ISSN: 3049-7361

Case Report

Journal of Clinical Surgery and Anesthesia

The Effect of Endorphin Massage with Jasmine Oil on Severe Back Pain Experienced in the Third Trimester of Pregnancy: A Case Study

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Received: August 26, 2024; **Accepted:** September 10, 2024; **Published:** September 14, 2024

ABSTRACT

Back pain is a common complication during the final trimester of pregnancy. This pain, which begins in the early stages, intensifies in the third trimester due to the enlargement of the uterus and pressure on the skeletal system. One method to alleviate back pain is endorphin massage.

Objective: To evaluate the effect of endorphin massage using jasmine oil on a primiparous pregnant woman at the 30th gestational week experiencing back pain.

Method: This clinical case study involved applying endorphin massage combined with jasmine oil to the entire back and sacral region of a primiparous woman in her third trimester for a total of 6 sessions over 12 days, every other day, each lasting 20 minutes. Data were collected using the Demographic Characteristics Form and the Brief Pain Inventory (BPI), and the scores were compared.

Results: Analysis of the 1st and 6th applications of the massage showed a decrease in the woman's severe back pain over time. The non-pharmacological approach was well-received by the pregnant woman, enhancing communication between the midwife and herself. The woman reported taking the recommendations more seriously.

Conclusion: The study observed that endorphin massage with aromatherapy reduced severe back pain and positively affected emotional well-being. It is recommended as a safe, non-invasive, easy-to-apply, and cost-effective method in midwifery care. Further evidence-based research is suggested to generalize the benefits of jasmine oil back massage for pregnant women.

Keywords: Severe Back Pain in Pregnancy, Endorphin Massage, Jasmine Oil, Non-Pharmacological

Introductıon

Structural and functional changes during pregnancy can negatively affect a woman's health and quality of life. Back pain is one of the most common complaints during the third trimester of pregnancy. As the uterus enlarges and the fetus grows in the third trimester, back pain results from the body's center of gravity tilting forward, leading to increased lumbar curvature (lordosis) and shortened spinal muscles, which causes tension and pain in the back and ligaments. Pain is often felt towards the end of pregnancy. Additionally, the increased production of the relaxin hormone during pregnancy causes pelvic bones to loosen in preparation for childbirth, leading to more back pain. Pain can also be felt around the sacroiliac joints between the lumbar and gluteal regions. Studies report that 59%, 70%, and 60% of pregnant women experience back pain, with about 50% reporting low or pelvic girdle pain during pregnancy, and 25% continuing to experience pain one year after delivery [1-3]. Many women prefer complementary therapies with fewer side effects over medication for managing pain. Non-pharmacological methods are perceived as safer and more effective for both maternal and fetal health.

Various non-pharmacological methods, including reflexology, cupping therapy, exercise, aromatherapy, and massage, are used to reduce back pain during pregnancy. Endorphin massage is one such effective method [4]. This technique is gaining interest due to its potential therapeutic benefits. Research suggests that it can trigger the release of endorphins, the body's natural painkillers, and promote the production of oxytocin, associated with relaxation and bonding. Endorphin massage benefits are thought to occur through the stimulation of spinal nerves,

Citation: Fatma Baskın, Hulya Tosun. The Effect of Endorphin Massage with Jasmine Oil on Severe Back Pain Experienced in the Third Trimester of Pregnancy: A Case Study. J Clin Surg Anesth. 2024. 2(3): 1-4. DOI: doi.org/10.61440/JCSA.2024.v2.16

leading to increased endorphin release and pain relief. This method can also help regulate heart rate and blood pressure and promote relaxation. Higher levels of beta-endorphins in the blood after endorphin massage can positively impact the fetus by reducing exposure to maternal stress hormones. Regular massage during pregnancy has been shown to reduce back pain, anxiety, and improve sleep. Combining endorphin massage with aromatherapy may enhance its effectiveness. Aromatherapy is an important non-pharmacological approach that reduces pain intensity by activating mental processes, distracting from pain, and stimulating endorphin release [5,6]. Although there are studies on aromatherapy combined with endorphin massage for the back and lumbosacral region, there are no studies in Turkey specifically examining jasmine oil combined with endorphin massage for back pain during pregnancy. This case study aims to explore the effects of manual endorphin massage with jasmine oil on the back and lumbosacral region in the third trimester.

Case Presentation

The case involves MC, a 30-year-old, 161 cm tall, 60 kg call center worker who works remotely from home. MC has had Hashimoto's thyroiditis since the age of 21 and uses Levothyroxine 75 mg daily. She has no other known diseases. Since the early stages of pregnancy, she has experienced mild back pain, which intensified in the third trimester. Concerned about harming the baby, M.Ç. avoided painkillers and frequently used heat application, but reported no pain relief. This case study involved applying endorphin massage with jasmine aromatherapy oil to the back and lumbosacral region of M.Ç., a 30-year-old primiparous woman at 30 weeks gestation, to evaluate its effect on pain reduction.

Materials and Methods

This case study was conducted at a pregnant women's class under the Tavşanlı District Health Directorate from March 26 to April 6. Data were collected using an Individual Diagnosis Form, Brief Pain Inventory (BPI), and Numerical Pain Scale (0=no pain, 10=unbearable pain). The benefits of endorphin massage and jasmine oil were explained to the participant, and any allergies were checked. Written consent was obtained.

Procedure: A dilution was prepared by adding 6 drops of jasmine oil (Jasminum officinale) to 1 teaspoon of carrier oil (olive oil). Ratfish recommends a dilution ratio of 1.0%-5.0% for oils used in the second and third trimesters, meaning 1-7 drops of essential oil per teaspoon of carrier oil. Jasmine oil is absorbed up to 10% after topical application, reaching peak absorption around 20 minutes and decreasing to nearly zero after 90 minutes. A 5% dilution ratio is recommended for Jasminum officinale.

The mixture was stored in a dark bottle away from sunlight. An allergy test was conducted by applying a drop of dilution to the inner wrist. The participant was seated on a cushion in the pregnant women's class and supported by a Pilates ball. A small amount of oil was applied, and the massage began with vibration and pressure on the sacral area using the palm. This was followed by rhythmic strokes using the fingertips, from the shoulders to the neck and elbows. Each endorphin massage session lasted 20 minutes. The massage was performed by the midwife in a warm, comfortable, and well-ventilated environment.

Findings

The pregnant participant expressed physical and emotional relief after the massage. She stated, "I feel that this massage has positive effects. Everything physically became more challenging in the later stages of pregnancy. Sitting, standing up, even sleeping became very significant support. I highly recommend it for pregnant women to avoid pain and achieve relaxation. After the second session, my pain started to decrease. The massage brought me peace, rested me, and made me feel relaxed and eased.

Table 1: Brief pain invertory

Variables	Before Massage Average	After Massage Average
Worst pain in the last 24 hours	5	3
Lightest pain in the last 24 hours	1	1
Average pain in the last 24 hours	4	2
Current average pain level	3	1
Influence of general activities due to pain in the last 24 hours	3	2
Influence of emotional state due to pain in the last 24 hours	5	2
Influence of walking due to pain in the last 24 hours	2	2
Influence of deep breathing and coughing exercises due to pain in the last 24 hours	5	4
Influence of relationships with other people due to pain in the last 24 hours	3	2
Influence of sleeping due to pain in the last 24 hours	3	2
Influence of enjoying life due to pain in the last 24 hours	4	2

The patient had a history of lower back pain. Before the massage, their pain scores were: worst pain 5, least pain 1, average pain 4, current pain 3, impact on activities 3, emotional state 5, ability to walk 2, deep breathing and coughing exercises 5, relationships with others 3, sleep 3, and enjoyment of life 4.

After the massage, the scores improved: worst pain decreased to 3, average pain to 2, current pain to 1, impact on activities to 2, emotional state to 2, relationships to 2, sleep to 2, and enjoyment of life to 2. The scores for least pain, ability to walk, and deep breathing exercises remained the same

Discussion

Studies on endorphin massage suggest that this technique holds promising therapeutic potential in healthcare. By promoting the release of endorphins and oxytocin, it has been found to alleviate pain, provide relaxation, and support overall well-being.

Examining the patient's pain experiences and impacts on daily activities before and after the massage in this study, significant improvements in pain management were observed. After the massage, the patient's worst pain score and average pain levels decreased noticeably, and positive developments were noted in emotional state, sleep quality, and enjoyment of life. These findings indicate that the massage contributes positively to the patient's overall quality of life and pain management.

In this study, jasmine oil endorphin massage reduced back pain in pregnant women. This result aligns with a study conducted in Iran using rose oil endorphin massage. Shirazi et al.'s randomized controlled trial involving 120 pregnant women with pregnancy-related back pain found that topical rose oil significantly reduced back pain intensity in the intervention group compared to the control group [7].

A study by Amellia and Utami, which examined the benefits of prenatal aromatherapy endorphin massage for reducing back and lumbar pain during pregnancy, showed that the method increased beta-endorphin formation and reduced back pain [8].

Munir et al. created intervention and control groups of 15 participants each, finding that the number of individuals with severe pain in the endorphin massage group dropped from 8 to 1, whereas in the control group, it increased from 9 to 10 [9]. These findings are consistent with Argo Cahyani and Winarsih's research, where 3 out of 15 individuals in the massage group continued to experience pain, while the number of those with severe pain in the control group rose from 2 to 10 [10]. Similar results were observed in Hartati et al.'s study with 34 pregnant women and Haflah and Safitri's research on back pain in the third trimester [11,12]. Both studies recorded significant decreases in pain scores in the endorphin massage groups.

According to Eka Putri Saudia and Nila Kencana Sari, endorphin massage was found to be more effective than hot compresses in reducing back pain in pregnant women during the third trimester. In the hot compress group, the average pain score decreased from 0.7333 to 0.594, whereas in the endorphin massage group, it decreased from 1.933 to 0.884 [13].

Podungge's study found that endorphin massage was more effective than pregnancy exercises in reducing back pain in pregnant women. The average pain score in the massage group decreased from 4.91 to 2.64, while in the exercise group, it decreased from 4.68 to 3.27. This effect of endorphin massage is attributed to its interaction with opioid receptors in the brain and spinal cord [14].

In another study comparing endorphin massage with the non-pharmacological method of breathing techniques, endorphin massage was found to be superior in reducing pain severity in 32 participants experiencing back pain during the third trimester [15].

The studies indicate that endorphin massage in experimental groups resulted in significant reductions in pain intensity, relaxation, and satisfaction with the massage. These results, supported by various research findings, suggest that endorphin massage is an effective method for alleviating pain and achieving psychological relaxation [16-22].

The main limitations of our study, inherent to all case studies, include a small sample size, lack of a control group, and the limited generalizability of the results to other patients.

Conclusion

The findings of this case study indicate that endorphin massage, accompanied by jasmine oil, effectively reduces severe lower back pain experienced during the third trimester of pregnancy. It was observed that after the massage, both physical and emotional relaxation were achieved, pain intensity decreased, and there was a significant improvement in overall quality of life. These results support the idea that non-pharmacological methods can play an important role in pain management during pregnancy. Endorphin massage combined with aromatherapy applications such as jasmine oil can be considered an effective, safe, and low-cost alternative for women suffering from back pain during pregnancy. Such approaches encourage further research into pain management during pregnancy and their widespread use by healthcare professionals.

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