
PHYSIOTHERAPY MANAGEMENT FOR SHOULDER IMPINGEMENT SYNDROME: A CASE REPORT

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Abstract

Introduction: Shoulder impingement is a symptom of pain arising from trauma, namely narrowing between the acromion and the humeral head resulting in inflammation or inflammation of the rotator cuff tendon (generally affecting the supraspinatus tendon). The typical symptom of this problem is a painful arc at 60 – 120 degrees of movement in the shoulder joint.

Case Presentation: A 76 year old woman who works as a housewife complains of pain in her right shoulder. The patient has been complaining of pain since 2 years ago, the pain reappeared in November 2022 after the patient did sports activities. Examinations carried out include examination of vital signs, inspection, palpation, specific examination, examination of basic movements, measurement of pain, examination of muscle strength, measurement of joint range of motion, and measurement of functional activity.

Management and Outcomes: The patient undergoes therapy at Esa Unggul Clinic Jakarta, 2 times a week. Interventions provided by physiotherapy include SWD, manual therapy, and exercise therapy

Conclusion: The physiotherapy program provided is in the form of SWD, manual therapy, and exercise therapy for Mrs. A was diagnosed with shoulder impingement syndrome and was treated 4 times and showed quite good results, namely decreased pain, increased range of motion, increased muscle strength, and increased functional ability.

Keyword: shoulder impingement syndrome, shoulder impingement management, physiotherapy

Introduction

In daily activities, some people who do activities or jobs that involve excessive shoulder movement can cause shoulder complaints. The shoulder joint is a joint that has very complex movements and can cause injury so that clinically, shoulder pain is often found (rotator cuff disease, impingement syndromes, shoulder instabilities) which can interfere with movement and function.(Dharmawan et al., 2018). The term shoulder impingement is a symptom of pain arising from trauma, namely a narrowing between the acromion and the head of the humerus causing inflammation or inflammation of the rotator cuff tendon (generally affecting the supraspinatus tendon) (Creech, 2022). The typical symptom of this problem is a painful arc at 60 – 120 degrees of movement in the shoulder joint(Singh et al., 2018). The majority of people complain of acute pain increasing during activities that require lifting the shoulders as far as the head and while sleeping on the side.

As much as 7% to 34% of the prevalence of shoulder pain is found with symptoms of a pinched shoulder(Vania & Barus, 2020). Shoulder impingement is classified into three rotator cuff phases. Phase I, found as many as 7% of patients aged less than 25 years with acute inflammation, swelling, and bleeding of the rotator cuff. Phase II, commonly seen in up to 11% of patients aged 25 to 40 years, is characterized by acute and progressive swelling and tendiitis of the rotator cuff. In phase III, there is mechanical disruption of the rotator cuff tendons and changes in the coracoacromial space or space with osteophytosis along the anterior acromion. In this phase, it is usually found in patients over 40 years of age as much as 12%.(Sciarretta et al., 2023).

In handling the problem of shoulder impingement syndrome, physiotherapy plays an important role in the healing process. The physiotherapy modalities that can be used are SWD (shortwave diathermy), manual therapy and exercise therapy. Shortwave diathermy is heating using a frequency of 27.12 MHz, with an intensity of 40-70 W and a time of 15 minutes(Yilmaz Kaysin et al., 2018). The manual therapy given is shoulder oscillation traction, and posterior glide mobilization. While the exercise therapy given is mall cat mobilizing exercise. This exercise therapy is carried out for 8 counts and 3 repetitions.

Case Presentation

Subject Examination

A 76 year old woman who works as a housewife complains of pain in her right shoulder. The patient complained of pain since 2 years ago, the pain reappeared November 2022 after the patient performs sports activities. Currently, pain is felt especially when doing activities that require raising the arm such as personal hygiene, picking up tall objects, and doing housework, especially when drying

clothes. Then the patient decided to address his complaint to the West Jakarta Esa Unggul Clinic and started therapy on November 11, 2022.

Physical Examination

Prior to the intervention stage, the physiotherapist examines the patient first. Examinations carried out include examination of vital signs, inspection, palpation, specific examination, examination of basic movements, measurement of pain, examination of muscle strength, measurement of joint range of motion, and measurement of functional activity.

Based on the results of vital signs measurements, blood pressure: 125/85 mmHg, pulse: 60/minute, temperature: 36 degrees Celsius, respiration: 20x/minute. On static inspection it was found that the right shoulder and left shoulder looked asymmetrical, dynamic inspection found that the patient's facial expression seemed to hold back pain when raising his arm towards the side of the head. After that, palpation examination found no pitting edema, no spasm, firm end feeling and there was tenderness in the acromion. In the specific examination, a positive Hawkins Kennedy test was carried out which showed crepitus and pain. Basic movement examinations carried out included active, passive, and isometric basic movement examinations. Examination of basic active and passive movements has limitations in abduction and flexion of the shoulder accompanied by pain to check for problems with the subacromial bursa, then palpation of the position of the handcuffs (adduction, extension, and internal rotation) to determine tendinitis in Supraspinatus obtained positive results (firm end feel). Furthermore, for isometric examination there is also pain, the patient can withstand weights with minimal resistance. Then, pain measurement using the NRS (Numeric Rating Scale) obtained a pain result of 1 when the patient was resting which indicated mild pain, obtained a pain result of 8 when moved which indicated severe pain, pain scored 6 when pressed which indicated moderate pain.

Management and Outcomes

The patient undergoes therapy at Esa Unggul Clinic Jakarta, 2 times a week. Interventions provided by physiotherapy include SWD, manual therapy, and exercise therapy.

table1. Intervention Plan

intervention	Dosage
SWD (Short Wave Diathermy)	2x/week Frequency: 27.12 MHz Intensity: 40W

intervention	Dosage
	Time: 15 minutes Type: Continuous
Manual therapy	2x/week 8x repetitions
Exercise Therapy Active Exercises: Mall cat mobilizing exercise	Active exercise 3 sets of 8 counts.

After the physiotherapy program was carried out at the Esa Unggul Clinic Jakarta with 4 interventions, the following results were obtained.

Results of Pain Measurement with NRS

After examining pain using the NRS (Numeric Rating Scale) the following results were obtained.

table2. Pain Measurement

	T1	T (end)
Static Pains	1	0
Pressure Pains	6	2
Motion Pains	8	4

From the results of pain measurements, the initial value of silent pain was 1, motion pain was 8, and tenderness was 6.

After the 4th physiotherapy intervention, the final result was silent pain 0, tenderness 2, and motion pain 4.

Results of Measuring Muscle Strength with MMT

The results of measuring muscle strength using the Manual Muscle Test are as follows:

table3. Muscle Strength Measurement

Region	Field of Motion	T1	T(last)
SHOULDER DX	flexion	4	5
	Extension	4	5
	Abduction	4	5
	Adduction	4	5
	Endorotation	4	5
	exorotation	4	5

The results of muscle strength measurements before and after the intervention showed an increase in shoulder flexion and abduction muscle strength from a value of 4 to 5.

Range Of Motion Measurement Results with Goniometer

The following are the results of measurements with the Goniometer

table4. Range of Motion Measurements

Region	T1	T(last)
SHOULDER	S: 50° - 0°-100°	S: 50° - 0°-115°
	F:110° - 0°-65°	F:115° - 0°-73°

Obtained the results of measuring the range of motion of the shoulder joint before and after being given Physiotherapy intervention, it was found that there was an increase in the range of motion of the mild joint from the value S =45° - 0°-100° to S: 50° - 0°-115° there is an increase in shoulder flexion by 15 degrees, and there is an increase in shoulder abduction by 8 degrees.

Results of Measurement of Functional Capability with SPADI

The following are the results of measuring functional ability using the Shoulder Pain and Disability Index

table5. Functional Disability Measurement

	T0	T(last)
TOTAL SCORE	50%	32%

The measurement results using the Shoulder Pain and Disability Index (SPADI) show a slight decrease in the total value which interprets an increase in functional ability.

Discussion

The physiotherapy program with shoulder impingement is still very difficult to do and it is possible that the complaints will reappear after it is done (Akhtar et al., 2020; Setiajaya, 2022). This study aims to determine the effect of providing therapeutic modalities, namely SWD and manual therapy, and exercise therapy can reduce pain, increase joint range of motion, and increase functional activity. In this study it was found that after the 4th therapy treatment, there were quite good changes, namely a reduction in pain scores, an increase in muscle strength, an increase in the range of motion of the joints, and an increase in functional activity. This is due to the provision of therapeutic modalities, namely SWD, manual therapy, and several exercise therapies that are carried out by patients in clinics and at home. The use of a warm-up modality with SWD given 2 times a week for 15 minutes in this

study was able to be effective in reducing pain and patients felt more comfortable moving. According to another study, (Yilmaz Kaysin et al., 2018). besides that according to SWD administration can increase blood flow, decrease joint viscosity and increase cell metabolism (Akhtar et al., 2020). In this study, MWM (mobilization with movement) was given using active motion from the patient by moving the arm in the direction of abduction or away from the body, then combined with a roll glide from the therapist passively on joints without pain when applied, so as to provide proprioceptive stimulation accompanied by an improvement in joint position which will form normal physiological movements of the scapulohumeral (Satpute et al., 2022). This research is in accordance with (Sharma et al., 2021) that can increase muscle activity, optimize latency time, and decrease functional activity score.

Conclusion

The physiotherapy program provided is in the form of SWD, manual therapy, and exercise therapy for Mrs. A was diagnosed with shoulder impingement syndrome and was treated 4 times and showed quite good results, namely decreased pain, increased range of motion, increased muscle strength, and increased functional ability. Researchers suggest the importance of conducting further research regarding physiotherapy interventions in shoulder impingement syndrome. This aims to find results that are more significant and can be accounted for.

Acknowledgments

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