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Original Research Article

Evaluation of Functional Outcome of Supraspinatus Tear Repairdone by Open Procedure: A Clinical Study

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Abstract

Background: Rotator cuff tears are a common cause of shoulder pain in the adult population and can be treated by one of the methods like arthroscopically, arthroscopically assisted (mini-open) or by an open procedure. Our present study is aimed to assess the functional outcome following rotator cuff repair by open approach.

Materials and Methods: This prospective study includes30 patients with full thickness rotator cuff tears and were followed up for 1 years following repair byopen approach between May 2021 to May 2023 and functional scoring was done preoperatively and 6 months and 1 year postoperatively with the Constant and Murley scoring system. Statistical analysis of scores were done for significance.

Results: Our study included 20 males and 10 females within the age group of 30 to 60 with most patients in the age group of 40 to 50 **.**The mean preoperative Constant and Murley score was 35 while the mean score at 6 months was 70 and 1 year follow up was 85 which is highly significant.

Conclusion: Rotator cuff tears repair done by open method has good to excellent functional outcome.

Keywords: Rotator Cuff Tear, Open Approach, Constant and Murley Score.

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Introduction

Rotator cuff tears as a cause of shoulder pain and difficulty in abduction are estimated to be 3.7/100,000 cases per year with a peak at the 50s in men and at the 60s in women [1]. Although the mechanism of the rotator cuff tears in the shoulder is not fully explained, generally the accepted theories involve acute trauma or recurrent chronic traumas leading to ruptures [2].An optimal repair of the rotator cuff provides with high fixation strength, proper healing of tendon to bone ,minimal gap and maximum mechanical stability under cyclic loading.[3] Different methods to treat the tear includes arthroscopically, arthroscopically assisted (mini-open) or by an open procedure. Rehabilitation for the repaired and recovering tendons after surgery is also important [4]

At present, there is no strong evidence to support the superiority of arthroscopy or open surgery for rotator cuff repair [5]. Our present study aims at evaluating the functional outcome after rotator cuff repair by open approach

Material and Method

This prospective study was conducted in out tertiary centre from May 2021 to may 2023 and included 30 patients of which 18 were males and 12 were females.

Inclusion Criteria:

1. Full thickness rotator cuff tears
2. Age 30 –60 years

Exclusion Criteria:

1. Partial thickness rotator cuff tear
2. Age < 30 and > 60
3. Other shoulder pathology

After obtaining approval for the study from ethical committee and consent from patients, surgery was performed. Preoperative constant score of the shoulder was calculated before surgery and recorded using Constant and Murley scoring system .After surgery, the operated arm was kept in abduction with a splint in 30 degrees abduction. The splint was worn continuously for 6 weeks and removed only while physiotherapy .Patients were followed up at 6 months & 1 year and functional evaluation of result was done by Constant and Murley shoulder scoring system [6]

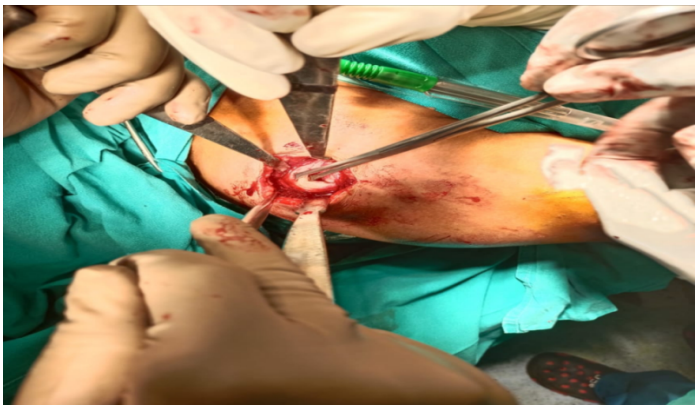

Figure 1: Supraspinatus tear

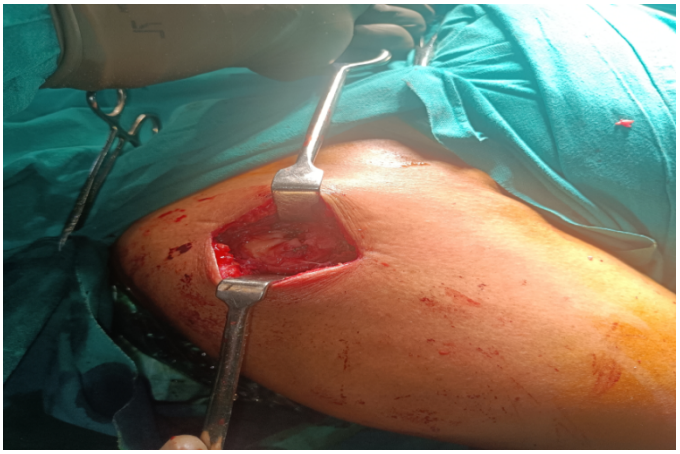

Figure 2: open repair done by anterior deltoid approach

Results

Of the 30 patients, 18 were men and 12 were women with age group of 30 to 60 with mean age of 45 years. Right side was affected in 24 cases of 30.

The Mean pre-op constant murley score was 35 (range 15 to 50). Mean constant score at 6 months post-surgery was 70 (range from 45 to 80). Mean constant score at 1 year follow up was 85 (range from 65to 95).

Table 1:pre and post operative constant murley score

Constant murley score		
Preop	Post op 6 months	Post op 1 year
35 (15 – 50)	70 (45 – 80)	85 (65-95)

Figure 3: preoperative - abduction 40 degrees and painful ROM

Figure 4: Postoperative - abduction 100 degrees and painless ROM

Table 2: Functional outcome

Outcome	Constant murley score	Patients
Excellent	86-100	9 (30 %)
Good	71-85	12 (40 %)
Fair	56-70	6 (20 %)
poor	<56	3 (10 %)

Discussion

Our study included patients from 30 to 60 with peak age group being 40 to 50. Kim et al and Yamaguchi et al in their study also showed that increase in the prevalence of rotator cuff tears is associated with older age from 40 to 60 [7,8].

Our study showed involvement of right side (dominant) in 80 percent cases and a male predominance (60%) in rotator cuff tears. A study by Douglas Harryman et al in 1991 in 105 patients with rotator cuff tear showed that 67% of the patients being men and 67% of the patients having their dominant side affected[9] .In a study of 79 patients by Motycka et al. , the mean postoperative Constant and Murley score was 71.5 and they also found a strong correlation between Constant and Murley score & subjective satisfaction of the patients. [10] In our study, the mean Constant score increased from 35 before surgery to 85 points 1 year after surgery.

Papadopoulos et al. in their study, evaluated the functional outcome of 27 Patients with rotator cuff tear repaired by an open technique with Constant scale and a mean follow-up of 40.2 months and found that 67% of the patients had excellent results, 26% good and 7% regular.[11] Matthias et al in their long term study of 9.9 years in 23 patients treated by open rotator cuff repair found that it is significantly effective in treating massive rotator cuff repairs with a relative post op constant score of 85 which is similar to our study.[12]

Conclusion

Rotator cuff tear treated by open method yields good to excellent results in most of the patient but postoperative Physiotherapy Protocol Too Should Be Followed.

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