

Physiotherapy Management of Frozen Shoulder Sinistra Case at Dr. Hardjono Ponorogo Hospital: Case Report

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ABSTRAK

Frozen shoulder atau *capsulitis adhesive* merupakan kondisi berupa sakit dan kaku yang terjadi pada bahu, biasanya keluhan ini disebabkan karena cedera yang relatif kecil tetapi penyebab yang sering terjadi belum jelas. Problematik fisiologi pada *frozen shoulder* yaitu hipomobilitas atau problem pola kapsuler sendi glenohumeralis. Adapun prevalensi terjadinya *frozen shoulder* di Indonesia pada populasi umum dilaporkan sekitar 2% dengan prevalensi 11% pada penderita diabetes. Tujuan Penelitian ini adalah untuk mengetahui manajemen fisioterapi yang sesuai pada pasien *frozen shoulder*. Dengan metode penelitian *case report* (studi kasus) yang dilakukan pada seorang pasien *frozen shoulder* di RSUD Dr. Hardjono Ponorogo yang dilakukan pada bulan Januari 2023. Hasil penelitian di dapatkan bahwa intervensi fisioterapi berupa *Shortwave diathermy* (SWD), *Myofascial release*, dan *active exercise* yang dilakukan selama 3 kali pertemuan menunjukkan hasil berupa penurunan nyeri, peningkatan lingkup gerak sendi, dan peningkatan kemampuan fungsional pasien.

Kata kunci: *Frozen Shoulder, Capsulitis adhesive, Shortwave diathermy, Myofascial release, active exercise*

ABSTRACT

Frozen shoulder or adhesive capsulitis is a condition in the form of pain and stiffness that occurs in the shoulder, usually, this complaint is caused by a relatively small injury but the causes that often occur are unclear. Physiological problems in frozen shoulders are hypomobility or glenohumeral joint capsular pattern problems. The prevalence of frozen shoulder in Indonesia in the general population is reported to be around 2% with a prevalence of 11% in diabetics. The purpose of this study was to determine the appropriate physiotherapy management in frozen shoulder patients. The case report research method (case study) was conducted on a frozen shoulder patient at Dr. Hardjono Ponorogo which was conducted in January 2023. The results of the study found that physiotherapy interventions in the form of shortwave diathermy (SWD), Myofascial release, and active exercise which were carried out for 3 meetings showed results in the form of reduced pain, increased range of motion of joints, and increased functional ability patient.

Keywords: *Frozen Shoulder, Capsulitis adhesive, Shortwave diathermy, Myofascial release, active exercise*

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INTRODUCTION

The increasingly dense population of Indonesia greatly affects human behavior patterns, where behavior patterns that always want to be fast-paced and practical in activities, especially the involvement of the use of upper

limbs. This can cause several disorders in the upper limbs, one of which is the shoulder joint. The disorder that often occurs in the shoulder is frozen shoulder. Frozen shoulder or adhesive capsulitis is a condition in the form of pain and

stiffness that occurs in the shoulder, usually, this complaint is caused by a relatively small injury but the cause is often unclear. A frozen shoulder is also often associated with other health problems such as diabetes mellitus (Teyhen, 2013).

The exact cause of the frozen shoulder is unknown. However, the shoulder joint is generally preceded by trauma or immobilization which can cause stiffness in the joint. The physiological problem in a frozen shoulder is hypomobility or capsular pattern problems in the glenohumeral joint. Hypomobility is caused by decreased synovial fluid volume in the joint, which causes increased pressure inside the joint during movement. Then the joint surface distance narrows due to the depletion of joint lubricant and an increase in the number of collagen fibers crossing and irregular arrangement. Irregular collagen fibers (tangles) will reduce the flexibility of the connective tissue and limit movement (Salim, 2014).

The prevalence of frozen shoulder in Indonesia in the general population is reported to be around 2% with a prevalence of 11% in people with diabetes. Frozen shoulders can affect both shoulders simultaneously or sequentially in as many as 16% of patients. An epidemiologically frozen shoulder can occur at the age of 40-65 years. Frozen shoulder affects more women than men, namely out of 60% about 2-5% of frozen shoulder cases (Purnomo & Abidin, 2019).

The treatment in this study was carried out in cases of left frozen shoulder with a physiotherapy treatment protocol. Physiotherapy is a health service provided by a physiotherapist to individuals or groups to optimize the quality of life by developing, maintaining and restoring movement and function that can potentially be disrupted due to aging, injury, disease, physical disorders and environmental factors throughout the life cycle through manual methods. , improvement of movement ability, use of equipment, function training, and communication (World Physiotherapy , 2019).

The physiotherapy treatment can include manual therapy, range of motion exercises, stretching and strengthening exercises, aerobic programs, and using modalities in the form of shortwave diathermy, microwave diathermy,

infra red, transcutaneous electrical nerve stimulation, and ultrasound. Thus, there is no doubt that physiotherapy treatment is a promising option for relieving pressure on the nerves that causes inflammation and pain. In the above exposure, researchers are interested in conducting research with the case report method to find out the appropriate physiotherapy management in patients with frozen shoulders at RSUD Dr. Hardjono Ponorogo.

RESEARCH METHODE

Case report using analytic descriptive method. The study was conducted at Dr. Harjono S Ponorogo Hospital for one month in January 2023. The data collection technique for subject approval is after an examination as a determination of the subject's entry into the criteria that will be given a physiotherapy program, then given an explanation of the purpose and purpose of the case report, and asking the subject's willingness to participate in the case report, then the researcher explains the course of the case report. Measurement of the success of the physiotherapy program in this case report uses the Shoulder Pain and Disability Index (SPADI) as a measure of the functional ability of the shoulder of patients experiencing Frozen Shoulder. The physiotherapy program provided is as follows :

1. Short Wave Diathermy (SWD), to help reduce pain. Performed 3 times a week for 10 minutes.
2. Myofascial Release, one of the modalities that can reduce tightness in m.upper trapezius, m.rhomboid, m.pectoralis major, m.latisimus dorsi. Performed 3 times a week for 10 times with 2 repetitions for 10-15 minutes.
3. Active Exercises, aimed at increasing the scope of joint motion. Performed 3 times a week 8 times in 3 repetitions within 10-15 minutes.

The physiotherapy program provided has short-term goals, namely reducing pain and reducing tightness in m.upper trapezius, m.rhomboid, m.pectoralis major, m.latissimus dorsi, and increasing the scope of joint motion. As for the long term, namely increasing, optimizing ability, and functionality to the maximum.

RESEARCH RESULTS

This study was conducted to determine the appropriate physiotherapy management in Frozen Shoulder Sinistra patients where in this study several physiotherapy interventions were given in the form of Short wave diathermy (SWD), Myofascial release, and active exercise in the form of mobilization with movement. To find out the appropriate physiotherapy management in frozen shoulder patients, a measuring instrument is needed to see the comparison between before giving intervention and after giving intervention and the data from the measuring instrument can be used as evaluation material. The measuring instruments used in data collection are the Numeric Rating Scale (NRS), Goniometer, and Shoulder Pain and Disability Index (SPADI). The following are the results of the research that has been done, namely :

a. Patient Characteristics

A woman with the initials S, 52 years old, is a patient at RSUD Dr. Harjono Ponorogo with a diagnosis of Frozen Shoulder Sinistra.

b. Numeric Rating Scale (NRS)

The Numeric Rating Scale (NRS) is a tool used in measuring pain, where there is a value of 0 (no pain) to 10 (unbearable pain) (Vitani, 2019). The following table of pre and post-intervention pain measurement results is presented in Table 1.

Table 1. Evaluate pain using the Numeric Rating Scale (NRS)

Measurement of Pain		
	Pre-Test	Post-Tes
Silent pain	0/10	0/10
Tenderness	2/10	1/10
Motion pain	8/10	7/10

Table 1 shows the results that from the pre-test to the post-test, patients did not complain of silent pain (at rest position). Measurement of tenderness in the pre-test and post-test obtained results where there was a decrease in pain levels, and in the measurement of motion pain in the pre-test and post-test, there was also a decrease in pain.

c. Range of Motion

Table 2. Range of Motion

Range of Motion		
Movement	Pre-Test	Post-Tes
Shoulder Flexion-Extension	S: 50°-0°-120°	S: 50°-0°-125°
Shoulder Abduction-Adduction	F: 100°-0°-50°	F: 110°-0°-55°
Shoulder Endorotation-Exorotation	R: 80°-0°-70°	R: 85°-0°-75°

Table 2 shows the measurement of the scope of joint motion performed using a Goniometer on the shoulder at the pre-test in the sagittal plane of flexion and extension of the shoulder [S: 50°-0°-120°], in the frontal abduction and adduction [F: 100°-0°-50°] and in the transverse plane of endorotation and exorotation of the shoulder [R: 80°-0°-70°]. After being given a physiotherapy program, measurements were taken again, and the post-test results in the sagittal plane became [S: 50°-0°-125°], in the field of [F: 110°-0°-55°] and in the transverse plane [R: 85°-0°-75°].

d. Shoulder Pain and Disability Index (SPADI)

Table 3. Shoulder Pain and Disability Index (SPADI)

Shoulder Pain and Disability Index Value	
Pre-test	Post-test
56.92%	50.77%

Table 3 shows the functional ability examination for the pre-test value (56.92%). After the physiotherapy program is given, the measurement is carried out again, the post-test value is obtained (50.77%) which means that there is an increase in functional ability.

e. Short Wave Diathermy (SWD)

Short Wave Diathermy (SWD) is one of the heat modalities in the superficial area that provides a specific local analgesic effect to reduce pain in one of the musculoskeletal problems, namely a frozen shoulder (Haque & Khan, 2022). The benefits of Short Wave Diathermy besides

reducing pain can also improve the metabolic

Puspitasari, 2017). The intensity with warm levels can cause an increase in local temperature and vasodilation so that blood flow increases and histamine will become smoother and stimulation of nociceptors is reduced or even lost. Other effects of Short Wave Diathermy (SWD) can increase tissue elasticity in preparation for exercise and cause muscle relaxation (Wahyuni, Nurdina, & Indasah, 2020).

f. Myofascial Release

Myofascial Release is an important technique in improving soft tissue dysfunction in relieving tightness and limitation (Gurudut, Welling, & Kudchadkar, 2019). Researchers have shown that myofascial release can effectively improve mechanical muscle properties in frozen shoulder patients where myofascial release can improve

system and reduce spasms (Purnomo, Abidin, &

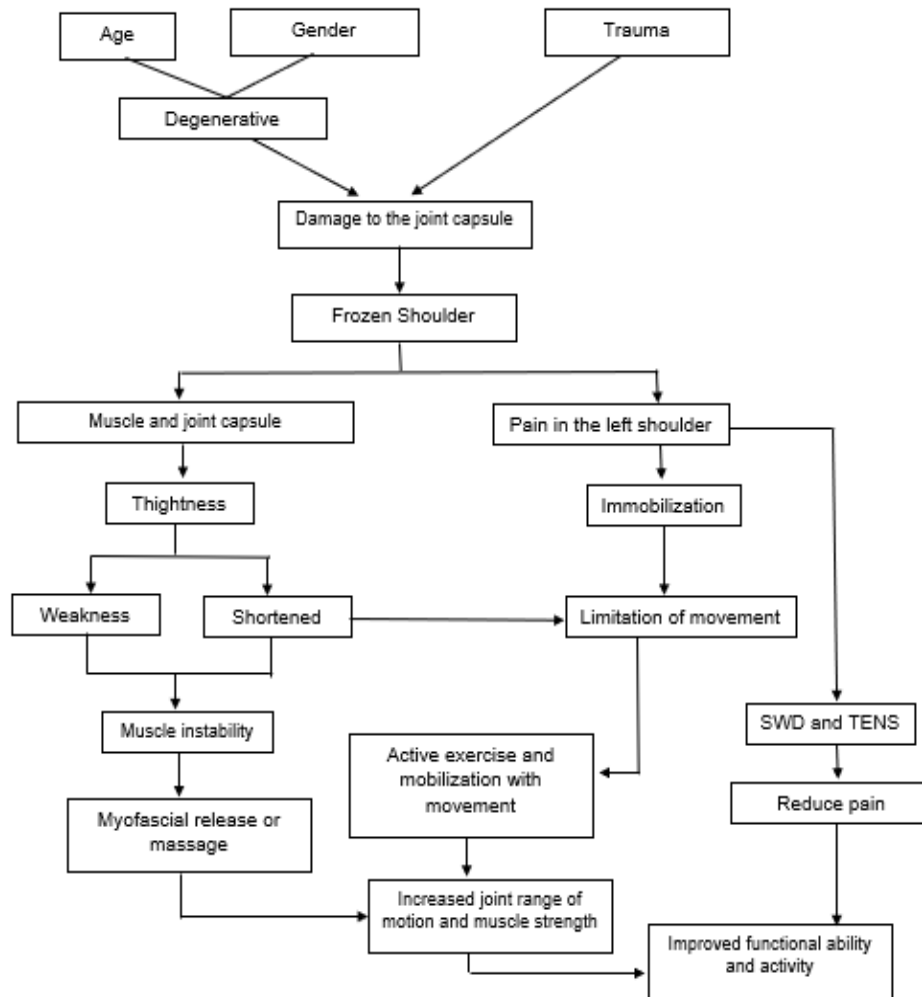
blood circulation and modulate motoneuron stimulation (Shih, Liao, & Lee, 2017).

g. Mobilization With Movement

Exercise therapy, an active and passive modality of physiotherapy, aims to increase the scope of joint motion and can improve muscle strength if done regularly and repeatedly (Purnomo D et al., 2017). One of the techniques, namely the Mobilization Movement, can be done actively or passively. Mobilization Movement by stretching soft tissues that experience tightness, restoring normal size to the joint capsule, normalizing scapulohumeral rhythm, and increasing the scope of joint motion with rolling and gliding movements (Nurhaliza, Sari, & Faridah, 2022).

Based on the data that has been obtained from the research, it can be summarized in the underlying process, as follows :

Picture 1. Underlying Process Frozen Shoulder



CONCLUSIONS

The results that have been obtained from case reports that have been carried out in physiotherapy programs for patients experiencing frozen shoulder show that the physiotherapy program provided is effective for reducing pain, and increasing the scope of joint motion to improve functional abilities. Implications from researchers, namely:

- a. For patients with a diagnosis of frozen shoulder, it is hoped that they can routinely do the exercises that have been given to maintain and maintain optimal conditions.
- b. For future researchers, it is important to improve skills in providing physiotherapy programs with a long time span to assess the long-term effects of the physiotherapy program provided.

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