

Non-Traumatic Humerus Fracture Treated with Internal Fixation: A Case Report

Manmatha Nayak¹, Nirmal Chandra Mohapatra¹, Rajesh Rana¹

Abstract

Non-traumatic humerus fractures, particularly those occurring spontaneously in the mid to distal third of the humeral diaphysis, are rare and often associated with throwing motions. This case report describes a 22-year-old male who presented with a painful swelling and deformity in the arm following a cricket ball throw. Radiographic examination revealed a spiral fracture at the middle and distal third junction of the humerus. The patient underwent internal fixation using a posterior triceps splitting approach, resulting in excellent outcomes with no malunion or cosmetic deformity. This report highlights the importance of internal fixation in managing non-traumatic humerus fractures to ensure optimal functional and aesthetic results.

Keywords: Non-traumatic humerus fracture, Internal fixation, Spiral fracture, Throwing motion

Introduction

Most humeral shaft fractures are caused by a traumatic event. Non traumatic humerus fracture is a rare fracture pattern characterized by a spontaneous fracture of the mid to distal third of the humeral diaphysis. This fracture also called throwers fracture first described by Wilmoth in 1930 [1]. Nontraumatic upper extremity fractures related to throwing motions are reported less frequently in the literature. The most commonly proposed mechanism is an excessive torque during the cocking and acceleration phases of the throwing motion [2]. Most of nontraumatic humerus fractures were treated conservatively here we are describing a case treated with internal fixation with excellent outcome.

Case Report

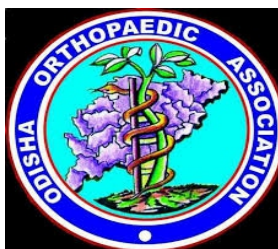
A 22-year-old male student presented to our emergency department with painful swelling and deformity over arm. He had history of throwing cricket ball. On inspection his arm was swollen with visible angular deformity. On palpation there was a step and crepitus on movement. Active movement of affected limb was painful and passive

movement of elbow and shoulder was full. No distal neurovascular deficit, active finger movement was present.

X-ray of the affected arm done showed a spiral fracture of middle and distal third junction (Figure 1). POP slab was applied and patient was admitted. Routine blood investigation was done and patient was planned for internal fixation of fracture. Patient was lied down on left lateral position under regional anaesthesia. Through Posterior triceps splitting approach fracture site was identified lag screw applied followed by fixation with extraarticular plate. Range of movement exercise started immediately suture removal done after 2 weeks. Patient was followed up after 6 weeks and 3 months (Figure 2 and 3).

Discussion

Fractures of the humerus in young adults are typically the result of high-energy direct trauma. Fracture of the humerus from an overarm throw occurs rarely [3]. Thrower's fractures are more common in recreational throwers because of unsynchronised muscular activity and uncoordinated throwing styles [4]. Amateur players tend to activate all the muscles of arm for power in an unsynchronised inappropriate manner, whereas professionals selectively activate arm muscles in a well conditioned and well synchronised manner [5]. Most of the fracture are treated conservatively in literature [6]. Following this treatment some were presented with



¹Department of Orthopaedics, SCB Medical College, Cuttack, Odisha, India.

Address of Correspondence

Dr. Manmatha Nayak,
Assistant Professor, Department of Orthopaedics,
SCB Medical College, Cuttack, Odisha, India.
E-mail: manmatha0002@gmail.com

Received 17/07/2023; Reviewed 12/08/2023; Accepted 26/11/2023; Published 10/01/2024

© 2024 The Odisha Journal of Orthopaedics and Trauma | Available on www.ojotonline.com | DOI: <https://doi.org/10.13107/ojot.2024.v05i01.053>

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial-Share Alike 4.0 License (<http://creativecommons.org/licenses/by-nc-sa/4.0>) which allows others to remix, tweak, and build upon the work non-commercially as long as appropriate credit is given and the new creation are licensed under the identical terms.



Figure 1: Preoperative radiograph

malunion. In this case we performed internal fixation in order to avoid malunion and cosmetic deformity with excellent outcome.

Conclusion

Non-traumatic humerus fractures, though rare, can occur due to throwing motions. This case report demonstrates the successful internal fixation of a spiral fracture in the mid to distal third of the humerus, resulting in excellent functional and aesthetic outcomes. Internal fixation is crucial for preventing malunion and cosmetic deformity.



Figure 2: 6 weeks post operative radiograph



Figure 2: 12 weeks post operative radiograph

References

1. Wilmoth CL. Recurrent fracture of the humerus due to sudden extreme muscular action. *J Bone Joint Surg.* 1930;12(1):168-169. ENCE
2. Chao SL, Miller M, Teng SW. A mechanism of spiral fracture of the humerus: a report of 129 cases following the throwing of hand grenades. *J Trauma.* 1971;11(7):602-605
3. Tytherleigh-Strong G, Walls N, et al. The epidemiology of humeral shaft fractures. *J Bone Joint Surg (Br)* 1998;80-B:249-53.
4. Kaplan H, Kiral A, Kuskucu M, et al. Report of eight cases of humeral fracture following the throwing of hand grenades. *Arch Orthop Trauma Surg* 1998;117:50-2
5. Sabick MB, Torry MR, Kim YK, et al. Humeral torque in professional baseball pitchers. *Am J Sports Med* 2004;32:892-8.
6. Weseley MS, Barenfeld PA. Ball throwers' fracture of the humerus. Six case reports. *Clin Orthop Relat Res* 1969;64:153-6

Declaration of patient consent: The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his/her consent for his/her images and other clinical information to be reported in the Journal. The patient understands that his/her name and initials will not be published, and due efforts will be made to conceal his/her identity, but anonymity cannot be guaranteed.

Conflict of Interest: NIL
Source of Support: NIL

How to Cite this Article

Nayak N, Mohapatra NC, Rana R | Non-Traumatic Humerus Fracture Treated with Internal Fixation: A Case Report | The Odisha Journal of Orthopaedics and Trauma | January 2024; 05;01: 21-23 | <https://doi.org/10.13107/ojot.2024.v05i01.053>