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## Mobilization Vs Electrotherapy in Adhesive Capsulitis Shoulder

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### Abstract

Musculoskeletal injuries among geriatric subjects can diminish their quality of life. Proper physiotherapy intervention as in adhesive Capsulitis or frozen shoulder not only clinically improve the subject but facilitates functional independence. Aims & Objectives of this original case presentation was to evaluate the effects of electrotherapy modalities versus exercise modalities on a subject with adhesive Capsulitis. Materials & Methodology: 61 year old diabetic subject with left frozen shoulder was treated in Chennai with TENS, ultrasound therapy from June 2017 to August 2017. From September 2017 to November 2017, she was treated with mobilization and strengthening exercises. Results of shoulder function of the subject with electrotherapy and exercise therapy were recorded and analyzed statistically. Results: Electrotherapy showing  $P < .005$  and exercise therapy with  $P < .001$ . Conclusions: Physiotherapy with functional rehabilitation with evidence be chosen than symptom reducing modalities was the key outcome of this research.

**Keywords:** Adhesive Capsulitis, Electrotherapy, Shoulder Function Index

### Introduction

- Adhesive Capsulitis (AC) also known as idiopathic frozen shoulder is one of the most common causes of shoulder pain and disability (Rockwood 1990)
- It usually affects patients aged 40 and 70 with female more commonly affects than male (Bjelle 1989). With predisposatory factors like diabetes. Cervical spondylitis, COPD, Pulmonary tuberculosis, coronary artery disease physical inactivity and Parkinson's disease (Palmer et al 2001), but has a higher incidence of AC among subjects with diabetes (10-30%) compared with the general population (Pearsall 2008)
- AC with 3 phases, first phase with severe pain and restricted ROM, lasts for 2-9 months, the second phase as adhesive phase lasting about 3-9 months, in which there is fibrosis of tissue surrounding the shoulder with associated pain decreases and more reduction of range of motion. Third phase with subsidence of pain and also with loss of motion for 12-18 months (Macforlane 2001)
- Subjects with AC have pain, restricted range of motion, have difficulty in dressing, performing personal hygiene (Murnagham 1988) and performing activities that require overhead movement reacting or rotation (Hannafin & Chiaia 2000). In an attempt to compensate the loss of shoulder active ROM by using other muscles and increasing scapular rotation to accomplish various activities. This places additional strain on the other muscle groups, leaving them over loaded and tender (Stegell et al 1999)
- Treatment options for AC are both surgical and non-surgical means involving physical therapy (Diercks & Stevens 2004) which includes low power LASER therapy, TENS, massage, stretching exercises, ultrasound (Knight et al 2001) shortwave diathermy and hotpac (Robertson et al 2005)

**The Aims & Objective** of this study was to evaluate the efficacy of mobilization alone versus electrotherapy on a subject with AC

### Materials & Methodology

This study subject with known type II diabetes aged 61 years female had a fall in June 2017,

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was treated with NSAID, electrotherapy modalities using TENS, ultrasound therapy for three months till August 2017 elsewhere in Chennai. As pain and functional activities didn't improve she was getting treated by the author from September till November 2017 with hot pac, Maitland's manual therapy, strengthening of shoulder and scapula muscles, kinematic exercises, with thrice a week and each session lasting for 20-25 minutes

**Results**

After a month's therapy with only exercises, she was able

to sleep on affected side (Left) pain has decreased, motor power and hypertrophy of muscles around scapula, shoulder were recorded marginal improvement with range of motion and her functional activities

Pre and Post shoulder function index were recorded and analyzed statistically as below

Table of results on student t test for only

- a) **electro and**
- b) **only exercise**

a)		SD	SE	t	p	b)		SD	SE	t	p
Pre	68	5.19	3.00	3.01	<.05	Pre	59	15.58	9	3.85	<.001
Post	59					Post	32				

**Discussion**

- Green et al 1998 have an treatment outcome measures suggested importance of disability and (Poolman et al 2009) have suggested that subjective measures are of greatest relevance, as these assess effectiveness from the patients perspective
- Omar et al 2016 have in a systematic review on the effects of electrotherapy versus therapeutic exercises among frozen shoulder an improving ROM, relief of pain and quality of life have with evidence recorded electrotherapy along have no or limited improvement, but combined with exercises have significant improvements.

**Evidence for Electrotherapy in AC of Shoulder**

- In a systematic review on shoulder disorders (Vander Heerden et al 1996) have shown ultra sound therapy have shown no evidence with six trails among 2 subjects when compared with placebo, also lacks evidence for LASER therapy
- Leung et al 2008 have among 30 subjects in a 4 week study among FS in a RCT dividend in to 3 groups, while group I was treated with SWD and stretching,

group II with heating pad and stretching and group III with stretching alone with thrice a week frequency have recorded an improved VAS, AD2 and ASES but ROM has improved more among group I than group II

- Mykanen et al 1995 among 73 subjects with painful shoulder with 2 months of duration, painful supraspinatus test and restricted shoulder movements have treated group I n=36 subjects with 10 minutes of ultrasound for 10-12 sessions in 3-4 weeks group II (n=37) were treated with sham treatment both groups were treated with massage of neck and shoulder muscles, group strengthening and stretching of scapula humeral and cervical musculature were given results with moderate evidence
- Among 60 patients with FS (Frozen Shoulder) were at random allotted in group I – treated with high TENS and group II with low TENS as control groups, have recorded 50% improved VAS among group I compared to group II subjects (Morgan et al 1996), this study subjects as shown in table of results has improved functional means with electrotherapy with significant statistically

**Evidences for Exercises Among Adhesive Capsulitis**

I.	Bangle and Deyle et al 2000 – among 52 subjects with mean age of 43 years having shoulder impingement syndrome in a six months follow up have used among group I – with 6 physiotherapist led sessions of manual therapy, soft tissue massage, stretching and home exercises. Group II 6 physiotherapist led sessions of shoulder flexibility and strengthening	Moderate evidence with group I gave good results than group II
II.	Conroy and Hayes et al 2010 among 14 subjects of 52.9 year as mean age with shoulder rotator cuff lesion, where group I – subjects were treated with 9 physiotherapist led sessions with in 3 weeks based on initial examination using manual mobilization of subcarinal and glenohumeral joints group 5 subjects were treated by a physiotherapist led sessions in 3 weeks using hot packs, stretching exercises, strengthening exercises and exercises for posture correction pendulum exercises, as supported with these evidences, this study subject has shown a highly significant outcome with statistical tests as shown in the results table	

**Conclusion**

While this study has compared effects of exercises versus electrotherapy on this subject with adhesive Capsulitis, showing an positive result for exercises than electrotherapy, however further studies with larger sample size, longer duration follow up, continuation with other variables and including control subjects could further validate findings of this research report.

**References**

1. Rockwood CA, Editor. The Shoulder. Philadelphia: WB Saunders Co, 1990.
2. Bjelle A. Epidemiology of Shoulder Problems. Baillieres Clin Rheumatol Dec 1989 ; 3 : 437 – 451

3. Palmer K T, Cooper Walker-Bone K Et Al. Use of Keyboards and Symptoms in the Neck and Arm: Evidence From A National Survey. Occup Med 2001 ; 51 : 392 – 395
4. Pearsall AI, MD. Adhesive Capsulitis. Emedicine. 2008. Accessed 06/01/09
5. Macforlane G. Upper Limb Disorders. In: Silman A, Hochberg M C. (eds.). Epidemiology of the rheumatic disease. Oxford Medical Publications , 2001 ; 339 – 366
6. Murnagham, IP: Adhesive capsulitis of the shoulder: cuEnt cotrcepts atrd treatment. Orthopedics,II: 153\_15g, 1988
7. Hannafin, IA. And Chiala, TA: Adhesive capsulitis:A treatment approach . Clin. Ottlxop Relat. Res, 312t95'109' 2000.

8. Stegel, L.8., Cohen, N.J. and GAIL, E.p.: Adhesive capsulitis: a sticky jssue. *An. Fan. plrysican*, 591843-1852, 1999
9. Diercks RL, Stevens M. Gentle thawing of the frozen shoulder: a prospective study of supervised neglect versus intensive physical therapy in seventy-seven patients with frozen shoulder syndrome followed up for two years. *J Shoulder Elbow Surg* 2004;13: 499–502.
10. Knight CA, Rutledge CR, Cox ME, Acosta M, Hall SJ. Effect of superficial heat, deep heat, and active exercise warm-up on the extensibility of the plantar flexors. *Phys Ther* 2001; 81: 1206–1215.
11. Robertson VJ, Ward AR, Jung P. The effect of heat on tissue extensibility: a comparison of deep and superficial heating. *Arch Phys Med Rehab* 2005; 86: 819–825
12. Green S, Buchbinder R, Glazier R, Forbes A. Systematic review of randomised controlled trials of interventions for painful shoulder: selection criteria, outcome assessment, and efficacy. *BMJ* 1998;316:354-60
13. Poolman RW, Swiontkowski MF, Fairbank JC, et al. Outcome instruments: rationale for their use. *J Bone Joint Surg [Am]* 2009;91-A(Suppl 3):41-9.
14. Omar, Faisal Al-Qarni ,Mousa Al-Juweyr. Review of the Effects of the Electrotherapy Alone and Therapeutic Exercises On Functional Range Of Motion For Patient With Idiopathic Frozen Shoulder. *IOSR Journal of Nursing and Health Science* Volume 5, Issue 2 Ver. I (Mar. - Apr. 2016), PP 01-08
15. van der Heijden GJ, van der Windt DA, Kleijnen J, Koes BW, Bouter LM. Steroid injections for shoulder disorders: a systematic review of randomized clinical trials. *B J Gen Pract* 1996; 46:309-16.
16. Leung MC, Williams PL, Benedetto A, Au C, Helmcke KJ, Aschner M, Meyer JN. *Caenorhabditis elegans*: an emerging model in biomedical and environmental toxicology. *Toxicol Sci.* 2008 Nov;106 (1):5-28. doi: 10.1093/toxsci/kfn121. Epub 2008 Jun 19.
17. Nykänen M. Pulsed ultrasound treatment of the painful shoulder a randomized, double-blind, placebo-controlled study. *Scand J Rehab Med* 1995; 27: 105–108
18. Morgan B, Jones AR, Mulcahy KA, Finlay DB, Collett B. Transcutaneous electric nerve stimulation (TENS) during distension shoulder arthrography: a controlled trial. *Pain*, 1996, 64, 2, 265-7.
19. Bang MD, Deyle GD. Comparison of supervised exercise with and without manual physical therapy for patients with shoulder impingement syndrome. *J Orthop Sports Phys Ther* 2000; 30: 126–137
20. Conroy Jessica Hayes-,Allison Hayes-Conroy. Visceral Geographies: Mattering, Relating, and Defying. The Authors. *Geography Compass* © 2010 Blackwell Publishing LtdVolume 4, Issue 9 September 2010, Pages 1273–1283