

Olgu Sunumu | Case Report

MIDSHAFT CLAVICLE FRACTURE AND IPSILATERAL DISLOCATION OF THE ACROMIOCLAVICULAR JOINT: A CASE REPORT

KLAVİKULA ORTA 1/3 ŞAFT KIRIĞI VE İPSİLATERAL AKROMİOKLAVİKULAR EKLEM ÇIKIĞI: OLGU SUNUMU

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Öz

Klavikula kırıkları klasik olarak kırığın bulunduğu yere göre tanımlanır. Klavikula kırıklarının yaklaşık %80'i orta 1/3 şaft kırıklarıdır. Akromiyoklaviküler eklem yaralanmaları, klavikula kırıkları gibi benzer travma mekanizmalarından kaynaklanır. Klavikula şaft kırığı ve ipsilateral akromiyoklaviküler eklem çıkığı nadir görülen bir yaralanma türüdür. Klavikula orta 1/3 şaft kırığı ve Rockwood tip 3 AC eklem yaralanması literatürde az sayıda vaka mevcuttur. Bizim vakamız sol klavikula orta 1/3 cisim kırığı ve ipsilateral Rockwood tip 3 AC eklem yaralanması peroperatif saptandı. Rockwood tip 3 akromiyoklaviküler eklem yaralanmalarının tedavisi tartışmalıdır. Biz vakamızda yeterli stabilizasyonu sağladığımız için ince profilli 3,5 mm kilitli plak ve Endobutton sabitleme sistemi (Smith & Nephew) seçtik. Sonuç olarak postoperatif 6. ayda omuz hareket açıklığı tamdı ve hastanın şikayeti yoktu. Literatürde çok sayıda yayın olmasına rağmen akromiyoklaviküler eklem çıkığının tercih edilen tedavisi halen belirsizdir. Nadiren kombine tip yaralanmaların tedavisine karar vermek için daha fazla vakaya ve daha uzun takibe ihtiyacımız var.

Anahtar Kelimeler: Akromiyoklaviküler eklem çıkığı, klavikula kırıkları, ipsilateral, orta 1/3 cisim, cerrahi tedavi.

ABSTRACT

Clavicle fractures are classically defined according to the location of the fracture. Approximately 80% of clavicle fractures are midshaft fractures. Acromioclavicular joint injuries are caused by similar trauma mechanisms such as clavicle fractures. The clavicle shaft fracture associated with the ipsilateral acromioclavicular joint dislocation is a rare type of injury. Acromioclavicular Rockwood type 3 joint injury with midshaft clavicle fracture is only a few cases are available in the literature. In our case revealed that the left clavicle had a middle third clavicle fracture and an ipsilateral type 3 AC joint appearance according to the Rockwood classification. Management of Rockwood type 3 acromioclavicular injuries is controversial. We have chosen a low-profile countered 3.5 mm locking plate and a single Endobutton fixation system (Smith & Nephew) because we provide sufficient stabilization in our case. As a result, 6th month postoperatively, the shoulder range of motions was fully and had no complaints. There are many publications in the literature, the preferred treatment for acromioclavicular joint dislocation is still unclear. We need more cases and longer follow-up to decide on the treatment of rarely combined type injuries.

Keywords: Acromioclavicular joint dislocation, clavicle fractures, ipsilateral, midshaft, surgical treatment.

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Introduction

Generally, clavicle fractures, which are formed by the direct mechanism in high energy trauma, constitute 2.6-5% of all fractures.¹ Clavicle fractures are classically defined according to the location of the fracture. Approximately 80% of clavicle fractures are midshaft fractures.² Acromioclavicular joint injuries are caused by similar trauma mechanisms such as clavicle fractures. The clavicle shaft fracture associated with the ipsilateral acromioclavicular joint dislocation is a rare type of injury.¹ Acromioclavicular Rockwood type 3 joint injury with midshaft clavicle fracture is only a few cases are available in the literature.³⁻⁴ In our case report, we present our preferred surgical treatment method and results in the treatment of Rockwood type 3 acromioclavicular joint dislocation and ipsilateral midshaft clavicle fracture with controversial treatment.

Case Report

A 24-year-old male patient applied to the Emergency Service after a motorcycle accident. Trauma was formed by the direct mechanism. Examination findings were limited on the left shoulder range of motion, swelling, tenderness, ecchymosis, deformity on the left clavicle, and shoulder asymmetry. There was no neurovascular damage in the bilateral upper extremity.

Radiologic examination revealed that the left clavicle had a middle third clavicle fracture and an ipsilateral type 3 AC joint appearance according to the Rockwood classification (Figure 1). The patient was operated on the 5th day of trauma due to soft tissue swelling and ecchymosis. A transverse incision was made across the clavicle toward the acromioclavicular joint. After reaching the fracture line and after reduction, osteosynthesis was obtained using a low-profile countered 3.5 mm locking plate. The incision was extended to achieve the distal clavicle. In addition to the displacement of the distal clavicle, the deltopectoral fascia, acromioclavicular and coracoclavicular ligaments had been ruptured. Despite open reduction and fixation of the clavicle midshaft fracture, there was a displacement of the superior in the acromioclavicular joint. therefore, the Endobutton fixation system (Smith & Nephew) was preferred for the repair of coracoclavicular ligament damage.

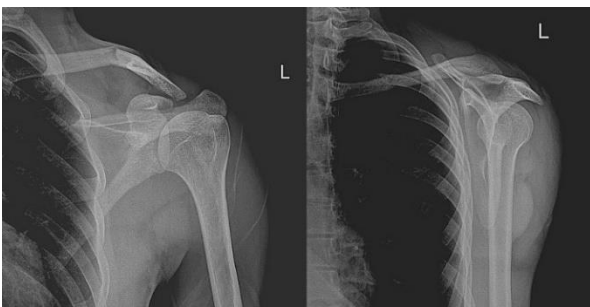


Figure 1. Preoperative shoulder anteroposterior and lateral radiographic images.

The AC joint was fixed with the help of the Endobutton fixation system. (Figure 2) The purpose of the use of this fixation device is to reduce acromioclavicular joint instability acutely and to ensure the continuity of reduction during the healing process. We have chosen a single Endobutton fixation system because we provide sufficient stabilization in our case.

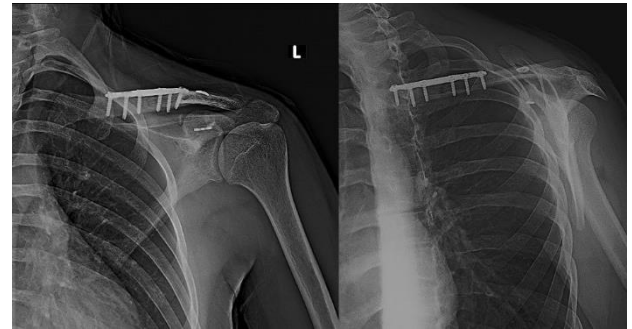


Figure 2. Postoperative shoulder anteroposterior and lateral radiographic images.

Postoperative first week stabilized shoulder with Velpau bandage. Postoperative rehabilitation started with passive shoulder joint movements for the first week; All active shoulder movements were allowed at the postoperative fourth week. All movements of the shoulder were full and painless for 2 months. Patient consent was obtained.

Discussion

Early surgery of AC joint dislocation (Rockwood type 4,5,6) and clavicle fracture is recommended in patients who are young and want to exercise by many surgeons. Although the conservative treatment of acromioclavicular joint Rockwood type 1 and 2 injuries and acromioclavicular joint Rockwood type 4,5,6 injuries have been provided with surgical treatment, Management of the Rockwood type 3 acromioclavicular injuries is controversial.⁵

In our case, open reduction and internal fixation were chosen for the left shoulder, midshaft clavicle fracture, and type 3 acromioclavicular dislocation. The treatment of these rarely seen combined injuries is controversial. Successful results are obtained in both conservative, and surgical treatments in the literature. The only way to prevent malunion in a dislocated midshaft clavicle fracture is with either open reduction internal fixation (ORIF) or a percutaneous procedure.⁶ The common methods used to stabilize the AC joint include the Weaver-Dunn procedure, hook plate stabilization, screw stabilization, and anatomic reconstruction of the CC ligaments.⁷⁻¹⁰ To our knowledge, there is a case in the literature that used an open reduction anatomical plate fixation and tightrope system for midshaft clavicle fracture and ipsilateral Type 5 AC joint dislocation.⁵ No case in literature used the Endobutton fixation system in the reconstruction of type 3 AC joint dislocation. Treatment of acromioclavicular joint Rockwood type 3

injuries is controversial. In our case, we preferred surgical treatment because our patient wanted to return to early sports activities. We provided stable surgical fixation for both fracture and AC joint injury allowed early rehabilitation. In the final follow-up, we found an excellent functional outcome and progression of the union in our case. As a result, osteosynthesis in the clavicle using a low-profile anatomical locking plate, and a stable joint using the endobutton in the AC joint were obtained. Coracoclavicular screw and clavicular hook plate are an alternative treatment option to endobutton.

Conclusion

There are many publications in the literature, the preferred treatment for acromioclavicular joint dislocation is still unclear. We need more cases and longer follow-up to decide on the treatment of rarely combined type injuries.

Compliance with Ethical Standards

Consent was obtained from the patient.

Conflict of Interest

The authors report no conflicts of interest.

Author Contribution

Authors contributed equally to this work.

Financial Disclosure

None

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