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## Comparison of Spencer Technique Versus Myofascial Release on Pain and Range of Motion in Periarthritis Shoulder

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### Abstract

**Background:** Frozen shoulder or Adhesive Capsulitis is characterized by painful, gradual loss of active and passive shoulder motion resulting from fibrosis and contracture of the joint capsule. Frozen shoulder can be divided into primary and secondary forms. The Spencer technique is a standardized series of shoulder treatments with broad application in diagnosis, treatment and prognosis. This technique increases pain free range of motion through stretching the tissues, enhancing lymphatic flow and stimulating increased joint circulation. Myofascial therapy direct bodily effects range from alleviation of pain, improvement in ROM. **Aim & objective of the study:** To analysis & understand Spencer technique on Pain and Range of motion in Periarthritis shoulder. To analysis & understand Myofascial release on Pain and Range of motion in Periarthritis shoulder. To compare the effect of Spencer technique vs myofascial release on Pain and Range of motion in Periarthritis shoulder. **Data Analysis and Results:** Data analysis and result of this study shows that there is homogeneity of pre intervention variables of pain and ROM of abduction and ROM of extension and ROM of external rotation. There is a statically significant improvement in pain and ROM of abduction, extension and external rotation in patients with p value <0.05 in both control group and experimental group. While comparing both control and experimental group there is a statistically greater improvement in experimental group in which myofascial release is given to the patients in pain and ROM of abduction and extension and external rotation with p value <0.05. **Conclusion:** It is concluded that there was statistically significant improvement in pain and ROM of abduction and extension and external rotation in Periarthritis shoulder patients of both control group (Spencer technique group) and experimental group (myofascial release group). But there is a greater improvement in experimental group in which myofascial release is given to the patients.

**Keywords:** Spencer Technique, Myofascial Release, Periarthritis Shoulder, Range of Motion

### 1. Introduction

The term “frozen shoulder” was first introduced by Codman in 1934. He described frozen shoulder as a painful shoulder condition of insidious onset that was associated with stiffness and difficulty in sleeping on the affected side. Codman also identified the marked reduction in forward elevation and external rotation that are the hallmarks of the disease. <sup>1</sup> Patients with FSS have difficulties in everyday activities (dressing, grooming, and performing overhead reaching activities and so on for a period of several months to several years) and shoulder pain disturbing sleep at night on the affected side, which is a key diagnostic sign. <sup>2-3</sup> Frozen shoulder can be divided into primary and secondary forms. In the primary form, there is no associated disease or a history of trauma or surgery of the shoulder. Secondary form may be due to traumatic injury, surgery or other causes for which shoulder was immobilized. <sup>4</sup>

Treatments advocated for adhesive capsulitis include physiotherapy interventions such as heat application, ultrasound, interferential treatment, stretching, exercises<sup>5</sup>. mobilization and manipulative treatment options that includes high velocity, low amplitude manipulation, end range mobilization, mid-range mobilization, Spencer technique and mobilization with movement of the shoulder. <sup>6</sup>

Spencer technique is an articular technique with seven different procedures used to treat

shoulder restriction caused by adhesive capsulitis. In this technique passive, smooth, rhythmic motion is designed to stretch contracted muscles, ligaments and capsules. Most of the force is applied at the end range of motion. This technique increases pain free range of motion through stretching the tissues, enhancing lymphatic flow and stimulating increased joint circulation.<sup>7</sup> Studies have shown the effect of Spencer technique on improving mobility and functional ability in subjects with frozen shoulder.<sup>8</sup>

Myofascial therapy can be defined as “the facilitation of mechanical, neural and psycho physiological adaptive potential as interfaced by the myofascial system”.<sup>9</sup> Fascia is located between the skin and the underlying structure of muscle and bone, it is a seamless web of connective tissue that covers and connects the muscles, organs, and skeletal structures in our body. Muscle and fascia are united forming the myofascial system. The purpose of deep myofascial release is to release restrictions (barriers) within the deeper layers of fascia. This is accomplished by a stretching of the muscular elastic components of the fascia, along with the cross links, and changing the viscosity of the ground substance of fascia.<sup>10</sup> Myofascial release is a collection of techniques used for the purpose of relieving soft tissue from an abnormal hold of a tight fascia.<sup>11</sup>

Aim of this study to analysis & understand Spencer technique on Pain and Range of motion in Periarthritis shoulder. To compare the effect of Spencer technique vs Myofascial release on Pain and Range of motion in Periarthritis shoulder.

## **2. Material and Methods**

### **Study Design**

Comparative study.

### **Study Setting**

Ameer Physiotherapy Centre, Madurai.

### **Study Duration:**

12 months

### **Study Sampling**

Simple random sampling.

### **Study Population**

In and around the Madurai district.

### **Study Sample**

Control group- 30 subjects

Experimental group-30 subjects

### **Criteria of selection**

#### **Inclusion criteria**

Stage 1-Freezing stage

Both sexes

BMI-20-30

Age-30-45years

Unilateral Periarthritis shoulder

#### **Exclusion criteria:**

Any psychological disorder

Unconscious patients

Disorientated patients

Non-co-operative patients

Other advanced grades of Periarthritis Shoulder

Metabolic diseases & Neurological diseases

### **Variables**

ROM-Abduction and extension and external rotation with Goniometer.

Pain-Visual Analogue Scale

### **Interventions:**

Spencer technique

Myofascial release

### **Materials & Tools**

Gel

Goniometer

Visual Analogue Scale

### **Procedure**

60 patients fulfilled the criteria of selection were selected and recruited for this study through simple random sampling method. Informed consent of participants was taken. Their demographic data including vitals were collected and documented.

Pre intervention variables of pain and ROM measurement were measured and documented. By simple random sampling method, from that 20 patients 10 patients were allotted as control group and remaining 10 patients were allotted as experimental group through the lottery method.

Control group were given Spencer technique for 12 sessions. Experimental group were given Myofascial release for 12 sessions. Intervention is given for 30 minutes, 4 sessions for per week for 3 weeks. Then post interventions variables of pain and ROM measurement were measured, collected and documented. Appropriate suitable statistical method for data analysis were selected and applied. Data analysis was done by Spss16.0 software version for windows were used.

## **3. Data Analysis and Results**

Shapiro Wilk test was used for checking normality distribution of data in groups and student t test was used for analysis between group variables.

Data analysis and result of this study shows that there is homogeneity of pre intervention variables of pain and ROM of abduction, extension external rotation. There is a statically significant improvement in pain and ROM of abduction, extension and external rotation in patients with p value <0.05 control group pre and post intervention values and also in experimental group with p value<0.05. While comparing both control and experimental group there is a statistically greater improvement in experimental group in which myofascial release is given to the patients in pain and ROM of abduction and extension and external rotation with p value<0.05.

**Table 1:** Comparison of pre intervention values of mean, SD and p value between control and experimental group with student t test (Source: Author).

No of Subjects	Variables	Control Group (Spencer Technique) Mean ± SD	Experimental Group (Myofascial Release) Mean ± SD	P value
60	Pain in VAS	8.68 ± 1.36	8.68 ± 1.34	0.286
	Shoulder Abduction ROM	68.0 ± 56.67	70.0 ± 55.56	0.278
	Shoulder Extension ROM	16.5 ± 33.61	18.0 ± 34.44	0.286
	Shoulder External Rotation ROM	29.0 ± 76.67	32.5 ± 73.61	0.189

**Table 2:** Comparison of post intervention values of mean, SD and p value between control and experimental group with student t test (Source: Author).

No of Subjects	Variables	Control Group (Spencer Technique) Mean ± SD	Experimental Group (Myofascial Release) Mean ± SD	P value
60	Pain in VAS	6.5 ± 2.06	2.1 ± 0.77	0.00001
	Shoulder Abduction ROM	78.0 ± 56.67	90.0 ± 38.99	0.00005
	Shoulder Extension ROM	22.0 ± 28.89	34.0 ± 26.67	0.00003
	Shoulder External Rotation ROM	41.5 ± 78.06	61.5 ± 133.61	0.00001



**Fig 1:** Performing Spencer technique (Source: Author).



**Fig 2:** Performing Myofascial release to patients (Source: Author).

**4. Discussion**

This study results shows that the myofascial release reduces the pain and improve the ROM of abduction and extension and external rotation. Because myofascial release relieve pain and increase the ROM by free the adhesion and

relaxing contracted soft tissue and muscles and also it stimulates the stretch reflex. Gopal Nambi S et al (2017) stated that both experimental and control groups are effective in the second stage of Frozen Shoulder to reduce pain and improve the Range of

motion. However, the subjects in the experimental group, who received Trigger Point therapy and Myofascial release showed better improvement in reducing pain and improving the ROM than the control group. In conclusion the treatment program consisting of Trigger Point therapy and Myofascial release may be more effective in the second stage of Frozen Shoulder to reduce pain and improve the Range of motion.<sup>12</sup>

**Christopher-Marc Gordon et al (2016) stated that MTR** resulted in clinically significant improvements in the primary measures of pain, objective mechanical tissue properties, and secondary measures in patients with chronic shoulder pain.<sup>13</sup> This studies results shows that the effect of myofascial release improve ROM and reduce the pain which results the outcome of Gentle and sustained stretching of myofascial release is believed to free adhesions and softens and lengthens the fascia allowing increased range of motion, flexibility and decreased pain.

## 5. Conclusion

It was concluded that there is statistically significant improvement in pain and ROM of abduction and extension and external rotation in Periarthritis shoulder patients of both control group (Spencer technique group) and experimental group (Myofascial release group). But there is a greater improvement in experimental group in which myofascial release is given to the patients.

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