ARTROSCOPIC BANKART REPAIR: TWO VERSUS THREE SUTURE ANCHORS
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ABSTRACT

Repair of the bankart lesion was considered the gold standard in the treatment of recurrent anterior shoulder dislocation. With the advent of arthroscopic procedures, arthroscopic repair became most popular especially with the wide use of suture anchors with different types. The aim: the aim of the study is to discuss the effect of the using two or three suture anchors on shoulder instability and the results five years after the operation. Patient and methods: Between March 2004 and June 2010, 51 patients were diagnosed as recurrent anterior shoulder dislocation. The current study included two groups of patients. The first group (the two anchor group) included 29 patients (25 males and 4 females) with mean age at time of operation 26.7 years (range 17 to 42 years). The second group (the three anchor group) of patients included 22 patients (21 males and 1 female) with mean age at the time of the operation 27.3 years (range 18 to 38 years). The follow up period for the first group was (mean 7.3 years, range 5-9 years) and for the second group (mean 6.2 years, range 5-7.5 years).

Results: The post operative Rowe score for both groups was improved significantly at the end of follow up period. For the first group (2 anchor group) the mean Rowe score was changed from 32.7 points (range 20 to 45 points) to 88.5 points (range 45 to 100 points). There were 25 patients with excellent and good score and the other 4 patients showed fair and poor scores. Also, the second group, the mean score was changed from 36.7 points (range 20 to 50 points) to 92.2 points (range 40 to 100 points). There were 19 patients with excellent and good scores and 2 patients with fair and poor scores.

Conclusion: The number of anchors not affects the results of bankart repair.

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INTRODUCTION

Recurrent anterior shoulder dislocation is a common issue all over the world. Bankart lesion is considered the most fixed lesion (1). Repair of the bankart lesion was considered the gold standard in the treatment of recurrent anterior shoulder dislocation. It had been carried out through open procedure with good and excellent results (2,3). The disadvantage of open repair is the post-operative pain and increased hospital stay and limitation of external rotation (2,4). With the advent of arthroscopic procedures, arthroscopic repair became most popular especially with the wide use of suture anchors with different types. It takes the advantages of short hospital stay, decreased postoperative pain and easy rehabilitation (5). Few studies in the literature which discussed the effect of number of the anchors on stability and long term results. Failure of the repair was owed to the number of anchors used in the repair in some studies. On the other hand, some authors owed it to failure to address all the pathology during repair like redundancy of the capsule, glenoid bone loss and hill sacks lesion.

THE AIM

The aim of the study is to discuss the effect of the using two or three suture anchors on shoulder instability and the results five years after the operation.

PATIENT AND METHODS

Between March 2004 and June 2010, 51 patients were diagnosed as recurrent anterior shoulder dislocation clinically and confirmed radiologically using plain x rays and MRI. Bankart lesion was the fixed lesion in all patients. The operation had been carried out at Benha University hospital and Al-Helal hospital (ministry of health) by the same team. All patients were done under general anesthesia in beach chair position. All patients were done using the same steps of the arthroscopic bankart repair, started by diagnostic arthroscopy, identification of the bankart lesion, preparation of the glenoid and labrum and repair of the lesion using two or three knot tying suture anchors according to the extent of the lesion and reliability of repair estimated intra-operative. All patients had been received the same postoperative rehabilitation and they were followed up for more than five years in the outpatient clinic. We collected data from patient files retrospectively.

The current study included two groups of patients. The first group (the two anchor group) included 29 patients (25 males and 4 females)
with mean age at time of operation 26.7 years (range 17 to 42 years). The second group (the three anchor group) of patients included 22 patients (21 males and 1 female) with mean age at the time of the operation 27.3 years (range 18 to 38 years). The follow up period for the first group was (mean 7.3 years, range 5-9 years) and for the second group (mean 6.2 years, range 5-7.5 years).

Evaluation of the patients was carried out through recording the preoperative Rowe score (6, 7) and the Rowe score at the end of the follow up and recording postoperative dislocation, subluxation, or positive apprehension test and the need for second operation for all patients.

Statistics:

Statistical analysis was done using the Paired-Samples T-Test to compare the mean preoperative and postoperative Rowe scores for each group and by Independent-Samples T Test.

| Table (1) comparison between the two groups: |
|-----------------|-----------------|-----------------|
| Number of patients | 29 patients (25 males and 4 females) | 22 patients (21 males and 1 female) |
| Age at time of operation | 26.7 years (range 17 to 42) | 27.3 years (range 18 to 38 years) |
| Follow up period | (mean 7.3 years, range 5-9 years) | (mean 6.2 years, range 5-7.5 years) |
| Preoperative Rowe score | Mean 32.7 points (STD 5.3) | Mean 36.7 points (STD 4.2) |
| Postoperative stability (50 points) | Mean 43.14 (STD 11.09) | Mean 44.3 (STD 11.36) | P value > 0.05 insignificant |
| Postoperative motion (20 points) | Mean 17.6 (STD 3.50) | Mean 16.8 (STD 3.29) | P value > 0.05 insignificant |
| Postoperative function (30 points) | Mean 25.6 (STD 5.56) | Mean 27.8 (STD 4.17) | P value > 0.05 insignificant |
| Total Rowe score (100 points) | Mean 88.5 (STD 19.58) | Mean 92.2 (STD 17.71) | P value ≤ 0.05 insignificant |
| Poor and fair (less than 75 points) | 4 patients (13.8%) | 2 patients (9.1%) |
| Good and excellent (76 points and more) | 22 patients (86.2%) | 19 patients (90.9%) |

There was insignificant difference between the two groups as regard the Rowe score (mean 88.5 versus 91.2 points) in favor for the second group.

DISCUSSION

This retrospective study showed that there is no difference between the use of two or three anchors in arthroscopic Bankart repair for recurrent anterior shoulder dislocation. 86.2% of patients showed excellent and good Rowe score with the use of two anchors only while 90.9% of patients showed excellent and good results after a follow up period more than 5 years (7.3 years for first group versus 6.2 years for the second group). There was slight but insignificant increase of the mean range of motion in favor of the two anchor group (17.6 points versus 16.8 points).

Arthroscopic Bankart repair became a common procedure in the last 2 decades after the wide use of suture anchors. Different studies showed that the number of anchors did not affect the results of repair. Lagen et al (8) concluded that successful stabilization could be achieved with few suture anchors less than three even one anchor may be sufficient in his study on 114 patients after 4 years follow up. Godinho et al (9) used double and single thread anchors and they found that 2 double thread anchors are better than three single thread anchors.

While Linde et al (10) concluded, after 8-10 years follow up of 68 patients, that the use of less than three anchors might increase the risk of recurrence of instability.

The function of the anchors is to support the labrum over the prepared glenoid for sufficient time for healing of capsule-labral...
complex over the glenoid. There are different factors which affect the repair like age of the patient at the first time dislocation, number of dislocations prior to the repair, redundancy of the capsule, glenoid bone loss, humeral bone loss and muscle balance around the shoulder (11-13).

The limitations of the study are the use of different types of anchors and there was no preoperative measurement of the glenoid bone loss or humeral head bone loss.

CONCLUSION
The number of anchors not affects the results of bankart repair.

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