

Physiotherapy after Arthroscopic Repair of Supraspinatus Tendinitis

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Abstract- Shoulder joint influences on daily activities along with degenerative changes of structures around it, Painful arm following Supraspinatus tendinitis restricts self care and increases dependency. **Aims & Objectives** of this research was to evaluate the efficacy of exercises therapy post arthroscopic repair of Supraspinatus **Materials & Methodology:** 63 year old female was treated in Chennai with exercise therapy following arthroscopic repair of supraspinatus (Left) from 20.07.2017 to 01.10.2017 with thrice a week frequency **Results:** Pre and post shoulder functional index were recorded and analyzed statistically P<.001 **Conclusion:** Exercises play a vital role in post arthroscopic repair of shoulder muscles and follow up is more important

Keywords: Arthroscopy, Tendinopathy, Proprioceptive Techniques, Kinematic Exercises, Shoulder Impingement Syndrome

I. INTRODUCTION

- S**houlder dysfunction is the second most common musculoskeletal problem seen in physiotherapy (Vanderwint et al 2007) and affects 16 to 21% of the population (Kujipers et al 2006) and its prevalence in persons of 65 years and older is 34% (Lin et al 2011). The direct cost for the treatment of shoulder dysfunction in the United States exceeds \$7 billion annually (Meislin et al 2005).
2. Patients with clinical signs of subacromial impingement and rotator cuff tendinopathy are common (Oster et al 2005) where shoulder pain and functional restrictions, mostly during over head activities were recorded (Lewis et al 2001)
 3. Physiotherapists often rely solely on clinical signs and symptoms to establish a diagnosis and to determine the focus of treatment (Linsell et al 2000)
 4. Diagnosis of shoulder pain is too broad to provide sufficient information to develop specific protocols in daily practice (Green et al 2003)
 5. Surgical intervention by arthroscopic, aims to release the contracted tissue to improve movement and relieve pain (Omari & Bunker 2001)
 6. People with pain in the neck and shoulder region are often disabled to the point where they cannot live a normal life, as the pain may also influence the persons work capacity, financial and social situation (Ingwersen et al 2015) and shoulder pain is the 3rd most common musculoskeletal

disorder and the lifetime prevalence is estimated between 7 and 10% (Luime et al 2004)

7. Subacromial impingement syndrome which accounts for 33% of shoulder related healthcare (Feleus et al 2007) includes a cluster of symptoms rather than a single pathology, with complaints of arm, neck and shoulder as disorders that include the rotator cuff syndrome, tendonitis of the muscle infraspinatus, supraspinatus subscapularis and bursitis in the shoulder area (Huisetede et al 2007)
8. Patients with subscapularis tendinitis present with shoulder pain with moment and pain during night, limiting their activities of daily living (McKendry et al 1982)
9. Supraspinatus muscle is of the greatest practical importance in the rotator cuff as it stabilizes the shoulder, externally rotates and helps to abduct the arm by initiating the abduction of the humerus (Ellis & Mahadevan 2010)
10. ST (Supraspinatus Tendinitis) is a common cause of pain in the shoulder (Fu et al 1991) and a disability condition with more prevalence after middle age (Chard et al 1988) as they becomes degenerated most often as a result of repetitive stress (Sommerich et al 1993) and its treatment involves physical therapy, NSAID, ice treatment (Allen et al 1998)corticoid injections (Louis Hasan et al 2014) and surgical intervention if there is no improvement after 3-6 months of conservative treatment (AOS 2014), where calcium deposit resection with subacromial decompression performed under arthroscopic method (Starr et al 2001) with an aim for pain relief and increased range of motion (Aclment et al 2012)

Aims & Objectives of this original case presentation was to evaluate physiotherapy post arthroscopic repair of supraspinatus tendinitis

II. MATERIALS & METHODOLOGY

Background information:

H/O

Pain of sudden onset with inability to lift left hand over head was diagnosed with calcified tendinitis of left shoulder and treated with arthroscopic repair of left Supraspinatus on 16.06.2017

C/O

Pain and difficulty in lifting left hand above head

Normotensive, non diabetic, vegetarian is attending the center since 20.06.2017 for further rehabilitation

O/E

- Capsular tightness
- Anteverted scapula (Left)
- Mild wasting of deltoid, triceps
- Movements of left elbow, wrist and hand full
- Cervical spine has presented with obliterated cervical lordosis and movements less stronger and resisted from mid range
- Active ROM of left shoulder was with restricted medial and lateral rotation

Abduction 0°-15° Flexion 0°-30°, Lateral Rotation - 0°-5°

Provisional Diagnosis:

Post operative left shoulder stiffness, weakness of shoulder and scapular muscles

Treatment Adopted Includes

- Cervical, scapular and shoulder strengthening exercises
- Mobilization of left shoulder
- Open and closed kinematic exercises to left shoulder
- Irradiation hold relax technique using PNF
- Home programme with rubber bands, hand hold exercise ball

III. RESULTS

Her present conditions as on 01.10.2017

- Pain: has come down on active movements and for daily activities from VAS scale of 8 to 2
- ROM: With mild end range restrictions shoulder movements were full and pain free
- ADL: She has started using the left arm for daily activities such as cooking, dressing, toileting, bathing and other self care means.
- Motor Power of left deltoid, triceps, scapular muscles have adequately improved compared with uninjured side.

The subject's pain threshold was good, with every session progression was explained, she was continuing home exercises along with therapy by the author, pre and post shoulder function index were recorded and analyzed

Table of Results of pre and post S.F index post arthroscopic repair of supraspinatus tendinitis with exercises using student 't' test

Test	Score	SD	SE	[1] t	[2] P
Shoulder Function Index	Pre	57	25	15	[3] 3.08 [4] <.001
	Post	12			[5] [6]

IV. DISCUSSION

The key points for presenting this subject with rehabilitation of post operative supraspinatus repair were as below:

- a. Combine various exercise techniques such as open and closed kinematic exercises
- b. Use of physioball to strengthen muscles
- c. Adoption of Proprioceptive techniques to mobilize joints and to improve motor power
- d. Combined strengthening of cervical, shoulder scapular and elbow muscles to promote functional activities
- e. Encourage daily routines from cooking cutting vegetables, dressing, toileting etc as and when with recovery stage

1. Patient should be treated conservatively prior to undergoing surgery as exercise therapy seemed to cause less costs than surgery (Brox et al 1993) and moderate evidence suggests equal effectiveness of physiotherapist led exercise and surgery (Haahr et al 2005)
2. Bang and Deyle et al 2000 have with moderate evidence that manual therapy, home exercises regular rechecking, including adjacent joints in the treatment with significant improvement in pain and functional activities
3. Dickens et al 2005 in a six months study among 85 subjects with shoulder impingement syndrome with (n=45) subjects were treated by physiotherapy including passive manual joint mobilization, home based strengthening exercises for rotator cuff, strapping, advice on posture, while 11 of these 45 subjects refused to undergo surgery, where as control group (n=40) subjects who underwent surgery with post surgery follow up of six months, subjects treated with physiotherapy had more functional improvements than those treated with surgery
4. Brox et al 1993 among 1252 subjects with SIS were assigned in 3 groups, Group I were treated with subacromian decompression with arthroscopy followed by physiotherapy, 2nd ground had placebo with LASER (Control Group) therapy and the 3rd group were treated with physiotherapy, shoulder functioning at 6 months were same among group I and III
5. Haahr et al 2005, using arthroscopic surgical subacromial decompression among 84 patients versus treated conservatively in a 8 year follow up have recorded similar results on shoulder pain and disability score. Thus moderate to strong evidence that surgery is not more effective than physiotherapist led exercises in the shoulder in a 6 months – 8 year follow up as supported by systematic review (MMuscPhty et al 2009)
6. Cheng et al 2011 have reported with level 4 evidence in a 2 year follow up among 309

- patients post arthroscopic rotator cuff repair with health related quality of life using SF 36
- 7. In twenty sessions (10 weeks) of exercises combined with hydro collator application 90% of strength and movements of left shoulder was achieved
 - 8. Pain tolerance and subjects exercise capacity also played a role for this early recovery

V. CONCLUSION

Shoulder joint plays a vital role with daily functional activities, especially geriatric subject following injury, restoration of their abilities to be independent for their daily living, where physiotherapy using various techniques ensures early recovery as evidenced with scientific means in this study findings subject post arthroscopic repair, can be extended on larger sample size with follow up of longer duration.

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