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# Functional outcome of arthroscopic subacromial decompression at the AGDAL's clinic in Rabat

## Abstract

The purpose of this study was to report our experience of arthroscopic subacromial decompression at the beginning experience. We retrospectively reviewed 27 patients who underwent arthroscopic subacromial decompression. The functional evaluation was done using the Constant score and Visual Analog Scale (VAS).

The series consisted of 22 women for every 5 men. All patients underwent subacromial decompression (SAD) by the arthroscopic technique associated or not with the rotator cuff repair. The mean Constant score increased from 47 preoperatively to 85 postoperatively. The shoulder arthroscopy procedure is a less invasive and safe procedure and provides good result in subacromial decompression.

**Keywords:** shoulder Arthroscopy, acromioplasty, subacromial decompression, rotator cuff repair

Case Report

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## Introduction

Arthroscopy is an endoscopic exploration technique witch allow to visualize and to intervene on the different intra-articular structures.[1–3] Arthroscopy is nowadays the most practiced procedure in France.[4] Shoulder arthroscopy is one of the most common procedures in orthopedic surgery,, especially for the treatment of a large number of shoulder joint pathologies.[5,6] Shoulder arthroscopy is a major tool in the arsenal for the treatment of shoulder's pain pathologies. This standardized technique is becoming more common in Morocco. The purpose of this study is to present the functional results of a series of subacromial decompression (SAD) at the beginning of our experience of shoulder arthroscopy in a private clinic in Morocco.

## Material and methods

It was a retrospective study of 27 patients who underwent shoulder's arthroscopy, all treated by a single operator between 19 July 2007 and 24 December 2009 at the AGDAL's clinic in Rabat. Data were collected from patient records and patient reports. Subacromial decompression was done alone or combined with a repair of the rotator cuff under arthroscopy procedure. All patients underwent a postoperative rehabilitation protocol. The functional results were evaluated on the score of Constant and Visual Analog Scale (VAS). The acromion was classified according to the classification of Bigliani and Morisson.[7]

## Results

The series covered 27 patients, 22 women for 5 men, with sex ratio of 4.4. The mean age of patients was 51.9 years (range 34to65 years). The predominant age range was between 46 to 60 years (70,4%). All patients consulted for a shoulder's pain (100%). The pain was insomniac for 12 patients (44,4%) that mean AVS between 8 to 10. There were 4 cases of history of shoulder injuries, 17 patients (63%) had received nonsteroidal anti-inflammatory drugs. Twenty-one patients (77,7%) underwent a functional rehabilitation before surgery, 14 patients (51,8%) underwent corticoid infiltration before arthroscopic procedure. The right shoulder had been affected in 15 patients, opposed to 12 in the left shoulder. The physical examination showed a reduction in active mobility in all patients, without any limitation of their passive mobility. The impingement syndrome was present in 23 patients (85,2%). The mean Constant score was 47 (range 30 to 62) preoperatively. The 27 patients performed X-ray centered on the painful shoulder, which showed: tendon calcifications in 3 cases (11%) (Figure 1); algodystrophy in one case; ascension of the humeral head in 11 cases (40, 7%); the antero-external beak of the acromion reducing acromial space 14 cases (51,8%) (Figure 2). According to Bigliani and Morisson classification, there were 5 (18,5%) acromion type I, 12 (44,5%) type II acromion and 10 (37%) type III acromion. Magnetic resonance imaging (MRI) was performed in 18 patients and showed: 13 cases of rupture of supra-spinous tendon of the rotator cuff (Figure 3); 12 effusions at the level of the acromio-deltoid bursa; 5 pictures of rotator cuff tendinopathy; 4 cases of acromioclavicular osteoarthritis. Arthroscopic exploration found in 16 patients a rotator cuff injury and in 27 patients signs of functional subacromial impingement. Arthroscopy procedure for SAD associated or not to the rotator cuff repair lasted an average of 70 minutes (range 30 to 145 minutes). Five patients underwent surgery under general anesthesia and 22 under combined anesthesia i.e. general anesthesia and Interscalenic block (Figure 4). All patients were placed in a beach chair position. Acromioplasty-bursectomy was performed in all patients (Figure 5). The rotator cuff repair was performed in 16 patients. The biceps tenotomy was performed in 7 patients and tenodesis was performed in one patient. However, 24 patients (88,9%) experienced a regression of pain and early recovery of limb functionality. We reviewed 26 of 27 patients within 4 to 6 weeks of surgery. Three were lost to follow-up at the outcome of 24 months. The mean Constant score was 85 in postoperative (74 to 97). Three patients had postoperative complications including 02 cases of persistent shoulder pain in occupational disease and one fail of the biceps tenodesis. No other musculoskeletal complications, including neurological injuries, were reported. Twenty-five patients (92, 6%) were satisfied of the arthroscopic procedure.

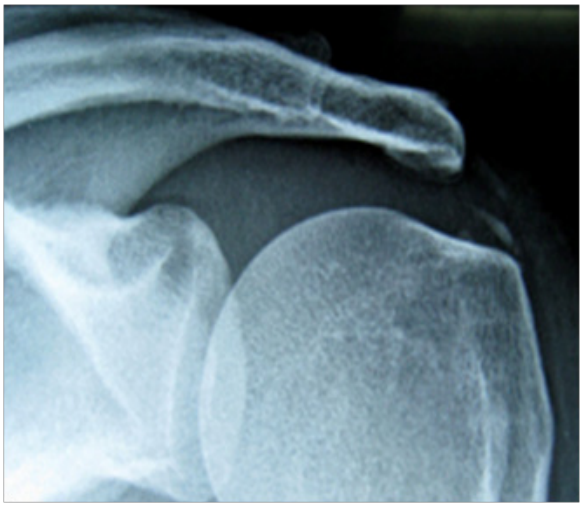

**Figure 1** Supraspinatus calcification.

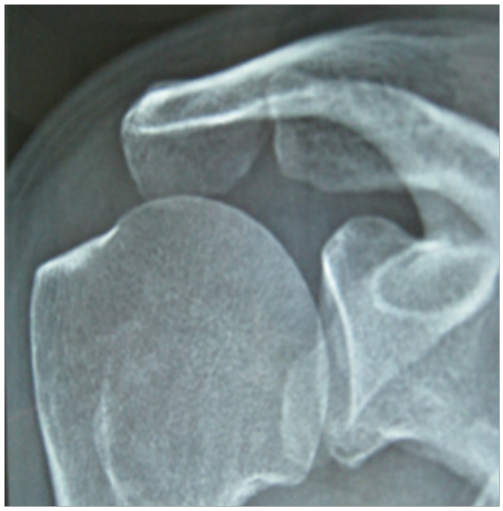

**Figure 2** The antero-external beak of the acromion type III.

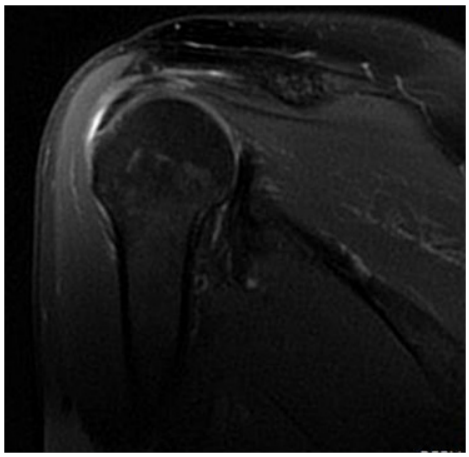

**Figure 3** Supra-spinous tendon rupture and impingement syndrome.

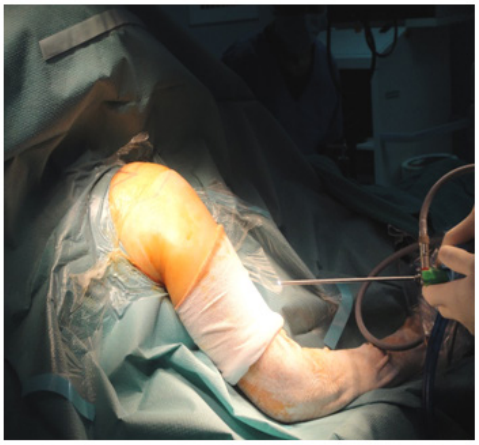

**Figure 4** General anesthesia and beach chair position.

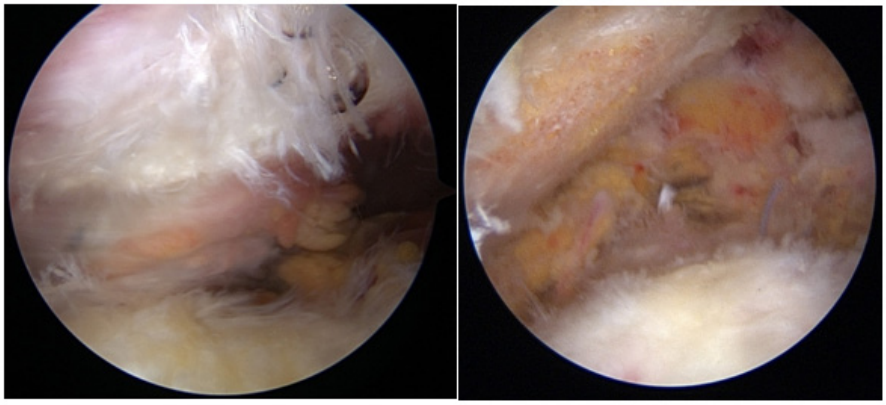

**Figure 5** Acromioplasty-bursectomy.

## Discussion

In Morocco, until the early 1990s the arthroscopy procedure was practiced only sporadically. In the early 2000s, the Moroccan Society of Arthroscopy was created, and with a University Diploma of Arthroscopic Surgery. This young society, through various congresses and seminars, allowed Moroccan surgeons to familiarize themselves with arthroscopic shoulder materials and pathologies.[8] This work was initiated by a pioneer of Moroccan society of arthroscopy, Professor Farid ISMAEL. Arthroscopy represents a new and promising

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technique for the diagnosis and treatment of disorders of the shoulder.[1] The first acromial decompression by arthroscopy was reported in 1983 by Ellman[9] as an alternative to open-cast acromioplasty described by Neer.[10] From this point on, many authors have confirmed that the arthroscopic result was at least equivalent to those obtained in the open air.[11–14] Acromial decompression is a surgical technique defined by the association of a resection of the antero-external beak of the acromion to a section of the acromio-coracoid ligament. The objective is to restore a slippage of the humeral head under the acromion without attachment of the cap at the level of the acromio-coracoid.[13] Acromioplasty is still the standard operative treatment for impingement lesions, and there has been a substantial increase in its incidence in the United States.[15] Indications for acromioplasty are based on clinical symptoms and are generally supported by typical changes in acromial morphology on standard radiographs.[16] In this series, the majority of the indications were based on clinical symptoms. It was not easy to explore patients with X-ray, ultrasound or RMI as recommended in many studies,[17,18] this because the cost of all investigations is supported by the patient. Other reason is that the necessity of MRI in the diagnostic algorithm for Subacromial impingement syndrome is controversial.[19] Thus, we based the diagnostic on clinical symptoms. A subsequent study using conventional radiographs reported a relationship between the shape of the acromion and the presence of rotator cuff disease.[7,20,21] Although these studies confirmed an association between rotator cuff disease and acromial shape, a causal relationship between the shape of the acromion and rotator cuff disease was not established.[21,22] The arthroscopic procedure didn't take much time, although this study report a series at the beginning of the experience. A study demonstrates increased surgical complications in relation with a long surgical time.[23] Regarding functional outcomes, in the current study, patients were really improved according to the Constant score and patient satisfaction.

## Conclusion

The shoulder arthroscopy procedure requires a learning curve. We believe that this less invasive and safe procedure provides good result in subacromial decompression. It's becoming the gold standard in the shoulder pain treatment. Patients improved significantly fast with this procedure.

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## Conflict of interest

The authors report that they have no conflicts of interest in the authorship and publication of this article.

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