Case Report

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Traumatic bilateral anterior glenohumeral dislocation . Should unsupervised training at local gym be allowed?

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ABSTRACT

The wide range of motion provided by the shoulder complex allows the glenohumeral joint to be used as a stable fulcrum for placing the upper extremity at various positions in three-dimensional space. A consequence of this flexibility, however, is the propensity for the joint to become unstable. Shoulder joint mostly dislocates anteriorly but the bilateral dislocations are of rare occurance. Most of these are posterior. Bilateral anterior dislocations are of rare occurrence and only few cases are reported in English literature which are usually associated with fractures. We report this case of bilateral anterior shoulder dislocation due to hyperextension injury caused due to unsupervised open weight bench pressing without any associated fracture. Closed reduction was done under sedation uneventfully. Unsupervised training at the local gyms should be discouraged and proper equipment should be sought for these fitness training centres to prevent such injuries.

KEY WORDS: Bilateral shoulder dislocation, anterior shoulder dislocation, bilateral anterior shoulder dislocation.

INTRODUCTION

The wide range of motion provided by the shoulder complex allows the glenohumeral joint to be used as a stable fulcrum for placing the upper extremity at various positions in three-dimensional space. A consequence of this flexibility, however, is the propensity for the joint to become unstable. As such, the shoulder is one of the most commonly dislocated joints in the human body, with a reported incidence of 17/100,000 per year. [1,2] The diagnosis and the treatment of glenohumeral instability have been well documented in the history of mankind.

With the recent enthusiasm for recreational and sporting activities, the incidence of glenohumeral instability is increasing. In accordance, the amount of information in the orthopaedic literature regarding this condition has also seen a significant gain. Recent publications have greatly augmented the knowledge based on the diagnosis, treatment, and expected outcome of glenohumeral instability.

Shoulder joint mostly dislocates anteriorly but the bilateral dislocations are of rare occurance. Most of these are posterior, the cause being the seizure episode or the electric shock .Bilateral anterior dislocations are of rare occurrence and only few cases are reported in English literature which are usually associated with fractures. We report this case of bilateral anterior shoulder dislocation due to hyperextension injury caused due to unsupervised open weight bench pressing without any associated fracture.

CASE REPORT

Mr A, aged 28 years came to the emergency department with complaint of pain in bilateral shoulders and inability to move the shoulders following injury. He was working out at local gym and was doing bench presses. This time he used weight more than what he was initially using. After lifting the weight in supine position with arms abducted he tried to keep the rod into the slot. It slipped posteriorly causing hyperextension at both the shoulders resulting in bilateral dislocation.

Clinically both the shoulders were in abduction and external rotation. Normal contour of shoulder was lost and both the humeral heads were palpable anteriorly. No neurovascular deficit was seen. There was no generalised joint laxity. Patient was non-smoker and devoid of any drug influence. X ray bilateral shoulder AP view confirmed our diagnosis. [Figure 1] Closed reduction was done under sedation using Kocher's manveur. Reduction was confirmed with X-rays [Figure 2] and post reduction neurovascular status was normal. Shoulder immobilisers were applied for 3 weeks as per protocol. Patient was followed up on opd basis which was uneventful. Rehabilitation was done as per protocol which included pendulum exercises at 3 weeks followed by passive and active range of motions. At 2 months follow up patient had normal range of motion with no pain. Strict advice was given not to repeat strenuous exercises.

Figure 1. X ray showing bilateral dislocation of shoulders

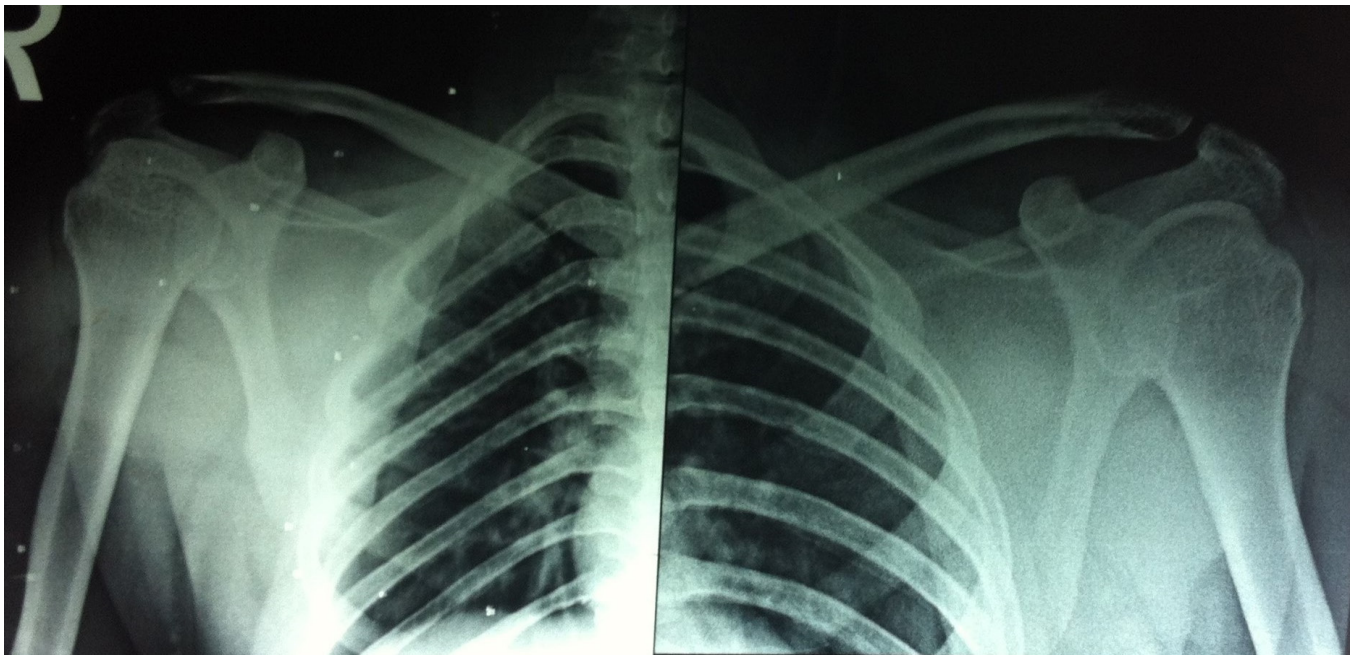

Figure 2. Post reduction X ray

DISCUSSION

The first description of shoulder dislocation is believed to have occurred as early as 3000 BC [3]. In addition, prehistoric drawings from 1200 BC show figures that are extremely similar to a shoulder reduction manoeuvre commonly used today [4]. Detailed description regarding the pathology and treatment of shoulder instability can also be found in the teachings of Hippocrates, who lived around 450 BC [5, 6, and 7].

Bilateral dislocation of shoulder joint due to Camphor overdose was first reported by Page AE et al in 1902. [8] Years passed and in the year 1999, Dinopoulos et al reported 28

cases from the literatures which were reported from almost last 40 years.[9] In 2002 Dunlop et al reported few more cases which were associated with fractures or were missed during the initial evaluation [10] .In 1999 Creswell et al also reported a similar case of bilateral anterior shoulder dislocation in a bench press athlete who used a wide bench and had fatigue due to repeated bench pressings. [11] The author clearly mentioned the need for small benches and need for the safety locks in the pivoting bar. The mechanism of injury in our case is different in that no muscle fatigue was noticed and when the patient lifted the weight he felt it too heavy to complete the repetition. He tried to put the bar over the holder which slipped posteriorly causing abrupt hyperextension on the shoulder which resulted in the dislocation. Had there been an assistant (or supervisor) on the back side who could have helped him, this type of injury could have been easily prevented.

Asymmetric dislocation though rare are also reported [12]. Other cases reported in literature are either posterior dislocations or were associated with the fractures.[13] Posterior dislocations occur due to seizures , electrocution [14]or following hypoglycemic episode.[15] This is due to the forceful contracture of the internal rotators which overpower the external rotators. Bilateral glenohumeral dislocations are reported recently by Tripathy S K [16]. In the report of two cases one was due to episode of seizure in an epileptic patient and the other had an road traffic accident. Brumner M F reported a case of bilateral anterior shoulder dislocation in a duty Sailor following an episode of epilepsy. [17]

Choulapalle R Reported an unreduced bilateral anterior shoulder dislocation where both hands of the patient were pulled from the sides.[18]

Whatever the cause of dislocation, early reduction is of utmost importance which should be followed by the guarded rehabilitation. Associated fractures need to be properly addressed and MRI to rule out any rotator cuff or labral pathology should be done in selected cases.

CONCLUSION

Bilateral shoulder dislocations do occur. A high index of suspicion by an emergency care resident is important for early diagnosis. Unsupervised training at the local gyms should be discouraged and proper equipment should be sought for these fitness training centres to prevent such injuries.

CONFLICT OF INTEREST

None declared

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AUTHOR'S CONTRIBUTION

Study concept and design, Drafting of the manuscript: Hayat. Analysis and interpretation of data: Hayat, Younis, Ashraf and Adnan. Critical revision of the manuscript for important intellectual content: Hayat, Younis, Naseem and Adnan. Study supervision: Prof Munir Farooq .

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REFERENCES

1. Kazar B, Relovszky E. Prognosis of primary dislocation of the shoulder. Acta Orthop Scand 1969;40:216-224.
2. Kroner K, Lind T, Jensen J. The epidemiology of shoulder dislocations. Arch Orthop Trauma Surg 1989;108:288-290.
3. Zimmerman LM, Veith I. Great ideas in the history of surgery: Clavicle, shoulder, and shoulder amputations. Baltimore: Williams & Wilkins, Baltimore, 1961.
4. Hussein MK. Kocher's method is 3000 years old. J Bone Joint Surg [Br] 1968;50:669-671.
5. Brockbank W, Griffiths DL. Orthopaedic surgery in the sixteenth and seventeenth centuries: Luxations of the shoulder. J Bone Joint Surg [Br] 1948;30:365-375.
6. Hippocrates. Works of Hippocrates, with an English translation by WHS Jones and ET Withington. London: William Heinemann, 1927.
7. Hippocrates. The classic: Injuries of the shoulder: Dislocations. Clin Orthop 1989;246:4-7.
8. Page AE, Meinhard BP, Schulz E, Toledano B. Bilateral posterior fracture-dislocation of the shoulders: Management by bilateral shoulder hemiarthroplasties. J Orthop Trauma 1995;9:526-9.
9. Dinopoulos HT, Giannoudis PV, Smith RM, Matthews SJ. Bilateral anterior shoulder fracture-dislocation. Int Orthop 1999;23:128-30.
10. Dunlop CC. Bilateral anterior shoulder dislocation: A case report and review of the literature. Acta Orthop Belg 2002;68:168-70.
11. Cresswell TR, Smith RB. Bilateral anterior shoulder dislocations in bench pressing: An unusual cause. Br J Sports Med 1998;32:71-2.
12. Fung DA, Menkowitz M, Chern K. Asymmetric Bilateral Shoulder Dislocation Involving a Luxatio Erecta Dislocation. Am J Orthop (Belle Mead NJ) 2008;37:97-8.
13. Thomas T, Noel E, Bouvier M. Pitfall of stiff shoulder: inveterated posterior dislocation. Clin Rheumatol 1995;14:467–70.
14. Carew-McColl M. Bilateral shoulder dislocation caused by electric shock. Br J Clin Pract 1980;34:251.
15. Litchfield JC, Subhedar VY, Beevers DG, Patel HT. Bilateral dislocation of the shoulders due to nocturnal hypoglycaemia. Postgrad Med J 1988;64:450–2.
16. Tripathy SK, Sen RK, Aggarwal S et al .Simultaneous bilateral anterior shoulder dislocation: report of two cases and review of the literature. Chin j Traumatol. 2011;14(5):312-5.
17. Bremner LF, Dewing CB, McDonald LS et al. Simultaneous bilateral anterior shoulder fracture dislocation following a seizure: a case report. Mil Med. 2013 Mar;178(3):e400-3. doi: 10.7205/MILMED-D-12-00378.
18. Choulapalle R ,Chokkaroppu R, Kolluri RK etal. A case of neglected bilateral anterior shoulder dislocation: a rare entity with unusual mechanism of injury. Case Rep Orthop. 2015; 2015:461910. doi: 10.1155/2015/461910. Epub 2015 Apr 20.