



(CASE REPORT)



Inferior acromio-clavicular disjunction stage VI with clavicular shaft fracture: Very rare case report and review of the literature

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Abstract

Introduction and importance: Acromioclavicular dislocations are relatively common in the young, athletic population. We report a rare case of a rockwood stage VI acromioclavicular dislocation associated with one of the clavicle. This is the case of a patient who presented with an inferior right acromioclavicular dislocation associated with a well-engaged medioclavicular fracture of the right clavicle, treated surgically with a good functional result. Our work will be based on the study of this case, with a review of the clinical and therapeutic literature.

Case report: This is a 41-year-old female patient who presented to the emergency department with closed trauma of the right shoulder following a fall from a horse, with direct landing on the right shoulder. She complained of pain with total functional impotence of her right upper limb, with no downstream vascular-nervous disorders or other associated lesions. X-rays of the right shoulder face and profile with lamy and a right acromioclavicular defilement were consistent with Rockwood stage VI inferior right acromioclavicular dislocation associated with a well-engaged medio-diaphyseal fracture of the right clavicle.

Treatment was surgical, with osteosynthesis of the right clavicle and reduction of the acromioclavicular joint, with satisfactory stability control, supplemented by immobilization in an elbow-to-body brace for 3 weeks and free mobilization beyond 3 weeks, as well as muscle strengthening from the 6th postoperative week.

Discussion: Very few cases of type VI acromioclavicular dislocation have been found in the literature. These dislocations are observed very rarely and are difficult to diagnose in the early clinical findings, or may simply be overlooked due to the association of multiple traumas, as well as being associated with fractures of the acromion, clavicle, scapula and/or ribs.

The therapeutic attitude is controversial, although surgical techniques differ, and conservative treatment with therapeutic abstention takes its place.

Acromioclavicular dislocations must be classified into subtype VI-A for the subacromial and subtype VI-B for the subcoracoid, in order to codify the therapeutic attitude.

Surgical treatment of this type of dislocation guarantees a satisfactory functional outcome, and our work supports this observation and is in line with the literature.

Conclusion: Rockwood stage VI acromioclavicular dislocations, with its 2 subtypes, remain rare lesions requiring adequate surgical treatment with early and appropriate rehabilitation to ensure satisfactory functional results.

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Keywords: Acromioclavicular joint; Surgery; Dislocation; Clavicle

1. Introduction

Acromioclavicular dislocation is one of the oldest traumatic pathologies recorded in the literature. Although the incidence of acromioclavicular dislocation is frequent, opinions differ as to its treatment [1].

It often occurs following a fall onto the shoulder with the arm in adduction, but indirect trauma can also injure this joint [1].

There are six types described by Rockwood et al. and type 6 has two types: subacromial and subcoracoid [2].

The first case of inferior dislocation of the clavicle (subcoracoid) was described by Patterson in 1967 [3]. The mechanism of subcoracoid dislocation involves forced hyperabduction and external rotation of the shoulder, with the risk of injury to the accessory nerve.

These acromioclavicular dislocations are observed very rarely and are difficult to diagnose in early clinical findings, or may simply be overlooked due to the association of multiple traumas, as well as being associated with fractures of the acromion, clavicle, scapula and/or ribs [4].

For subacromial dislocation, based on the characteristics of injuries that occur in clavicular shaft fractures associated with inferior dislocation of the acromioclavicular joint, it can be suggested that subacromial dislocations are caused by segmental fractures. In this context, we refer to a case study of a clavicular fracture in which there are several traumatic events affecting the clavicle [5].

We report the case of a patient with a Rockwood stage VI inferior right acromioclavicular dislocation associated with a well-engaged medio-diaphyseal fracture of the right clavicle treated surgically.

2. Clinical report

This is a 41-year-old female patient who presented to the emergency department with closed trauma of the right shoulder following a fall from a horse, with direct landing on the right shoulder. She complained of pain with total functional impotence of her right upper limb, with no downstream vascular-nervous disorders or other associated lesions. X-rays of the right shoulder, front and side lamy, and a right accromioclavicular defilement were ordered, in favor of a Rockwood stage VI inferior right acromioclavicular dislocation associated with a well-engaged medio-diaphyseal fracture of the right clavicle.

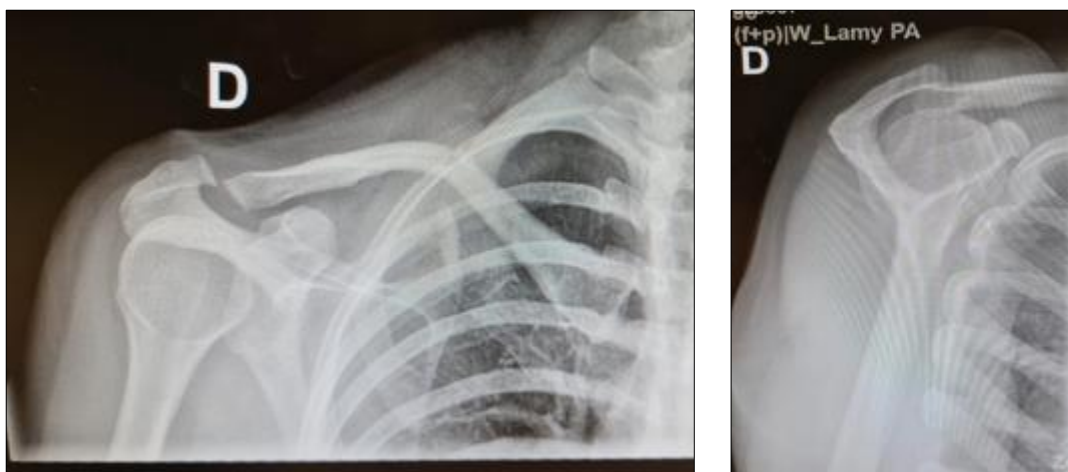


Figure 1 X-ray: clavicular arch + Lamy profile

Treatment was surgical in the Beach-chair position under general anaesthesia, with an anterior incision over the right clavicle. The fracture was reduced by placement of an anatomical plate under fluoroscopic control, followed by reduction of the acromioclavicular joint by traction of the right upper limb, with satisfactory stability control.

Immobilization with an elbow-to-body brace for 3 weeks was recommended, with free mobilization after 3 weeks, and muscle strengthening from the 6th postoperative week.



Figure 2 Control radiograph showing anatomic reduction of the acromioclavicular joint after osteosynthesis of the clavicle fracture using an anatomic plate

The patient was seen at 21 days post-op, 45 days post-op, 3 months post-op, 6 months post-op, and the last visit at 1-year post-op.

At the last follow-up, the patient had retained no post-operative pain or functional discomfort of her right shoulder, with joint amplitudes as follows:

Passive: antepulsion 180°, abduction 180°, external rotation elbow to body 55°.

Active: antepulsion 170°, abduction 170°, external rotation elbow to body 45°, and internal rotation thumb thoracic vertebra number 6.

3. Discussion

Very few cases were found in the literature, we found 13 articles related to type VI acromioclavicular dislocations, of which five cases presented an inferior subcoracoid dislocation [3,4,6,7,8] and eight cases were subacromial.

Of the latter, three articles concerned recurrent acromioclavicular dislocations [8,9,10], three presented associations with diaphyseal fractures of the clavicle [9,11,12], one showed an association with an incarcerated subacromial dislocation [1] and one article concerned the late diagnosis of a stage VI subacromial acromioclavicular dislocation [14].

Grossi and Macedo [9] and Koka and D'Arcy [11] described a case of subacromial acromioclavicular dislocation associated with a diaphyseal fracture of the clavicle, which was treated surgically with excellent functional results.

Juhn and Simonien [12] described a case of a diaphyseal fracture of the associated clavicle with a good evolution after surgical abstention and implementation of a rehabilitation protocol. The outcome was favorable, with good joint range of motion, supporting the case for conservative treatment.

Juhn and Simonian [12] have shown that acromioclavicular dislocations should be classified into subtype VI-A for the subacromial and subtype VI-B for the subcoracoid, in order to codify the therapeutic attitude.

Surgical treatment of this type of dislocation guarantees a satisfactory functional outcome, and our work supports this observation and is in line with the literature.

4. Conclusion

Rockwood stage VI acromioclavicular dislocations, with its 2 subtypes, remain rare lesions requiring adequate surgical treatment with early and appropriate rehabilitation to ensure satisfactory functional results.

Compliance with ethical standards

Disclosure of conflict of interest

The authors declare no conflict of interest in relation to the writing of this article.

Statement of ethical approval

The present research work does not contain any studies performed on animals/humans subjects by any of the authors'.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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