Scholars Journal of Applied Medical Sciences
Abbreviated Key Title: Sch J App Med Sci
ISSN 2347-954X (Print) | ISSN 2320-6691 (Online)
Journal homepage: www.saspublishers.com

OPEN ACCESS

Orhopedic Surgery

Erecta Dislocation of the Shoulder Joint: About One Case

El Alami Réda*, Jeddi Driss, Boufettal Mouncef, Bassir Reda Allah, Kharmaz Mohammed, Lamrani Moulay Omar, El Bardouni Ahmed, Mahfoud Mustapha, Berrada Mohamed Saleh

Department of Orhopedic Surgery, Ibn Sina Hospital University Mohammed V Rabat, Morocco

DOI: 10.36347/sjams.2019.v07i10.032 | **Received:** 07.10.2019 | **Accepted:** 14.10.2019 | **Published:** 25.10.2019

***Corresponding author:** El Alami Réda

Abstract **Case Report**

Erecta dislocation of the shoulder is an unusual injury, it can be uni or bilateral. We report a case of unilateral erecta dislocation in a young man who fell down during a football game. The patient was admitted to the emergency room with a fixed abducted arm. Vasculo-nervous examination was normal. Radiography confirmed the diagnosis of erecta dislocation. The patient received an orthopedic reduction followed by immobilization elbow to the body. The follow-up showed a UCLA score at 30 points. The aim of our work is to emphasize the rarity of erecta dislocation and to discuss its diagnostic, therapeutic and follow up features.

Keywords: Dislocation, erecta, shoulder.

INTRODUCTION

The traumatic inferior shoulder dislocation is an unusual injury. The incidence is about 1 in 200 (0.5%). The fixed abducted arm above the head so called "hand-up presentation" gave the name “luxatio humeri erecta” to this dislocation. Inferior dislocations of shoulder joint are sorted in two types: the subglenoid dislocation and the true erecta dislocation.

We report a case of erecta dislocation of the shoulder. The aim of our work is to emphasize the rarity of erecta dislocation and to discuss its diagnostic, therapeutic and follow up features.

CASE REPORT

This is a rare case in the department of traumatology and orthopedic surgery of the teaching hospital of Rabat.

A 17-year-old man was admitted to our emergency department after a sports injury on the night of July 30, 2019 at 10:30.

He fell down on his right shoulder after a direct trauma during a football game. He presented with the right arm fixed above the head and pain.

At physical examination, it was not associated with vascular and neurologic injury.

The shoulder radiographs showed a subglenoid inferior dislocation of the shoulder joint.

Under sedation, a closed reduction was performed by axial traction. After reduction, the distal pulses and neurological status were normal. The arm was maintained in a sling for 3 weeks, then the patient was sent to physiotherapy for rehabilitation.

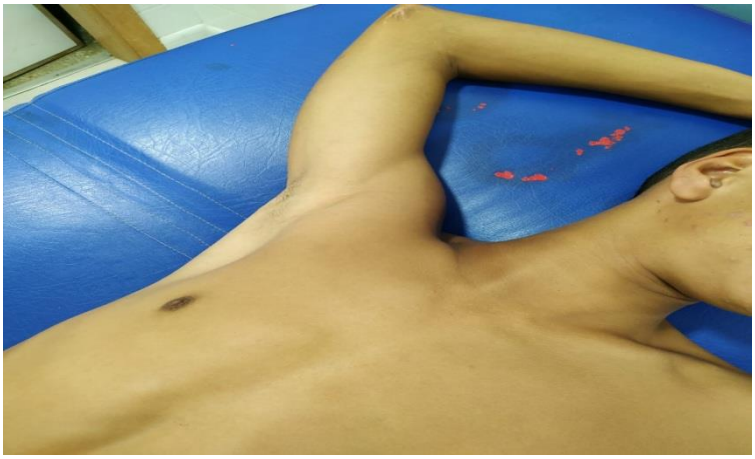

Fig-1: Irreducible attitude of the shoulders in abduction

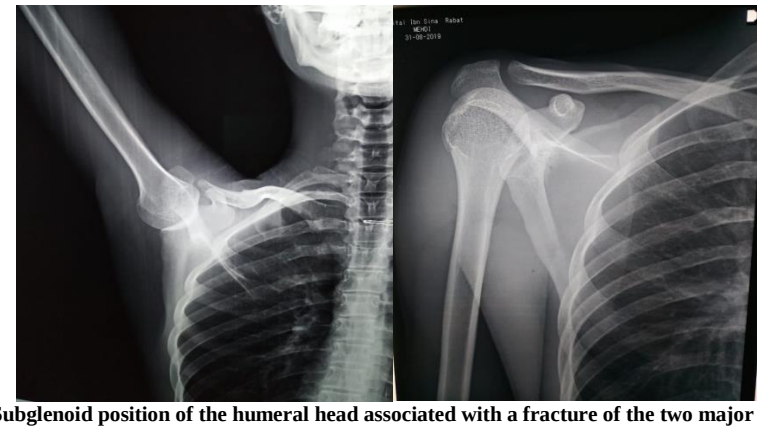

Fig-2: Subglenoid position of the humeral head associated with a fracture of the two major tubercles

DISCUSSION

Erecta dislocation is a relatively rare entity, accounting for only 0.5% of all dislocations of the shoulder [3].

This type of dislocation is commonly called luxatio erecta, which means "erect dislocation" in Latin. This name comes from the typical way in which the arm is usually completely raised and held over the head during the presentation [4-6]. Middeldorpf and Scharm described the first case of Erecta dislocation in 1859 [7-9].

Two main mechanisms of injury were reported by Davids and Talbott in 1990 [10]: a direct mechanism by application of violent abduction forces on abducted arm, in which the acromion process acts as a lever for the axis of the humerus; an indirect mechanism following the application of a heavy overload on an arm in complete abduction.

Gagey *et al.,* have described this mechanism in a study about 32 experimental erecta luxations [11], by a simple elevation and external rotation of the arm. Ligamentous hyperlaxity has been reported in several series [12, 13].

The clinical study of erecta dislocation can be summed up by Stimson's definition [14]: "This remarkable dislocation is characterized by the elevation of the arm above the head, a position from which it can not be lowered without causing great pain.

The physical examination finds a fixed abducted arm, the humeral head is palpated in the axillary hollow, with an emptiness of the glenoid and a modification of the muscular and bony reliefs.

Although the diagnosis can be made clinically, a radiological assessment is necessary to confirm the dislocation and reveal any associated lesions. The frontal radiograph and a true axillary profile show the humeral head projected below the lower pole of the glenoid and a humeral diaphysis always above the horizontal [15].

The experimental study of Gagey *et al.,* [16] described the different anatomopathological lesions of this form through the MRI results of 24 recurrent dislocations. According to this study, the lesion of the lower glenohumeral ligament as well as the adjacent glenoid labrum was constant. Dislocation erecta occurred when the tear of the lower glenohumeral ligament was longitudinal. For dislocation to occur experimentally, in seven out of eight cases, the deep face of the rotator cuff had to be disinserted.

The evolution can be marked by various complications according to the age of the patient [17]; thus, the most common complication before age 45 is recurrence of dislocation. After 45 years, rotator cuff lesion and major tuber fracture are possible. This form is also very likely to cause vasculonervous lesions because of the significant displacement of the humeral head [18, 19]; which imposes a reduction in urgency. Indeed, Relwani et al. described a case of erecta dislocation with axillary artery and brachial plexus lesion in an teenager [20]. Garcia et al. described a case of bilateral erecta dislocation complicated by axillary artery thrombosis requiring anticoagulation [14]. In the Mallon *et al.*, [21] study about 86 cases, axillary nerve involvement was reported in 60% of cases and axillary artery involvement in 3% of cases. Bilateral erecta dislocation was reported by several authors [22, 23].

Conservative treatments gave good results in inferior dislocations of the shoulder joint. Treatment of uncomplicated erecta dislocations is orthopedic [24].

Closed reduction methods 121 included the classic method and the Nho *et al.*, two-step manoeuver. With the classic method, an axial traction was performed on abducted arm with counter traction on the chest. Then, the arm is driven to its normal position.

The two-step manoeuver transforms firstly an inferior dislocation to a real anterior dislocation of the shoulder before reducing it.

According to Nho *et al*., [25], the non-bloody reduction of this dislocation consists in two steps, under minimal analgesia. The maneuver is, according to these authors, to transform the lower dislocation into anterior dislocation, then reduce the humeral head in the glenoid cavity. Thus, the operator places one hand on the diaphysis and the other hand on the medial condyle of the humerus. The hand on the diaphysis applies anterior force and rotation of the humeral head, bringing it back to the anterior position, then the humerus is brought back into adduction and external rotation, reducing the head in the glenoid cavity. Radiological monitoring after reduction is always indicated. This reduction is followed by immobilization, elbow to the body, for three weeks.

Axillary nerve palsy in shoulder inferior dislocations is commonly a neurapraxia lesion, and it recovers in 2 weeks to 3 years. Outcome is linked to the axillary nerve injury type. So, it is important to check the palsy with EMG regular controls.

Functional sensitive and motor rehabilitation is key to ensure a satisfying outcome and recovery [26, 27]. The long-term prognosis is generally favorable.

CONCLUSION

Erecta dislocation of the shoulder is a rare condition. The diagnosis is based on physical examination and confirmed by standard radiography. Because of the significant displacement of the humeral head, vasculonervous complications are frequent. The triad reduction, immobilisation and early rehabilitation is the warranty of / crucial for a good outcome. Surgical stabilization may be considered for recurrent dislocations.

REFERENCES

1. Faur CI, Anglitoiu B, Ungureanu AM. Open anterior glenohumeral dislocation with associated supraspinatus avulsion: A case report. World journal of clinical cases. 2019 Apr 6;7(7):849-854.
2. Kraus N, Hann C, Gerhardt C, Scheibel M. Dynamic instability of the acromioclavicular joint. Obere Extremität. 2018 Dec 1;13(4):279-85.
3. Yao F, Zhang L, Jing J. Luxatio erecta humeri with humeral greater tuberosity fracture and axillary nerve injury. The American journal of emergency medicine. 2018 Oct 1;36(10):1926-e3.
4. Wolf BR, Uribe B, Hettrich CM, Gao Y, Johnson M, MOON Shoulder Group, Kuhn JE, Cox CL, Feely BT, Bishop J, Jones G. Shoulder instability: Interobserver and intraobserver agreement in the assessment of labral tears. Orthopaedic journal of sports medicine. 2018 Sep 3;6(9):2325967118793372.
5. Ngam PI, Hallinan JT, Sia DS. Sequelae of bilateral luxatio erecta in the acute post-reduction period demonstrated by MRI: a case report and literature review. Skeletal radiology. 2019 Mar 1;48(3):467-73.
6. Kapil-Mani KC, Niroula A. Acromio-Clavicular Joint Dislocation Types IV to VI: Does the Outcome with the modified Weaver-Dunn Procedure Justify the Treatment?. Malaysian orthopaedic journal. 2018 Jul;12(2):31-36.
7. Jon R, Davids MD, Richard D. Luxatio erecta humeri. Clin Orthop, 1990;252:145-149.
8. Nakagawa Y, Umegaki S, Sakurai G, Ozaki J, Nakagaki K. Luxation erecta of the shoulder. Journal Shoulder Elbow Surg, 2006;17:110-117.
9. Grate Jr I. Luxatio erecta: a rarely seen, but often missed shoulder dislocation. The American journal of emergency medicine. 2000 May 1;18(3):317-21.
10. Matsumoto K, Ohara A, Yamanaka K, Takigami I, Naganawa T. Luxatio erecta (inferior dislocation of the shoulder): A report of two cases and a review of the literature. Injury Extra. 2005 Oct 1;36(10):450-3.
11. Gagey O, Gagey N, Boisrenoult P, Hue E, Mazas F. Experimental study of dislocations of the scapulohumeral joint. Revue de chirurgie orthopedique et reparatrice de l'appareil moteur. 1993;79(1):13-21.

12. Memahon PJ, Tibone JE, Lee TQ. The inferior band of the glenohumeral ligament: biomechanical proprieties. J Shoulder Elbow Surg. 1998;7(1):467-7.
13. Wen DY. Current concepts in the treatment of anterior shoulder dislocations. The American journal of emergency medicine. 1999 Jul 1;17(4):401-7.
14. Stimson LA. II. Injuries of the Main Blood-Vessels in the Axilla, Caused by Efforts to Reduce Dislocations of the Shoulder. Annals of surgery. 1885 Nov;2(11):369-85.
15. Snyder BK. Luxatio Erecta. J Emerg Med, 2001;20:83–4.
16. Goldstein JR, Eilbert WP. Locked anterior-inferior shoulder subluxation presenting as luxatio erecta. The Journal of emergency medicine. 2004 Oct 1;27(3):245-8.
17. Yanturali S, Aksay E, Holliman CJ, Duman O, Ozen YK. Luxatio erecta: clinical presentation and management in the emergency department. The Journal of emergency medicine. 2005 Jul 1;29(1):85-9.
18. Perron AD, Ingerski MS, Brady WJ, Erling BF, Ullman EA. Acute complications associated with shoulder dislocation at an academic emergency department. The Journal of emergency medicine. 2003 Feb 1;24(2):141-5.
19. Relwani JG, Nikolopoulous I, Turnbull TJ, Turner R, Brooks M. Luxatio erecta in an adolescent with axillary artery and brachial plexus injury. Injury Extra. 2007 Jan 1;38(12):456-8.
20. Garcia R, Ponsky T, Brody F, Long J. Bilateral luxatio erecta complicated by venous thrombosis. Journal of Trauma and Acute Care Surgery. 2006 May 1;60(5):1132-4.
21. Begaz T, Mycyk MB. Luxatio erecta: inferior humeral dislocation. Journal of Emergency Medicine. 2006 Oct 1;31(3):303-4.
22. Kumar KS, O'Rourke S, Pillay JG. Hands up: a case of bilateral inferior shoulder dislocation. Emergency medicine journal. 2001 Sep 1;18(5):404-5.
23. Brady WJ, Knuth CJ, Pirrallo RG. Bilateral inferior glenohumeral dislocation: luxatio erecta, an unusual presentation of a rare disorder. The Journal of emergency medicine. 1995 Jan 1;13(1):37-42.
24. Elsayed S, Hussein A, Konyves A, Jones DG. Bilateral luxatio erecta humeri. Injury extra. 2005 Oct 1;36(10):447-9.
25. Mills LD, Barrows T, Benitez F. Bilateral luxatio erecta. Journal of Emergency Medicine. 2003 Jan 1;24(1):61-3.
26. Nho SJ, Dodson CC, Bardzik KF, Brophy RH, Domb BG, MacGillivray JD. The two-step maneuver for closed reduction of inferior glenohumeral dislocation (luxatio erecta to anterior dislocation to reduction). Journal of orthopaedic trauma. 2006 May 1;20(5):354-7.
27. Barnett AJ, Eastaugh-Waring SJ, Sarangi PP. Delayed presentation of luxatio erecta dislocation of the shoulder. Injury Extra. 2005 Jul 1;36(7):277-9.