

Acromioclavicular Stabilization through Weaver Dunn’s Open-Air Technique about 03 Cases in Hopital Hangadoubo Moulaye Toure De Gao

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Abstract

Case Report

Traumatic injuries of the upper limb quite frequently cause acromioclavicular lesions including acromioclavicular disjunction (ACD). In our context, its management is problematic regarding the indications of surgical treatment on one hand and the choice of the surgical technique on the other hand. Among the many techniques available, that of Weaver-Dunn is one of the most popular for its simplicity of realization and its efficiency. In this respect it seems the most appropriate because of the socio-economic conditions of the population because it does not require a double intervention in this case the removal of osteosynthesis equipment. In this series, we report 3 cases of at least stage 3 DACs, all treated with this technique with good functional results.

Keywords: Stabilization, Acromioclavicular, Weaver-Dunn Technique.

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INTRODUCTION

Damage to the acromioclavicular joint is common in shoulder trauma. The resulting acromioclavicular disjunction is a common pathology in shoulder trauma. According to Patte [1] it represents 8% of all upper limb dislocations and 12% of shoulder

joint dislocations. There are different classifications and that of Rockwood (Table I) described in 1984 [2] is currently the most popular and the most suitable. It is based on the extension of the ligament lesions and on the extent and direction of the radiographic displacement of the clavicle in relation to the acromion.

Table 1: Rockwood Classification

Stage 1	Stretching of the acromioclavicular ligament
Stage 2	Acromioclavicular ligament tear
Stage 3	Tear of the acromioclavicular ligament and coracoclavicular ligaments
Stage 4	Same stage 3 With posterior dislocation of the clavicle, through trapezius muscle
Stage 5	Same stage 3 With disinsertion of the trapezius and deltoid muscles of the distal clavicle
Stage 6	Same stage 3 With lower dislocation of the clavicle, under the coracoid

Despite their relative frequency, the treatment of acromioclavicular dislocations is the subject of much controversy, particularly with regard to the indications for surgical treatment. Surgical treatment remains

controversial in itself, as evidenced by the large number of techniques described.

The Weaver-Dunn technique is a ligament plasty which consists of a transfer of the coracoacromial

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ligament, with bone pellet of the acromion, on the distal clavicle. The plasty is protected by sutures anchored to the coracoid process, one of which is passed transosseously in the anterior part of the distal clavicle and the other is fixed around it [6, 7]. Clinical assessment of shoulder function was performed with the Constant score, which is a validated tool for this purpose [8].

In Mali, shoulder injuries are frequent due to road accidents and their management is not always efficient, causing many recurrences. In collaboration with the surgical team of the French BARKANE force in Gao, several cases of CAD have been successfully treated using the Weaver-Dunn technique. The purpose of this work was to demonstrate the place and

effectiveness of the Weaver-Dunn technique in stabilizing an old stage 3 CAD or higher.

CLINICAL CASES

Observation 1

This was an 18-year-old patient consulting for painful superior-inferior and postero-anterior instability with loss of function of the right shoulder following a motorcycle-pedestrian type public road accident in 2016. On examination there was exquisite pain in the shoulder, mobility of the external end of the clavicle and of the whole shoulder. The lower-upper drawer with “piano key” mobility was found. On the AP view, we saw a clear CAD associated with a displacement of the external end of the clavicle upwards and backwards (Figure 1). The dislocation was classified as Rockwood stage 5.



Figure 1: Cliché de face préopératoire



Figure 2: Cliché de face postopératoire

Observation 2

55-year-old male subject who consults for unstable and painful shoulder following a fall from a speed bump that occurred 3 years ago. Physical examination found painful superior-inferior and

postero-anterior instability with loss of function of the right shoulder. On the frontal view, we could see a complete loss of contact between the clavicle and the acromion (Figure 3) corresponding to a type 3 dislocation of the Rockwood classification.



Figure 3: Cliché de face préopératoire



Figure 4: Cliché de face postopératoire

Observation 3

69-year-old man, consulting for a loss of function in the right shoulder, which occurred following a fall from a camel's back more than 5 years ago and which evolved into chronic arthropathy of the

acromioclavicular joint. Exquisite pain was noted on examination of the joint and on weight-bearing, as well as instability. On the AP view, a dislocation of the acromioclavicular joint (Figure 5) or a Rockwood type 3 dislocation could be observed.



Figure 5: Cliché de face préopératoire



Figure 6: Cliché de face postopératoire

All patients underwent ligamentoplasty according to Weaver-Dunn consisting:

- Position ½ seated on the operating table, progressive monopolar hemostasis.
- Way first in epaulette. Disappearance of the delto-trapezial cap at the expense of fibrous scar tissue due to clavicular dislocation through the fibers of the deltoid. Extrication of muscle fibers. Exposure of the distal end of the clavicle which is remodeled and of the acromion.
- Incision along the axis of the deltoid fibers up to the tip of the coracoid process. Identification of the acromioclavicular ligament and passage of scissors under it. Osteotome section of a pedicled acromial pad on the LAC acromioclavicular ligament. Lifting by the deep face.
- Section of the external centimeter of the clavicle with an osteotome then preparation of a cubicle with a curette and gouge pliers
- Passage of three threads of Mersuture 1 under the knee of the coracoid apophysis and lacing lowering the clavicle
- Placement of the acromial bone block in the cubicle and fixation with a point in frame taking the fragment and trans-osseous in the clavicle. Satisfactory LAC reduction and tension

The postoperative course was simple in the three cases with removal of the Redon drain on D1. A control X-ray was performed postoperatively. Discharge was authorized on D1 with establishment of a Mayo-Clinic for 1 month. The postoperative controls at 30 days, 3 months and 6 months with radiography (Figures 2, 4 and 6) showed good stabilization of the acromioclavicular joint with a recovery of the functionality of the shoulder on the clinical level as well as an improvement in the Constant score which was considered very good in two cases and good in one case.

DISCUSSIONS

The goal of surgery in acromioclavicular disjunction is both acromioclavicular and coracoclavicular stabilization. Weaver-Dunnplasty is a well-established technique that has proven its effectiveness in the surgical management of chronic symptomatic acromioclavicular dislocations. Thanks to advances in surgical technique, this plasty gives satisfactory results in stage 3 CAD [9]. Studies show that the vast majority of patients are satisfied with the result of the operation, both for the aesthetic aspect and for the rapid return to sport or the disappearance of the initial symptoms such as pain and weakness [10]. In our series, the postoperative course was simple in all our patients. Postoperative controls; radiological and clinical; carried out at 1, 3 and 6 months showed good acromioclavicular stabilization and recovery of shoulder functionality. The assessment of shoulder function by the Constant score was very good for two patients and good for the third. The reproaches made to this technique are due to the fact that it could cause the humeral head to rise. The loss of the coracoacromial arch being known as a risk factor for shoulder subluxation in patients with a deficient rotator cuff, this could impact the quality of stabilization [11, 12].

The main drawback of this technique is the resistance of the transferred ligament compared to the native ligaments because it would provide insufficient mechanical resistance according to biomechanical studies [13-15]. However, in view of our results and subject to longer-term follow-up, we can affirm that the Weaver-Dunn technique represents in the short and medium term a good alternative in the stabilization of old type 3 or more CADs.

CONCLUSION

Although there is no unanimity regarding stabilizing surgery of the acromioclavicular joint and no surgical technique has clearly proven its superiority over others, this work demonstrates that ligament plasty

according to Weaver-Dunn gives satisfactory results in sprains of stage 3 or more. In view of the radiological and clinical results obtained, we can conclude that patients suffering from an old CAD of stage 3 or more can benefit from acromioclavicular stabilization according to this technique.

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