

THE EFFECTIVENESS OF THERAPEUTIC MASSAGE IN TREATING BACK PAIN: A CASE REPORT

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A – study design, B – data collection, C – statistical analysis, D – interpretation of data, E – manuscript preparation, F – literature review, G – sourcing of funding

ABSTRACT

Background: Spinal pain is a common problem in developed societies. In recent years, more and more people have been found to complain about spinal pain. Therefore, it would seem that back pain remains a major problem, a burden for the patient, the family, and the economy. If the pain is severe, it can cause difficulties with performing even the most basic activities of everyday life. The quest for methods to reduce this complaint may contribute to improving the quality of life for many people. One of the more commonly chosen forms of therapy for back pain is therapeutic massage. Massage therapy has a long history with back pain treatment and has been found to produce various beneficial effects that are associated with endorphin release. It can also enhance local blood flow which could increase the efficacy of local pain mediators.

Aim of the study: The aim of the study was to evaluate the effectiveness of therapeutic massage in the treatment of back pain in a 69-year-old woman.

Case report: The subject was a 69-year-old woman reporting pain in the cervical and lumbar segments of the spine, BH = 154.2 cm, BM = 90.0 kg, BMI = 37.85 k/m² (obesity), waist circumference = 114.1, hip circumference = 118.2 cm, WHR = 0.96 (android obesity). The 11-point VAS scale was used in the assessment of her pain, where 0 means no pain, and 10 unbearable pain. The Laitinen Pain Scale (LPS) is a questionnaire which examines the nature of pain in four areas: the intensity of the pain, how frequently the pain occurs, the application of painkillers, and limiting motor activity. Before starting the therapy and immediately after the end of the therapy, researchers conducted a physical examination which included taking measurements of spinal mobility using the SFTR method. Before the first treatment, researchers conducted an interview was conducted about the need for the massage. 10 massages were performed after 60 minutes each, and were done every other day. Researchers performed a pain assessment with the VAS scale both before and after the procedures, which ultimately showed a reduction of the symptoms in the cervical and lumbar sections. The LPS scale showed a reduction of symptoms in three areas. The mobility of the spine had likewise increased.

Conclusions: After a series of therapeutic massage treatments, there was a reduction in pain and improved spinal mobility.

KEYWORDS: back pain, therapeutic massage

BACKGROUND

Spinal pain is one of the most frequently reported diseases worldwide [1]. Between 75 and 85% of the population experience it at least once throughout their lives [2]. According to research conducted by the Central Statistical Office (GUS) in 2014, every fifth adult person in Poland complains of lower back pain, and every eight adult person reports neck pain [3].

Back pain may be associated with degenerative changes. Symptoms may increase with repetitive movements of flexion and extension of the torso and physical exertion. In many patients, degenerative changes are the only visible cause of pain [4,5].

From a clinical point of view, the severity of pain during exercise is the main symptom. A characteristic beginning of such a state is the extensive, moderate,

and constant sensation of pain. This is accompanied by stiffness and limited mobility of the spine, especially during the extension movement. Muscle weakness and fasciitis are also observed, as well as gentle bending of the lumbar spine [2].

Correct treatment of spinal pain should be comprehensive, and should seek to address not only the cause of the disorder, but also its effects. The ideal treatment would include individualized kinesitherapy complemented by physical therapy. Often, a massage is used as a supplement to the therapy [6].

Massage owes its popularity to the beneficial effects on the whole body. It causes many local and general changes. Local effect is characterized by dilatation of blood and lymph vessels, thusly improving tissue metabolism. The general action consists of acting on the whole organism through the nervous and endocrine systems [7].

The main purpose of the massage is the normalization of muscle tone, which increases the painless range of motion in the joint [7–10]. The result of the massage is also the improvement of blood supply to the tissues. This allows for quicker disposal of accumulated metabolic products and faster regeneration. The reduction of pain sensation is also possible due to the stimulation of receptors located in the skin and skeletal muscles [11]. Thanks to its effectiveness, massage is widely used in the treatment of spinal pain [12,13].

THE AIM OF THE STUDY

The aim of the study was to evaluate the effectiveness of therapeutic massage on the reported back pain of a 69-year-old woman.

CASE REPORT

Patient: a woman, AGE= 69 years old, BH = 154.2 cm, BM = 90.0 kg, BMI = 37.85 k/m² (obesity), waist circumference = 114.1, hip circumference = 118.2 cm, WHR = 0.96 (android obesity).

Through an interview the patient was shown to be complaining of spinal pain in the cervical and lumbar sections. The cervical pain is caused by a prolonged working time in a position with raised upper limbs, carrying heavy objects. Pain in the lumbar region is caused by prolonged working time in a forward sloping position, during prolonged walking and sitting. Moreover, the pain is connected with staying in one position longer and with the trunk in a bent position. The patient is currently retired and she is independent. She lives alone in an apartment block on the third floor without a lift. She practices moderate physical activity in the form of gardening and recreational cycling.

The X-ray image of her cervical segment showed the appearance of initial degenerative changes at the C4-C7 levels. An X-ray image of the lumbar region showed the onset of degenerative deformity and common signs of osteoporosis.

Lumbar densitometry showed a change in bone density that qualified the patient as being on the borderline of osteopenia and osteoporosis.

On the basis of blood test, it was found that there was no acute inflammation in the patient's body that would be a contraindication to therapeutic massage treatments.

Prior to the study, the participant was informed about the principles and purpose of the study and expressed her written consent to participate in the study. For conducting the research, the team obtained the approval of the Bioethical Commission at the Opole Medical School in Opole (Nr 15/2017).

Therapy

10 therapeutic massage treatments were performed every other day. Each treatment lasted 60 minutes, and included a massage of the back and the neck.

The therapeutic massage was performed with techniques such as stroking with the hair and under the hair, superficial stroking, deep stroking, friction, spiral friction, longitudinal kneading, transverse kneading, rolling, and vibration.

The massage included the superficial muscles of the back, the latissimus dorsi muscle and trapezius muscle, the rhomboid major muscle, the rhomboid minor muscle and deep muscles of the back, including the splenius capitis muscle, splenius cervicis muscle, sacrospinalis muscle, transversospinalis muscle, interspinales muscle, intertransverse muscle, levatores costarum muscle, and lumbar fascia. The massage also included the muscles of the shoulder girdle, including the supraspinatus muscle, infraspinatus muscle, teres minor muscle, teres major muscle, and subscapularis muscle.

Researchers interviewed the subject about her need for a massage before the first treatment took place. Researchers also assessed her spinal pain both before starting therapy and immediately after the end of therapy. The mobility of her spine was also assessed using the SFTR method. In the assessment of her pain, the 11-point VAS scale was used, where 0 means no pain, and 10 unbearable pain. The Laitinen Pain Scale is a questionnaire which evaluates the nature of pain in four areas, including the intensity of pain, the frequency of the pain's occurrence, the application of painkillers, limiting motor activity. The patient assesses each of these factors on a 5-degree scale in the range from 0 to 4, where:

- 0 means: without pain, does not occur, no help ,
- 1 means: mild, periodical, does not occur, without medicine, no help,
- 2 means: strong, frequent, big doses, demanding partial help,
- 3 means: very strong, very frequent, permanent, big doses, demanding partial help
- 4 means: not sustainable, continuous pain, permanently very big doses, demanding full help.

RESULTS

After a series of therapeutic massage treatments, it was found, using the VAS scale, to have reduced pain in the cervical and lumbar segments of the spine (Tab. 1).

Table 1. Comparison of the test results with the VAS pain scale before and after therapy.

The sections of the spine (vertebral column)	The VAS pain	
	Before therapy	After therapy
Cervical spine	4	2
Lumbar spine	6	4,5

After performing the massage treatments, it was found that the symptoms were reduced in three of the four areas of the LPS scale (Tab. 2).

Table 2. Comparison of the results of the Laitinen Pain Scale before and after therapy.

LPS scale component	The severity of pain	
	Before therapy	After therapy
Intensity of pain	2,5	2
Frequency of pain occurrence	2	2
Application of painkillers	1	1
Limiting motor activity	2	1

These measurements showed an improvement in the mobility of individual sections of the spine. The exceptions are the mobility of the cervical spine during the extension movement in the frontal plane, lateral flexion in the left direction, and the rotation of the right and left (Tab. 3).

Table 3. Comparison of the results of the spinal mobility measurement using the SFTR method before and after the therapy.

The sections of the spine (vertebral column)	Plane	Before therapy	After therapy
Cervical spine	S (Sagittal)	4-0-1,5	4-0-1,7
	F (Frontal)	1-0-0,4	1-0-0,7
	R (Rotation)	4-0-3,5	4-0-3,5
Thoracic spine	S (Sagittal)	0-1	0-1,2
Lumbar spine	S (Sagittal)	1,5-0-2	1,6-0-2,3
Thoracic-lumbar spine	F (Frontal)	4-0-3,8	4,5-0-4
	R (Rotation)	1,7-0-1,9	2-0-2,2
Whole spine	S (Sagittal)	0-5	0-5,4

DISCUSSION

Lower back pain is one of the most frequently reported illnesses worldwide. According to Milanowa, it affects between 75% and 85% of the population at least once throughout their lives [14].

In the treatment of back pain, improvement treatment, i.e. physiotherapy, which consists of kinesith-

erapy, physiotherapy and massage, plays a key role. Educating the patient can also help prevent a worsening of the symptoms and minimize the risk of their occurrence [15].

The purpose of the study was to evaluate the effects of therapeutic massage on pain reduction. Based on our own research, after using a series of therapeutic massage treatments, it was demonstrated using the VAS scale that the patient's sensation of pain was reduced. We also conducted a pain assessment using the Laitinen Pain Scale, and found the symptoms there were likewise reduced. The patient noticed improvements in three of the four areas of the above scale. These areas are the intensity of ailments, which decreased by half a point, the frequency of occurrence of the ailments and limitation of mobility, in which the patient noticed improvement by one point in each. Only the use of painkillers has not changed. After the therapy, researchers also observed a marked improvement in the mobility of the spine.

In the Ćwirlej et al. studies, after applying the massage, all patients were less likely to suffer from pain, and in half of them the pain was completely eliminated. Movement was also improved [7].

In other studies, Ćwirlej et al. found that pain had gone down (from 5.21 to 1.1 on the VAS scale) and mobility of the spine had improved among 53 patients after therapeutic massage [11].

In Wilk's studies, after a series of therapeutic massages in the cervical and lumbar sections of the spine, pain was likewise reduced [10].

The Swedish Massage and Acupressure in Rehabilitation of Patients with Low Back Pain study confirmed that both methods demonstrated a significant decrease in the pain's intensity, an improvement in the patient's quality of life and an increase in physical activity. Increased segmental mobility of the spine was also observed in all patients [16].

Allen's research confirms that massage is non-invasive, generally available, can produce results at the right time, and is more cost-effective than most other treatments for chronic lower back pain. Patients usually got good results from just a few therapeutic massage sessions. There are studies demonstrating that only a single massage or two produced positive results. Different patients experience different results because there are many factors contributing to each individual case, including the cause of the dysfunction, its duration, the degree of pain and disability, and any psychological effects [17].

CONCLUSIONS

After completing a series of therapeutic massage treatments, there was a reduction in pain and an increased mobility of the spine. Further study is encouraged to determine the efficacy of massage therapy as a readily accessible, lower-cost alternative to more invasive therapies.

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