MANAGEMENT PHYSIOTHERAPY FOR MYALGIA UPPER TRAPEZIUS CASE SITTING FOR A LONG TIME WORKING IN FRONT OF A LAPTOP DURING WORK FROM HOME: CASE REPORT

Alvian Willy Pradipta, Suryo Saputra Perdana, Nurraya Martha Debbita

[1] *Student of Physioterapy Departement, Faculty of Health Science, Universitas Muhammadiyah Surakarta*
[2] *Physioterapy Agency, Bagas Waras Hospital, Klaten. Central Java - Indonesia*

*Corresponding author:Alvian Willy Pradipta, Email: alvianwp@gmail.com

Abstract

Introduction: Work from Home during the pandemic covid-19 made almost all Indonesian students online learning activities at home. The use of laptops in a sitting position for too long causes Myalgia Upper Trapezius in students. A study says complaints of 86.4% in the neck and 76.2% in the shoulders during WFH. The purpose of writing is to find out the benefits of Short-Wave Diathermy, Myofascial Release and Stretching to reduce pain and increase joint range of motion.
Case Presentation: The patient used was a female student with complaints of pain and limitation of motion in the neck area and was chronic. Pain is caused by a static position sitting in front of the laptop for too long, causing limited neck movement during WFH.
Management and Outcome: Short Wave Diathermy, Myofascial Release and Stretching can reduce pain intensity and increase joint range of motion in women with Myalgia Upper Trapezius.
Discussion: After 3 weeks physiotherapy, the results were evaluated 3 times. Get the results of reducing silent pain with VAS evaluation 1: 4.5 evaluation 3: 1.1 tenderness evaluation 1: 5.1 evaluation 3: 2.1 and motion pain evaluation 1: 5.3 evaluation 3: 2.5. An increase in the range of motion neck of the joint also occurs in movement with Goniometer, Flexion evaluation 1: 260 evaluation 3: 380, Extension evaluation 1: 300 evaluation 3: 450, Side right flexion evaluation 1: 380 evaluation 3: 440, Side left flexion evaluation 1: 200 evaluation 3: 440, Right rotation evaluation 1: 400 evaluation 3: 480, Left rotation evaluation 1: 300 evaluation 3: 470. Application of Short-Wave Diathermy, Myofascial Release and Stretching can reduce pain and increase the range of motion of joints in patients with Upper Trapezius Myalgia.
Conclusion: Physiotherapy management in the Myalgia Upper Trapezius after carrying out the program for 3 weeks with the intensity of 3 times the threat in 1 week reduce pain and increase ring of motion. Ergonomic position and consistency patient during physiotherapy with SWD, Myofascial release and stretching is very helpful in-patient recovery.

Keyword: Myalgia Upper Trapezius, Short Wave Diathermy, Myofascial Release, Stretching.

Introduction

Pandemic Covid-19 has forced us all to do more activities at home or better known as Work from Home (WFH). During WFH, most of us work using laptops or gadgets for longer periods of time. In a survey Hasiholan (2020) conducted with a total of 1,083 respondents, there are reports of subjective complaints of musculoskeletal disorders. Total respondents, 86.4% said they had complaints in the neck, 76.2% in the shoulders, and 75.9% in the lower back. These complaints stem from differences in the duration and posture of respondents in using laptops when doing activities from home (Hasiholan, 2020).

Upper trapezius myalgia is a common musculoskeletal complaint characterized by pain, stiffness, and tightness in the upper trapezius muscle. It is often work-related and caused by prolonged static and repetitive work tasks (Kayleigh et al., 2017). During this pandemic, all activities are online. Using laptops and gadgets for a long time and static sitting position can cause Myalgia Upper Trapezius.

Physiotherapy has many modalities for Myalgia Upper Trapezius, including the use of SWD or Short-Wave Diathermy. Using SWD is effective in reducing musculoskeletal pain in the short term, providing relief, and improving quality of life (Mesiero et al., 2019). Application Myofascial Release could increase flexibility and reduce muscle pain (Beardsley & Skarabot, 2015). Low intensity stretching can reduce pain effects on muscle and recovery muscle function after activity (Ashok & Karthi, 2017).

Based on the background, we can see that sitting statically for too long in front of the laptop can cause pain and tension around the neck and shoulder area. The purpose of the paper is to see how effective SWD, Myofascial Release, and Stretching are in reducing the value of pain and tension in Upper Trapezius Myalgia sufferers who works by sitting statically for too long in front of the laptop.

Case Presentation

This 20-year-old female student patient came for the treatment of her shoulder pain. That pain is felt in the right shoulder area spread to the back of the right neck area. Description of the intensity of pain felt 5 out of 10, accompanied by stiffness and tension in the neck when looking at the left. This problem began 8 months ago since online learning activities started. Firstly, it was just a little pain but was ignored. Over time the pain got worse every pain and limited movement of the neck. Finally, patient decided to go to the hospital for treatment. The pain got worse when tired, but not to the point of feeling dizzy. Pain killer ointment was given to relieve tension but only gave a perverted effect. Didn't have a family history of experiencing pain same and there isn't a history

of previous trauma.

Inspection describes a forward head position, asymmetrical shoulders, active cervical range of motion limited to flexion, extension, right lateral flexion, left lateral flexion, left rotation, and right rotation. These movements cause discomfort in the shoulder when moved. They're not complaints when test performed compression. When a sitting position, static palpation showed a pain point in the right upper trapezius area. Dynamic palpation was done during left lateral flexion and rotation, the neck has limited movement and increased tension in the right upper trapezius.

Management and Outcome

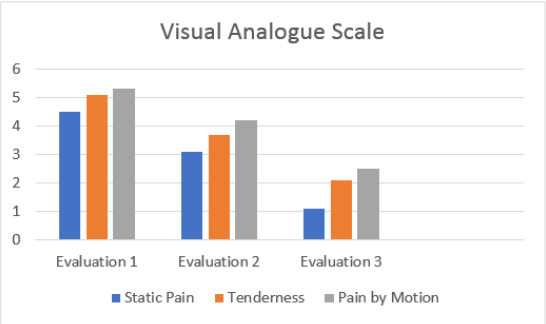
Patients do the treatment of Shortwave Diathermy (SWD), Myofascial Release, and Stretching three times a week for 3 weeks. SWD was performed on the right area shoulder patient. In a study conducted by (Masiero et al., 2020) in the application of SWD, every therapy session was during for 15-20 minutes, continue with a frequency of 4 or 8 MHz and heat intensity between 40 and 60W with the main result being pain reduction.

The Myofascial Release technique used is Direct Myofascial Release. The implementation of DMR is carried out by giving a stretch duration to the fascia where there is a pain point, then pressure is applied to the trigger point area. The direct pressure on the skin until it reaches deep tissue to release tissue adhesions to the fascia (Desai & Jeswani, 2018). Friction movements on Myofascial Release are also given by the direction of the muscle fibers, effective in eliminating trigger points, allowing muscle fibers to move more normally, increasing blood flow through tissues, and decreasing nerve and muscle sensitivity (Kaprail et al., 2019). Implementation of the release of muscles exercises for 30-60 seconds 5 repetitions. This was done 3 times a week for 2 weeks can have a relaxing effect, that can reduce the pressure of muscles that experience hardening (Ashok & Karthi, 2018)

Static stretching performed for 20 seconds with 3 repetitions to the patient's shoulder area resulted in a decrease in muscle-tendon stiffness (Takeuchi & Nakamura, 2020). Intensity 30%-40% can reduce pain and increase ROM because attracts can a reduction in muscle-tendon stiffness. (Kataura et al., 2017).

Results of pain examination with Visual Analogue Scale (VAS)

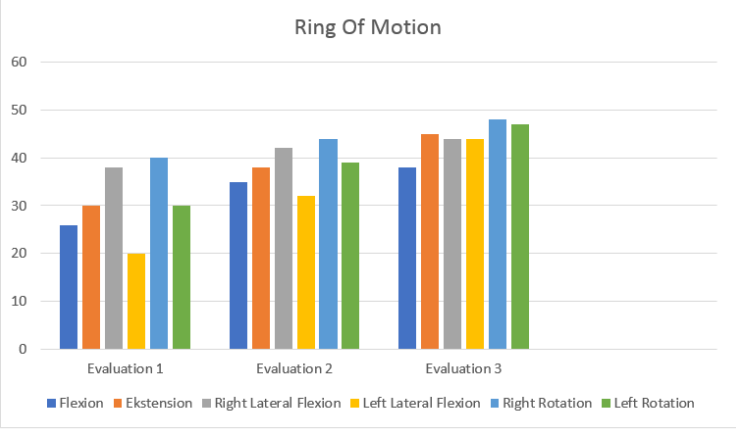
Pain assessment in the case of Myalgia Upper Trapezius was using VAS with a value of 0 cm (no pain) to 10 cm (very painful).



The graph shows a decrease in the value of static pain, tenderness, and pain by motion starting from Evaluation 1 – Evaluation 3 in Myalgia Upper Trapezius patients after given MWD, Myofascial Release, and Stretching.

Ring Of Motion

Measurement of joint range of motion was using a goniometer. Joint movement examined is the motion of the neck, where the preliminary check patient complained of difficulty in moving the neck during activities.



The Graph shows an increase in the degree of neck movement. Starting from evaluation 1 – evaluation 3 there was an increase in ROM on the Movement of Flexion, Extension, Right Lateral Flexion, Left Lateral Flexion, Right Rotation, and Left Rotation. A gradual increase to the degree of neck movement approaching the normal range of ROM in the neck. An ergonomic position must be applied when working. After 3 weeks of treatment, the patient was being discharged.

Discussion

Short Wave Diathermy (SWD)

SWD provides a warming effect, increasing the activity of cutaneous thermoreceptors which inhibit the direct effect on the transmission of pain sensation at the spinal cord level. Stimulation of thermoreceptors causes vasodilation, increased blood flow, and potentially reducing pain caused by ischemia. Ischemia also decreases as a result of reduced muscle spasm compresses blood vessels. Vasodilation produced by thermotherapy can also accelerate local pain recovery to normal levels by accelerating tissue healing (Kartadinata & Indriastuti, 2012).

Myofascial Release

Myofascial release causes active hyperemia or increased blood flow in the trigger point area, then a spinal reflex mechanism appears which causes a decrease in muscle spasm (Ashok & Karthi, 2018). Furthermore, physiologically, the release of biochemicals from the body such as histamine and serotonin will cause vasodilation and permeability of blood vessels which mechanically rearrange the structure of the muscle tissue. The implementation of the myofascial release technique that focuses on pressure, can lengthen myofascial aims to release tissue adhesions and reduce pain through gate control theory, improve fascial tissue fluid quality, tissue flexibility, and joint function (Stillerman et al., 2016).

Stretching

The principle of stretching on muscles that experience spasms. Muscle fiber shortening occurs because myofilaments overlap each other. At the time of stretching withholding for a few seconds in the longitudinal muscle position the muscle fiber structure, especially the sarcomeres are stretched because the overlapping myofilaments will decrease and automatically cause the muscle fiber structure to become elongated. With the lengthening of the muscle fiber structure, the spasm can be reduced. And then, stretching reduces spasms through muscle proprioceptors or muscle spindles that are activated when stretching occurs. Muscle spindles are responsible for regulating signals to the brain if there is a sudden and excessive change in muscle length and tone, the muscle spindle will contract as a defense to prevent injury. Therefore, when doing stretching, hold for a while to provide adaptation to the muscle spindles to changes in the length of the muscles that we give. So the signal from the brain to contract the muscles is reduced. With minimal muscle contraction during stretching, muscle fibers lengthen, and muscle spasm is reduced. Based on physiology, fatigue accumulation of lactic acid can result in a decrease in the work of the muscles affect fatigue. Stretching can help relax muscles so they are more flexible in moving due to increased oxygen supply, and increase the ability to move muscles and joints in all areas of movement (Yuliato & Erayanti. 2014; Apostolopoulos et al., 2018).

Conclusion

After doing physiotherapy for 3 weeks with a patient named Ms. L with complaints of pain-tension and limitation of neck movement using SWD, Myofascial Release, and Stretching in the right shoulder area, the following results were obtained:

1. Using Shortwave Diathermy, Myofascial Release and stretching can reduce pain in Myalgia upper trapezius patients.
2. Using Shortwave Diathermy, Myofascial Release and stretching can increase neck mobilization and ring of motion in Myalgia upper trapezius patients.
3. Using Shortwave Diathermy, Myofascial Release and stretching can reduce Spasm in Myalgia upper trapezius patients.

We provide some advice to patients including Attention to the ergonomic position of the body when working sitting in front of the laptop, rest if you feel tired, do stretching during breaks after work.

Acknowledgments

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