



SIMPLE CASE OF BILATERAL ANTERIOR SHOULDER DISLOCATION IN ATHLETE: MECHANISM AND REVIEW OF LITERATURE

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Article Info	ABSTRACT
<p>Received 15/08/2016 Revised 27/08/2016 Accepted 12/09/2016</p> <p>Key words: Glenohumeral, Bilateral, Shoulder, Anterior dislocation.</p>	<p>Bilateral shoulder dislocation are usually posterior type, bilateral anterior shoulder dislocation following trauma is very rare occurrence , which involves very unique type of mechanism of injury. we report case of simple bilateral anterior shoulder dislocation, without fracture in 25 year old male who had fall while running on pointed elbow. From review we conclude that, this type of dislocation require very unique type of mechanism and trauma is most common cause. Early rehabilitation is recommended for making patient more self dependent and functional outcome are same as unilateral dislocation.</p>

INTRODUCTION

The glenohumeral joint is the most mobile joint in the human body. While it has superior mobility compared to other joints, it sacrifices mobility. Shoulder is the most commonly dislocated joint in the body because of its mobility [1]. Anterior dislocation represents 95% of unilateral shoulder dislocation [2]. Bilateral shoulder dislocation are usually posterior type and almost pathogenomic of seizures disorder or electrocution, bilateral anterior shoulder dislocation following trauma is very rare occurrence , which involves very unique type of mechanism of injury [3].

CASE REPORT

A 25 year old male presented in emergency department of Ram Manohar Lohia Combined Hospital (RMLCH), lucknow, INDIA in july 2016 with sudden onset of pain and restriction of movement in both shoulder following trauma. Patient had fall while running, over pointed elbow. There was no history of any medication, alcohol intake or loss of consciousness. There was no history

of diabetes mellitus or seizures in past. On examination patient was well oriented to time, place and person. Both extremities were in the attitude of external rotation and abduction. Shoulder were bilaterally symmetrical but appeared squared. Laterally, the sulcus sign was present together with inability to palpate the greater tuberosity below the acromion on both side. Movements were painfull and restricted on both sides. Neurovascular status was intact. Radiologically antero-posterior view revealed anterior dislocation of bilateral shoulder joint without any associated fracture (figure 1). Closed reduction was done in emergency department, in minor operation theatre, 10 ml of lidocaine was injected in each glenohumeral joint. Each shoulder was reduced one at a time, utilizing Milch technique. Post reduction x-rays were taken which were satisfactory with anatomical reduction of bilateral shoulder joint (figure 2). Both shoulder immobilized with shoulder immobilizer for 2 weeks. Intermittent pendulum movement of upper extremity with strengthening of rotator cuff and deltoid started after 2

weeks, sling was discarded at 4 weeks, followed by full range of movement. Follow-up after 10 weeks showed full range of

movement without pain and any signs of instability of shoulder joint.

Figure 1. x-ray shows bilateral anterior shoulder dislocation



Figure 2. post reduction xray shows anatomical reduction of bilateral shoulder joint.



DISCUSSION

Bilateral shoulder dislocation was first described by Mynter in 1902 in patients in whom excessive muscular contraction occurred as a result of camphor overdose. Unlike the posterior dislocation, the anterior dislocation occurred more commonly following trauma rather than seizures. Simultaneous bilateral anterior shoulder dislocation is a rare condition [4]. The reason why shoulder dislocates after trauma after trauma is that as the arm extends and abducts, impingement of the greater tuberosity on the acromion lever the humeral head out of the glenoid [5]. Moreover the rotator cuff pushes downward the humeral head which is finally displaced anteriorly by the flexors and external rotators which is same mechanism of injury in our case [6].

Besides traumatic causes, bilateral anterior shoulder dislocation can follow hypoglycemic convulsion or epileptic seizure [7,8]. Bilateral anterior dislocation following a seizure may be from the trauma of the shoulder striking the floor after the collapse rather than due to the muscle contractions. Loss of consciousness after the seizure will not allow the patient to react and reflexly protect one of his arm by exposing to the other [9]. Simple bilateral anterior shoulder dislocation without associated fracture are extremely rare [10].

To correctly diagnose glenohumeral dislocation and what its direction is, x-ray have to be produced in two planes before making any attempt at reduction, which preferably should be in the antero-posterior and axillary views. However, producing axillary x-ray is extremely painful for the patient, and it is acceptable to replace this with a scapular(Y) view, at the cost of loss of sensitivity, or if there is some doubt, with a TAC scan on the joint [11].

As soon as the correct diagnosis has been established, the joint reduction needs to be performed as rapidly as possible, given the risk of neurovascular impairment and increased difficulty in the maneuver due to

establishment of muscle contracture. Although rare, the possibility of neurovascular lesion should always be investigated when cases of suspected glenohumeral dislocation arise at emergency, as well as after joint reduction, structures (axillary nerve, musculocutaneous nerve and brachial plexus) may become stretched during the reduction maneuver [12]. Now arises which maneuver, usually it depends on clinician but Milch maneuver is efficient, fast and easily reproducible, promoting the reduction of glenohumeral dislocation in a secure manner. It can also be carried out by one single person after relatively little training or experience and without analgesia drugs, muscle relaxants, anesthesia or sedatives. It also presents better when compared to Kocher's maneuver regarding effectiveness and speed in reducing glenohumeral dislocation. There is no difference in pain level during reduction for both techniques [13].

Closed reduction followed by immobilisation for 3 weeks in bilateral sling is the standard protocol [11]. But bilateral immobilisation of the upper extremities makes the patient dependent and his routine suffers. For this reason some authors recommend the use of upper extremities for personal hygiene and feeding purpose only during the period of immobilization [14]. Others recommend early rehabilitation of the shoulder which is less painful, while continuing immobilisation of the more painful one [4]. Even early rehabilitation of both shoulders has been recommended especially in elderly patients [15]. Surgical intervention is rarely required in simple bilateral anterior dislocation as most of them are reduced closed. Failure of closed reduction, and old missed or neglected dislocation, are indication for open reduction [1].

CONCLUSION

Bilateral anterior shoulder dislocation without fracture following trauma is very rare occurrence. This type of dislocation requires very unique type of mechanism, which

has to be studied more for better explanation and understanding. Trauma is most common cause of simple bilateral anterior dislocation. Early rehabilitation is recommended for making patient more self-dependent and functional outcome are same as unilateral dislocation.

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CONFLICT OF INTEREST:

The authors declare that they have no conflict of interest.

STATEMENT OF HUMAN AND ANIMAL RIGHTS

All procedures performed in human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

REFERENCES

1. Cutts S, Premph M, Drew S. (2009). Anterior shoulder dislocation. *Ann R Coll Surg Engl*, 91, 2-7.
2. Ngim NE, Udorroh EG, Udosen AM. (2006). Acute bilateral anterior shoulder dislocation following domestic assault- case report. *West Afr J Med*, 25(3), 256-57.
3. Yashavantha K, Nalini KB, Prashanth N. (2013). Bilateral traumatic anterior dislocation of shoulder- a rare entity. *Journal of Orthopaedic Case Reports*, 3(1), 23-25.
4. Dunlop CC. (2002). Bilateral anterior shoulder dislocation- a case report and review of the literature. *Acta Orthop Belg*, 68(2), 168-70.
5. Dinopoulos HT, Giannoudis PV, Smith RM, et al. (1999). Bilateral anterior shoulder fracture-dislocation. A case report and review of literature. *Int Orthop*, 23(2), 128-130.
6. Connor-Read L, Bloch B, Brownlow H. (2007). A missed orthopaedic injury following a seizure, a case report. *J Med Case Reports*, (1), 20.
7. Ozcelik A, Dincer M, Cetinkanat. (2006). Recurrent bilateral dislocation of the shoulder due to nocturnal hypoglycemia, a case report. *Diabetes Res Clin Pract*, 71(3), 352-5.
8. Singh S, Kumar S. (2005). Bilateral anterior dislocation shoulder dislocation. A case report. *Eur J Emerg Med*, 12(1), 33-5.
9. Bellazzini MA, Deming DA. (2007). Bilateral anterior shoulder dislocation in a young and healthy man without obvious cause. *Am J Emer Med*, 25(6), 734 e1-3.
10. Rouhani A, Zonooz KA, Aghdam HA. (2010). An unusual cause of bilateral anterior shoulder dislocation. *Pak J Med Sci*, 26(4), 976-77.
11. Silva LP, Sousa CV, Rodrigues E, Alpoim B, Leal M. (2011). Bilateral anterior glenohumeral dislocation. A clinical case. *Res Bras Orthop*, 46(3), 318-20.
12. Wen DY. (1999). Current concept in the treatment of anterior shoulder dislocations. *Am J Med*, 17(4), 401-7.
13. Rezende BDR, Almeida JID, Neto, Sousa UJD, Bomfim LDS, Ferreira MS. (2015). Glenohumeral dislocation. A prospective randomized study comparing spazo and kocher maneuvers. *Acta Ortop Bras*, 23(4), 192-96.
14. Botha AH, Du Toit AB. (2010). Bilateral anterior shoulder dislocation. A case report of this entity. *Sa Orthop J*, 9 2(4), 68-70.
15. Ballesteros R, Benavente P, Bonsfills N, Chacon M, Garcia-Lazaro FJ. (2013). Bilateral anterior shoulder dislocation of the shoulder. Review of seventy cases and proposal of new etiological-mechanical classification. *J Emerg Med*, 44(1), 269-79.