



ORIGINAL RESEARCH PAPER

Orthopaedics

FUNCTIONAL OUTCOME OF MINI OPEN SUBACROMIAL DECOMPRESSION FOR SHOULDER IMPINGEMENT SYNDROME

KEY WORDS: Acromioplasty, Shoulder Impingement syndrome, Subacromial decompression

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ABSTRACT

Background: Shoulder impingement syndrome is one of the commonest causes for shoulder pain. It is initially managed conservatively with analgesics and physiotherapy. Twenty six adult patients were included in the study, who underwent mini open subacromial decompression for shoulder impingement syndrome, between January 2016 to August 2017. The functional results at the end of 6 months was judged using Constant -Murley scoring system.

Results: In our study we found the peak incidence of shoulder impingement syndrome in age group of 51-60 years (34.61%) The male to female ratio is 1.36: 1, improvement was seen in 4th week, 12th week and at 24 week follow up, with gradual increase in Constant- Murley scores in each follow up. Excellent outcome was seen in 96.16% and good outcome was seen in 3.84%. We have concluded that mini open subacromial decompression for shoulder impingement syndrome gives excellent results. It is the procedure of choice as it is less invasive

INTRODUCTION

Shoulder pain is very common. It is the second most frequent musculoskeletal disorder ¹ and shoulder impingement is the leading cause of shoulder pain ¹². Shoulder impingement has severe effects on the patient's perception of his/her general health. The impingement usually begins gradually, after which it is commonly recurrent or chronic, and it often affects people of working age. In industrial countries, impingement syndrome can be a tremendous burden. As a long-lasting condition, it brings significant economic consequences through treatment costs and productivity losses ³. The success of the mini-open technique was followed by the description of completely arthroscopic subacromial decompression, which has also been successful. However, mini-open subacromial decompression remains a viable alternative to arthroscopic subacromial decompression and has advantages over both arthroscopic and formal open subacromial decompression. However, the natural history of the shoulder impingement syndrome is still not clear. The recurring nature of the symptoms challenges the faith of the patient in recovery and challenges orthopaedicians and even shoulder specialists in terms of treatment approach. Clear indications for treatment based on randomized trials have not been defined. The expectations of both surgeons and patients, along with the availability of the operative treatment, affect the choice of treatment. This prospective analytical study involves 26 patients with Stage II shoulder impingement which were treated by mini open technique and their functional outcome was assessed.

MATERIALS AND METHODS

This is a prospective study on 20 patients with shoulder impingement syndrome undergoing mini open subacromial decompression at Father Muller Medical College Hospital, Mangalore from January 2016 to August 2017. Frozen shoulder, Osteoarthritis of Acromioclavicular joint were excluded from the study. Pre-operative VAS, modified UCLA score were recorded. These 20 patients were treated surgically with subacromial decompression. Functional outcome is assessed by using constant murley scoring system. Assessment was done at 4 weeks, 12 weeks, 24 weeks post subacromial decompression. The procedure was performed with the patient under general or regional anesthesia or a combination of both. The patient is sent home with the arm immobilized in a sling. The patient is allowed to remove the sling on the second postoperative day as long as there is no discomfort. The postoperative instruction packet includes instructions for the patient to perform pendulum exercises, elbow active range of motion (AROM), and hand squeezes four to six times per day. Postoperative VAS, objective (modified UCLA

scores) were recorded periodically at 4 weeks interval for first 3 months followed by once in 3 months. Data from imaging studies and findings were documented as per proforma. All the patients underwent arthroscopy and findings were recorded. Data were collected and entered in MS excel – 2010 and analysed using SPSS – version 22. Descriptive statistical analysis like mean, SD, percentages and other relevant inferential statistical tests were applied. Data were presented as tables and graphs as relevant.

RESULTS

A total of 20 patients diagnosed to have shoulder impingement who met the required criteria were included in the study. All subjects were available for follow up at the stipulated time periods. The following observations were made during pre-operative phase of conservative Management with physiotherapy and postoperatively at 4 weeks, 12 weeks and 24 weeks using the UCLA shoulder scale to assess shoulder function. Among the 20 patients, the mean age was 38 years with minimum age being 20 years and maximum age 65 years. 12 of the patients were males and 8 were females. Even though more number of males were diagnosed with chronic shoulder impingement, this was not statistically significant compared to females. There is no predilection for gender. The patients had symptoms for a mean of 4.95 months, varying between 1 month and 6 months before seeking medical advice. These patients were treated initially with a trial of Physiotherapy for 6 weeks. None of the patients had relief of symptoms and subsequently all the patients were considered as failed non operative therapy patients due to persistence of shoulder impingement. These patients were treated with Arthroscopic subacromial decompression. According to UCLA shoulder rating scale a Score > 27 is good/excellent (satisfactory result) and Score < 27 is Fair/poor (unsatisfactory result). The maximum score is 35 points. At end of non-operative treatment with physiotherapy for 6 weeks the mean score was 8.250 which indicated that the patients were not functionally satisfied and had fair/poor (unsatisfactory) outcome. By 12 months after subacromial decompression patients had mean UCLA shoulder rating scale of > 27 which indicates good/excellent (satisfactory outcome) and a mean score of 29.0. From 4 weeks post subacromial decompression with mean score 11.150 onwards up to final follow-up the p value is seen to be <0.001 with mean score 29.00 at 12 months, indicating significant difference in the UCLA shoulder rating scale compared to non-operative phase scores suggesting that subacromial decompression led to a good/satisfactory outcome in the study subjects.

DISCUSSION

Shoulder impingement syndrome was introduced in 1972 by

Neer⁴, who divided it into three stages: Stage I: Edema and hemorrhage Stage II: Fibrosis and tendinitis Stage III: Tears of the rotator cuff, biceps ruptures, and bone changes⁵. Impingement syndrome was initially described as arising from the mechanical friction of the tendon under the acromion⁴. However, further studies and treatment trials have not been able to demonstrate a purely mechanical etiology for this syndrome⁶. The exact etiology of impingement pain is still unknown, and therefore the current treatment options are controversial⁶ Dom K. *et al.* report a prospective five-year follow-up study of 52 patients who had arthroscopic subacromial decompression for advanced (stage II : type 1 and 2) rotator cuff disease. From six months until five years postoperatively, 45 (out of 52) patients showed a further progressing improvement and relief of symptoms⁷ However, in our study at 12 months post operatively, most of the cases achieved good to excellent results.

Ellman H. *et al.* performed arthroscopic subacromial decompression on 65 patients who were evaluated for two to five years after surgery. On the UCLA shoulder rating scale, 89% of the cases in the study achieved a satisfactory result⁸

CONCLUSION

This study concludes that mini open subacromial decompression provides good to excellent functional outcome in patients having primary shoulder impingement due to extrinsic mechanical causes such as shape and slope of acromion, acromioclavicular joint arthritis with minimal invasion in the absence of significant rotator cuff tear.

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