

**Surgical Treatment of Complete Acromioclavicular Dislocation with Rotator Cuff Tear in An Adult: A Rare Case Report**

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**Conflicts of Interest:** Nil

**Abstract**

Approximately 9% to 12% of all shoulder girdle injuries involve damage to the acromioclavicular (AC) joint; most of these injuries occur in the active population, typically in males in their second or third decade of life[1]. Among Injuries of acromioclavicular (AC) joint have an incidence of 4 per 100,000. Sports account for 25–50 % of all (AC) joint injuries. Acromioclavicular joint (ACJ) dislocation with rotator cuff tear occurs when an individual falls and lands on the tip of the shoulder with the arm adducted or with an extended and adducted arm. When patients are seen 6 weeks after the initial injury, the injury is considered to be chronic injury.

**Keywords:** Acromioclavicular dislocation, Rotator cuff tear

**Introduction**

Traumatic acromioclavicular joint dislocation with rotator cuff tears are common injuries among the active population. Non-operative treatments for AC joint dislocation are recommended for Rockwood I and II separations, while the management of Rockwood III dislocations still remains controversial. Rockwood IV through VI dislocations are usually treated surgically. The mechanism of AC joint separations is direct trauma, caused by a fall or blow with the arm in the adducted position. Indirect injury may occur by falling on an adducted outstretched hand or elbow, causing the humerus to translocate superiorly and driving the humeral head into the acromion. Rockwood’s classification is based on the degree and direction of clavicle displacement and is the most accepted classification.

A recent review reported that open procedures are still very common and stressed the importance of restoring both vertical and horizontal AC joint stability by Modified Weaver-Dunn procedure involves transfer of the coracoacromial (CA) ligament from the acromion to the lateral end of the clavicle.[3] Treatment recommendation for rotator cuff tear is mini-open repair or arthroscopic repair using anchor sutures.

Therefore, this study was undertaken to describe the clinical presentation in 68 years old male patient with right rotator cuff tear with acromioclavicular dislocation and their surgical management.

### Case Report

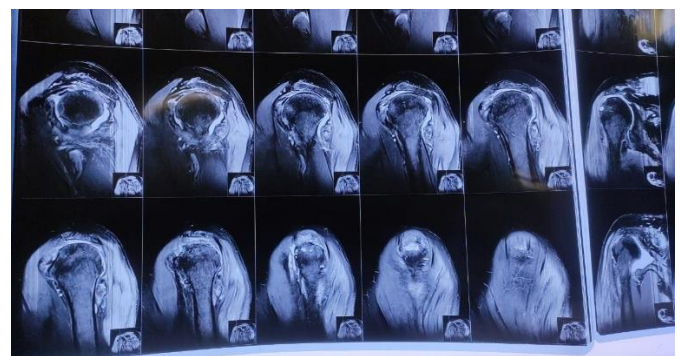
A 68 years old male patient came to the OPD with complaints of pain around right shoulder joint with inability to lift right upper limb after a self-fall on his right shoulder. He did not have signs of infectious disease or co-morbidities on admission. On physical examination, tenderness on palpation around right deltoid region and a bony hard swelling around right acromioclavicular joint with weakness that interfered with daily activities. The diagnosis was confirmed with preoperative radiographs including anterior posterior (AP), axillary lateral view of the involved right shoulder joint.

Radiographs showed Rockwood type-3 acromioclavicular dislocation. T2-weighted MRI Right shoulder revealed complete supraspinatus tendon, partial to near tear of infraspinatus and teres minor articular surface tear of subscapularis tendon with mild joint effusion and Acromioclavicular joint dislocation. Patient advised rotator cuff repair with stabilisation of AC joint dislocation. The patient was placed in beach chair position, under brachial block anesthesia. Standard mini-open rotator cuff repair using anchor sutures and AC Joint stabilised using modified Weaver-Dunn technique.

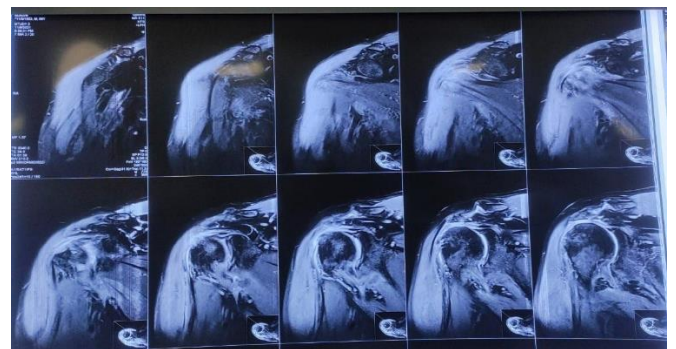
Intraoperatively, The CA ligament was detached from its acromial attachment together with a small piece of bone from the acromion to allow bone-to-bone healing. Postoperatively, the arm was immobilized for 4 weeks in an arm sling. Passive range of motion (ROM) exercises were initiated after this time. Active and active assisted ROM was begun 6 weeks postoperatively.



Fig. 1: Pre-Op Xray Showing Acromioclavicular Dislocation



(2A)



(2B)

Fig. 2: (A & B): MRI showing complete supraspinatus tendon, partial to near tear of infraspinatus and teres minor, articular surface tear of subscapularis tendon with

mild joint effusion and Acromioclavicular joint dislocation.

### Result

The patients were examined postoperatively by physical examination and radiographs. The patient had improved range of motion of right shoulder joint following surgery. No signs of any infection.

At 4 weeks follow up patient had no local tenderness at operated site with improved active and passive range of motion.



Fig. 3: Post-Operative X-Ray Showing Anchor Sutures And K-Wires.

### Discussion

Stability at the Acromioclavicular (AC) joint is the consequence of static and dynamic stabilizers. The AC joint capsule and the AC ligaments (anterior, posterior, inferior and superior) play a fundamental role in stabilizing the clavicle in a horizontal plane (anterior to posterior direction) [2]. On the contrary, the coracoclavicular (CC) ligaments (conoid and trapezoid) are the primary restraints to vertical (superior to inferior) translation at the AC joint. Proper diagnosis of ACJ dislocation is based on history, clinical examination, and radiographic evaluation to determine the type and optimal course of treatment [4]. Various surgical techniques have been recommended for the treatment of chronic ACJ dislocation; however, the most satisfactory has yet to be

established [4]. The most popular and widely used technique for AC joint injuries was described by Drs James K. Weaver and Harold K. Dunn as Modified Weaver-Dunn procedure. Transfer of the coracoacromial (CA) ligament may be associated with the risk of ongoing pain, instability, and recurrent subluxation because of stretching or failure of fixation of the reattached CA ligament. Treatment recommendation for rotator cuff tear is mini-open repair or arthroscopic repair using anchor sutures with stabilisation of AC joint using Modified Weaver-Dunn technique.

### Conclusion

The modified Weaver-Dunn technique with mini-open rotator cuff repair represents a good option in the treatment of type III AC dislocations with rotator cuff tears. The outcomes are successful in terms of pain relief, function and strength. No major loss of reduction or recurrence of neither instability, nor adverse effect related to the temporary fixation with Kirschner wires were observed. When patients with AC dislocation with rotator cuff tears are performed early reconstruction, it will be obtained better reduction, fewer complications and higher levels of patient satisfaction. The rates of arthritis in the modified Weaver-Dunn technique are extremely low [3], but AC arthritis has been reported to be seen more often in cases where reduction could not be achieved.

The Modified Weaver-Dunn procedure with mini-open rotator cuff repair by the anchor suture system, appeared to be an effective technique in treating ACJ dislocation with rotator cuff tears and yielded excellent outcomes in terms of return to pre-injury level of function.

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