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Effectiveness of mobilization along with shoulder exercise on functional ability in patient with periarthiritis shoulder

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Abstract
Background: Frozen shoulder is characterised by painful stiff shoulder. Frozen shoulder, also called adhesive capsulitis, is one of the diseases that cause shoulder pain. The purpose of this study is to analyze mobilization technique with shoulder exercises on pain and disability for patients with peri-arthritis shoulder.
Objective of Study: To analyze the objective effectiveness of mobilization along with shoulder exercise to improve functional ability in patient with periarthritis of the shoulder joint
Methods: 10 subjects were chosen randomly between the age grup of 40 -50 years, who had periarthritis shoulder for this study in experimental group for all the subject has received Mobilization technique slong with shoulder exercise were given for 3 weeks. The outcome was measured by using Shoulder pain disability index scale (SPADI) for PA shoulder
Result: After 3 weeks training period there were significant improvement in subjects range of motion and functional ability who underwent mobilization technique and shoulder exercise
Conculsion: After treatment it concluded that patient who underwent mobilization technique and shoulder exercises had a significant improvement in function and relive pain.

Keywords: Periarthritis shoulder, mobilization technique, shoulder exercise, SPADI

Introduction

Frozen shoulder also known as adhesive capsulitis, it is condition characterized by stiffness and pain in your shoulder joint. This can take anywhere from a year to 3 years. Frozen shoulder is defined as a glenohumeral joint with pain that explained on the basis of joint incongruity. peri - arthritis shoulder is common condition characterized pain and progressive limitation of abduction and external rotation of shoulder joint.

The condition is characterised by painful stiff shoulder. Shoulder pain is a commonly encountered problem, with prevalence studies indicating a frequency of 7–20% among the adult general population. The incidence of this condition in the general population is between 2% and 5%. It is more common among women aged 40–60 years. The disease is characterised by pain, difficult to do functional activity, and loss of joint range of motion. Its Etiology is incompletely elucidated. The pathological anatomy of frozen shoulder includes synovial inflammation, joint capsule hypertrophy, and a resulting development of fibrous structures. The condition occurs bilaterally in 20–30% of cases. Awareness of this disease generally starts with a sensation of strain and joint pain while performing the movements when moving in any direction. One of the main complaints in patients with shoulder pain is functional disability.

Treatment of shoulder pain is usually aimed at pain reduction and improvement of functional disabilities. Consequently, the outcome measurements should include an instrument (e.g., questionnaire) for the evaluation of pain and functional disabilities. There are several self-administered shoulder pain and disability questionnaires. Patients ranked the Shoulder Disability Questionnaire (SDQ) and the Shoulder Pain and Disability Index (SPADI) as the most relevant questionnaires.

The SPADI was the least time consuming, both the SDQ and the SPADI appear to be convenient and easy to complete. The SPADI was originally developed in English.

Stages

Acute/Freezing/Painful Phase

Gradual onset of shoulder pain at rest with sharp pain at extremes of motion and pain at night with sleep interruption which may last anywhere from 2-9 months

Adhesive/Frozen/Stiffening Phase

Pain starts to subside progressive loss of GH motion in capsular pattern pain is apparent only at extremes of movement. this phase may occur at around 4 months and last till about 12 months

Resolution/Thrawing Phase

Progressive improvement in functional range of motion which can last anywhere from 5 to 24 months. despite some studies suggest that it is self-limiting conditions and may last up to 40% of patients may have persistent symptoms and restrictions of movement may have persistent pain and longterm disability. effective treatments which shorten the duration of the symptoms and disability will have a significant value on reducing the morbidity

Mobilization

Mobilization is a physical therapy technique designed to relieve pain and muscle spasms release tension and improve flexibility in a joint & movement of a joint and stimulating smooth joint function joint mobilization improves range of motion and mobility. and used treat joint dysfunctions that limit ROM by specifically altered joint mechanics it is usually aimed at target synovial joint with the aim of achieving a therapeutic effect manual mobilization will help initiate and promote the healing process of the affected soft

tissues Grade I-IV joint mobilization may be useful as a pre-test for the appropriateness of manipulation, as a pre-treatment for manipulation, or as a substitute for manipulation in patients where manipulation might be contraindicated. Note: Grade V mobilization should be construed as joint manipulation or adjusting.

Spadi Scale

- Shoulder pain and disability index (SPADI) This is used for evaluate the functional disability in patients with PA Shoulder. Pain scale shows severity of the pain (0=no pain 10=the worst pain.

Operational Definition

Mobilization Technique

- A manual therapy technique comparing a continuum of skilled passive movements to the joint complex that are applied at varying speeds and amplitudes, that may include small - amplitude high velocity therapeutic to restore optimal motion, functional.

Shoulder Exercise

- Wall climbing exercises
- Mariner wheel exercises
- Pendulum exercises
- Towel exercises

Methodology

The study was pre -test and post-test Experimental study. The study was conducted in out patient department of Cherran's college of physiotherapy the sample were selected in the random sampling method. 10 subjects were selected for this study by using inclusive and exclusive criteria. The inclusive criteria are Chronic / idiopathic pa shoulder, A slow onset of pain that can last from 6 weeks to 9 months. Any movements of the shoulder cause pain and shoulder range of motion starts to become limited. External rotation of shoulder begin the most limited followed by shoulder flexion and internal rotation Both male and female 40 to 60 years of age. And the exclusive criteria are Tendon transfer, Neurological disorder, Dislocation Secondary fracture, Rheumatoid Arthritis.The pretest and the post test was measured by using the Shoulder Pain And Disability Indexing Scale (SPADI) Shoulder Pain Disability Index was used to analyse the pain intensity and the disability level. In this scale it shows the Pain scale how severe pain 0=no pain,10=the worst pain. And the Disability scale how much difficulty in doing movements 0=no difficulty,10 =so difficulty it require.

Before the collection of data subjects were explained about the purpose of the study. The investigate had given a detail orientation to the various procedures. The constant and full co-operation of each participant was sough after complete explanation of the condition and demonstration of the procedure involved in the study.

Treatment Procedure

10 Subjects were taken for this study, before starting the treatment program the effects of exercise and te procedure has explained to the subjects.

Mobilization

Posterior glide

Patient position: Supine lying

Therapist position: Walk standing position.

Proximal grasp: At the head of humerus

Distal grasp: Elbow joint

Mobilization: Gentle pressure applied the head of humerus moves posteriorly.

Anterior glide

Patient position: Prone lying.

Therapist position: Walk standing position.

Proximal grasp: At the acromion process.

Distal grasp: Elbow joint.

Mobilization: Gentle pressure applied the head of humerus moves anteriorly.

Inferior glide

Patient position: Supine lying.

Therapist position: Walk standing position.

Proximal grasp: At the neck of humerus.

Therapist position: Walk standing position.

Mobilization: gentle pressure applied the neck of humerus moves inferiorly.

Along with the mobilization the following shoulder exercises also teach to the subjects. The exercises are Shoulder ROM, Wall climbing exercise, Overhead pulley exercise, Pendular exercise, Isometric exercise, Scapular stabilization exercise, Capsular stretching exercise.

Data Analysis

The parameter were assessed in the collected data were analyzed by descriptive statistical method having 10 subjects. the sample were assessed pretest initially and then the post test was assessed at the end of 3 weeks. Statistical analysing using patients t -test was performed to compare the pre-test and post test scores of shoulder pain and disability index scores in subjects. The mean difference of shoulder pain and disability index scores in subjects. The result obtained from the statistical analysis is provided here follow.

Table 1: Pre and post Test value of Pain intensity in SPADI

Measurement	Mean	Mean Difference	Standard Deviation
Pre-test Post test	25.9 20.9	5	0.9165

Table 2: Pre and post Test value of disability Scale in SPADI

Measurement	Mean	Mean Difference	Standard Deviation
Pre-Test Post-Test	39.9 35.2	4.7	0.9486

Table 3: Shoulder Pain and Disability Scale (Spadi)Values

Measurement	Mean	Mean Difference	Standard Deviation	Paired 't' Value
Pre-Test Post-Test	77.62 62.10	15.52	4.5	4.7

Results

A total number of 10 subjects were age group between 40 - 50 with peri-arthritis of shoulder joint are randomly selected for this study. There were a group of subjects in experimental. The subjects of the Quasi group are given treatment for a period of 3 weeks. Before and after the treatment the subject with pain and disability were measured using shoulder pain and disability index (SPADI) for taking pretest values 77.62 and post test values 62.10 respectively. The calculate t value was calculated by the pre-test and post-test values respectively. The calculate t value 4.7 was calculated by the pre-test and the post-test values of SPADI. Based on the statistical analysis the result of the present study shows that there is a significant improvement in the subjects with periarthritis of shoulder following the effect of treatment. By the values of statistical analysis of the study show that mobilization with shoulder exercise is effective for disability and relief in periarthritis of shoulder joint.

Discussion

Frozen shoulder is characterised by painful stiff shoulder. It is also called adhesive capsulitis, is one of the diseases that make shoulder pain. The incidence of adhesive capsulitis in the general population is approximately 3% to 5% but as high as 20% in patients with diabetes. Idiopathic adhesive capsulitis often involves the nondominant extremity, although bilatera linvolvement has been reported inupto 40%to 50%of cases. adhesive capsulitis is often regarded as a selflimiting diseases that resolves between 1and 3 years. various studies have shown that between 20% and 50% of patients may go on to developing long lasting symptoms.

DERYA CELIK (2016) to assess the effectiveness of joint mobilization combined with stretching exercise in patients with frozen shoulder. 30 patients were taken were assigned into 2 groups group a (joint mobilization and stretching) group b (stretching alone). Exercise program were treated for 6 weeks 18 session. Joint mobilization with stretching is better than stretching alone in terms of external, abduction ROM. Allparticipants were randomly assigned to one of two treatment groups joint mobilization and stretching exercises both group performed a home exercise programe and were treated for 6 weeks (18 sessions). The primary outcome measures for functional assessment were the disabilities of the arm, shoulder and hand score and constant score. In the treatment of patients with frozen shoulder, joint mobilization combined with stretching exercises is better than stretching exercises alone in terms of external rotation, abduction range of motion function score

The purpose of the study is to analyze the effectiveness of mobilization technique with shoulder exercise for reducing pain and disability for periarthritis of shoulder. The treatment session were given 21 days (5 days /week for 3 weeks). The aim of joint mobilization is to restore the normal joint play that might have been compromised by damage or injury. Frozen shoulder syndrome is condition of uncertain etiology characterized by a progressive loss of both active and passive shoulder motion. Clinical syndrome includes paina limited range of motion a limited range of motion and muscle weakness from disuse (Neviaser RJ 1987).

Before the treatment the pre-test SPADI (Shoulder pain disability index) measured and after 3 weeks of treatment the post-test values of shoulder pain scale are measured. The paired 't' test was used to compare the pre -and post value of SPADI for subjects. There is a significant improvement in functional ability and reeducation pain in subjects. The study concluded that the subject who received mobilization with shoulder exercise improvement in functional disability and in pain for subject who had periarthritis shoulder. The statistical results also show that there is improvement in subject.

Conclusion

An Experimental study to analysis the efficacy mobilization technique and shoulder exercises on pain and disability in subjects with periarthritis shoulder ten subjects were selected for this study in simple random sampling manner. pain disability was measured using SPDAI. This study support the alternative hypothesis. The analysis of the study concluded that the subjects who recovered the mobilization technique and shoulder exercise has reduced pain and improved functional disability has reduced pain and improved functional disability that was due to periarthritis shoulder. The statically result show that improvement in subjects.

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