment of displaced proximal humerus fracture is still a good option even in a bilateral presentation [5]. In 2019, Maalouly *et al* reported a similar case report with a surgical fixation by ORIF for bilateral comminuted proximal humerus fractures [6].

Conclusion

Bilateral proximal humerus fractures are rare presentation, and often found in older people. The Surgical option using ORIF is considered the most preferred option of treatment. Other options include prosthetic replacement or conservative treatment, which are ideal for certain types of fractures and people.

Conflicts of interest

- The authors declare that there is no conflict of interest regarding the publication of this paper.
- The authors have obtained the patient's informed written consent for print and electronic publication of this case report.
- The case report did not need any financial support.
- All authors have contributed to the study in all aspects.

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