Conservative treatment of voluntary atraumatic dislocation of the acromioclavicular joint: a case report

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Received: 27 August 2022
Revised: 29 September 2022
Accepted: 04 November 2022
Published: 14 April 2023

The Egyptian Orthopaedic Journal 2022, 57:358–360

Acromioclavicular (AC) joint dislocation is a common injury of the shoulder. In contrast to traumatic causes, nontraumatic dislocations are very rare. We report one case of a young active male who presented with voluntary recurrent dislocation of the AC joint. Clinical examination showed dislocation in the anteroposterior direction of the AC joint. The patient underwent conservative management. Conservative treatment along with lifestyle modifications is sufficient for pain control and associated symptoms. Regular follow-up is very important.

Keywords:
atraumatic, clavicle, conservative, dislocatio, voluntary

Egypt Orthop J 2022, 57:358–360

1110-1148

Introduction

Acromioclavicular (AC) joint dislocation is a common traumatic injury of the shoulder. Sprain and dislocation are the most common diagnoses after shoulder trauma. It has a male-to-female ratio of 5: 1, and an incidence peak between the ages of 20 and 30 [1]. AC dislocation is often caused by direct trauma [2–4]. In contrast to voluntary dislocation of the glenohumeral joint, a voluntary dislocation of the AC joint is a rare pathology. The purpose of this study is to report the outcomes of conservative management, knowing that there are still no treatment guidelines concerning this pathology.

Case report

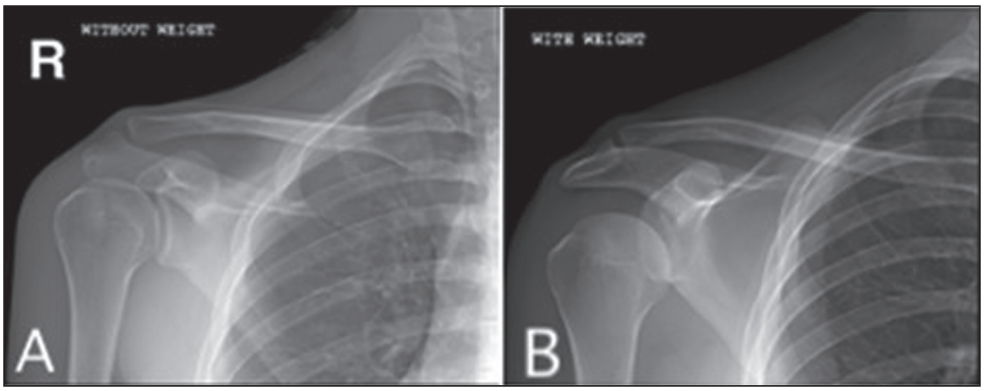
This is a 22-year-old male patient with history of right painless AC joint dislocation. Plain radiographs (Fig. 1) with and without weight and MRI showed no bony, ligamentous, AC joint or labral abnormalities. MRI showed normal coracoclavicular (Fig. 2a), AC (Fig. 2b), coracoacromial (Fig. 3a), and coracohumeral ligaments (Fig. 3b).

During the last couple of months, the patient had noticed a recurrent click in the front of his right shoulder after abduction of more than 90° in combination with scapular retraction and clavicular depression. No history of trauma was reported. There were no symptoms or clinical signs of soft tissue disorders such as Marfan or Ehlers–Danlos syndrome or any other joint hyperlaxity and no history of psychiatric illness.

Glenohumeral instability tests were all negative for both sides. On physical examination, the patient could actively dislocate his right AC joint in anteroposterior direction by abduction and scapular retraction of his shoulder. He had a negative O'Brien's active compression test, negative anterior load shift, negative posterior load shift, negative sulcus, negative anterior apprehension, and a negative relocation test. Moreover, the patient had negative provocative maneuvers in multiple directions. Upon examination of the right shoulder, findings were normal and signs of any shoulder instability or ligamentous instability were absent. One-handed shear test was positive, showing supero-inferior AC joint dislocation. This was followed by stress views and fluoroscopic examination of the right shoulder. After consideration of the age of the patient, as well as the present minor complaints of our patient, nonoperative treatment was recommended. Explanation about the need to refrain from specific maneuvers, such as active abduction with combination of scapular retraction, which provokes dislocation, was done. Postural therapy without taping was also advised. At 6-month follow-up, the patient could still dislocate voluntarily; however, his discomfort subsided and he was able to participate in his daily activities. The most recent follow-up, at 3 years, the patient has gained significant muscle mass by regular training, he denies any complaints or residual pain and he could still dislocate his AC joint voluntarily; however, he is avoiding provoking maneuvers and sports. By adapting to his condition, he probably cares to avoid dislocation-provoking maneuvers, which in turn decrease inflammation and pain in the joint. Surgical

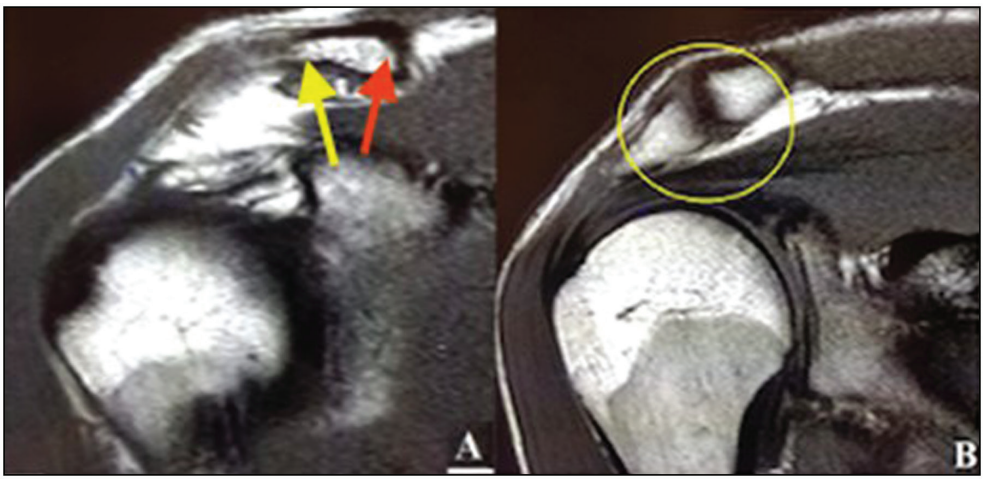
 DOI: 10.4103/eoj.eoj_45_22

Figure 1



Anteroposterior radiographs of the right shoulder with (b) and without (a) weight, showing no bony abnormalities.

Figure 2



(a) Coronal MRI cut of the right shoulder depicting normal anatomy of the coracoclavicular joint (yellow arrow: trapezoid ligament; red arrow: conoid ligament). (b) Coronal MRI cut of the right shoulder depicting normal anatomy of the acromioclavicular joint with its superior and inferior ligaments.

management was contemplated and reserved in case of failure of conservative therapy.

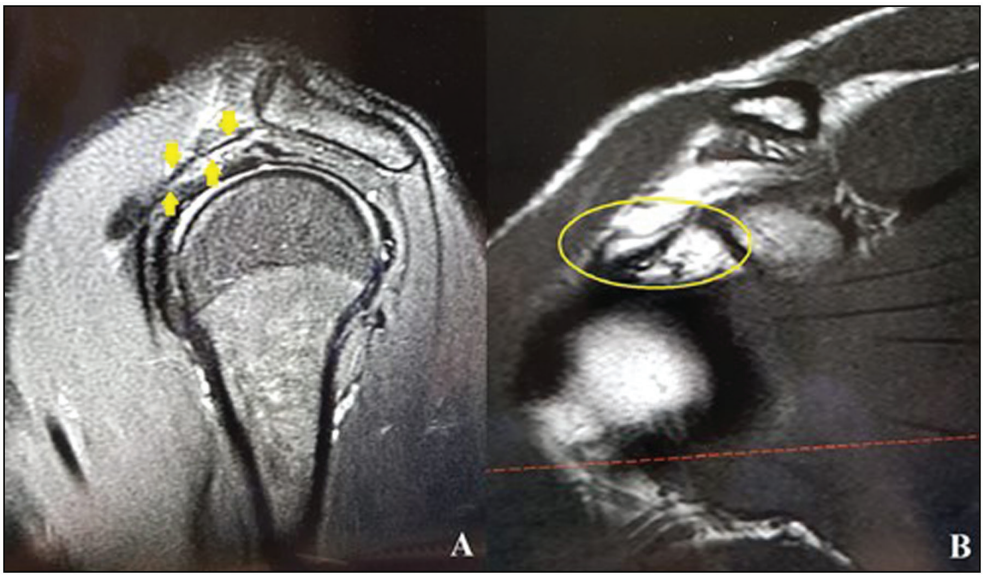
Discussion

In this article, one case of voluntary AC joint dislocation that was treated conservatively is reported. It was managed through patient education and physical rehabilitation. The outcome was a more stable and less symptomatic AC joint. Evidence from previously reported cases support the findings stating that the conservative approach is a valid way to manage voluntary AC dislocation. In this case, thorough explanation was given to the patient concerning both conservative and surgical options; however, after reporting previous successful nonsurgical attempts, the patient decided to undergo conservative management.

Only a few cases discussing this condition have been published.

In 1977, Janecki [5] published a case of a 19-year-old female patient with bilateral voluntary dislocation of both AC joints and no history of trauma. The patient could actively dislocate both AC joints anteriorly by retraction of her scapula and reduce it by protraction of her scapula. Both maneuvers were painful. The condition was explained and conservative management given, leading to the patient being asymptomatic within 1 month. The authors suggested that the pathophysiology behind this voluntary dislocation was due to narrowing of the costoclavicular space during adduction of the scapula, causing a decrease in the distance between the clavicle and the first rib leading to subluxation of the distal clavicle. Richards *et al.* [6] reported a case of voluntary AC dislocation in a 14-year-old boy. This patient suffered from spastic hemiparesis. An earlier trauma could not be ruled out. No treatment was given on account of the patient being asymptomatic.

Figure 3



(a) Sagittal MRI cut of the right shoulder showing normal anatomy of the coracoacromial ligament. (b) Coronal MRI cut of the right shoulder depicting normal anatomy of the coracohumeral ligament.

Sadeghi *et al.* [7] reported a case of a 17-year-old female patient with recurrent voluntary dislocation of the right AC joint without any instability of the shoulder. The condition was carefully explained to the patient and behavioral changes ensued to help with her conservative treatment.

Although successful most of the time, conservative management may sometimes fail. Barchick *et al.* [8] reported a case of atraumatic bilateral voluntary AC dislocation who failed conservative management consisting of physical therapy, opting for arthroscopic augmentation of the coracoclavicular ligaments, leading to satisfactory postoperative results. The authors suggested that the provocative factor leading to dislocation was differential firing of the muscles of the shoulder.

Conclusion

Atraumatic AC joint voluntary dislocation is a rarely reported pathology. Diagnosis is mainly done through clinical assessment with supporting dynamic fluoroscopic imaging modalities such as stress views of the associated shoulder. No straightforward guidelines have been put in place for the management of such pathologies; however in the reported case, conservative treatment along with lifestyle modifications were found to be sufficient for pain control and associated symptoms. Regular follow-ups are of great importance in order to monitor for new-onset injuries and associated ligamentous injuries.

Acknowledgements

Authors contributions: D.A. contributed in data collection and writing. J.M. contributed in writing and revision. G.A. contributed in writing and revision. C.C. contributed in writing and revision. M.D. contributed in writing and submission. G.E.R. contributed in operating surgeon and final review of the case.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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