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Oxytocin Massage on Pain Levels and Breast Milk Production in Post Cesarean Section (Case Study)

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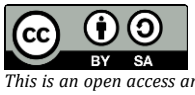

ABSTRACT

Post cesarean section (CS) is a physiological condition that occurs in women who give birth via cesarean section or surgery. The changes include pain, uterine involution, breastfeeding (ASI) production, and psychological adjustments.. According to research, 20-80% of post CS patients experience moderate to severe pain that is inadequately managed. In Indonesia, this occurs at a rate of 30-80%. The effective breastfeeding rate in Indonesia is 55.5%, which does not yet meet the national target of 80%. Given the magnitude of these issues, the author aims to describe the influence of oxytocin massage application on pain levels and ASI production in post CS patients through this scientific work. The methodology used is a case study involving patients Mrs. L on their first day post CS. The intervention was applied from the second to the third day post CS, twice daily. The results of this application show that oxytocin massage can reduce pain from a scale of 7 to 3 and increase breast milk production, with a cumulative increase from no milk output to more than 50 cc.. It is hoped that the application of evidence-based nursing: oxytocin massage can be implemented as a standard intervention for post CS patients in hospitals.

INTRODUCTION

The postpartum period is the time after childbirth that involves physiological and psychological changes for the mother to return to her pre-pregnancy condition (Lopez-Gonzalez & Kopparapu, 2022). It begins with the delivery of the baby and placenta and extends until the physiological recovery of various organ systems that underwent changes during pregnancy, typically taking about four to six weeks (Chauhan & Tadi, 2022). A cesarean section, or C-section, refers to a condition where a patient has undergone both surgery and childbirth through the abdomen, involving changes in body shape, organ systems, and psychological aspects (Reeder et al., 2015).

The most common issue that arises post-cesarean section surgery is discomfort in the form of pain. Pain experienced by patients after a cesarean section does not only originate from the incision wound but also occurs due to the response to uterine involution, where the uterus contracts to return to its original size (Kintu et al., 2019).

The condition related to post-cesarean pain remains a concern because, over the last four decades, it has been found that 20-80% of post-operative patients experience pain, yet they do not receive adequate management (Hussen et al., 2022). While According to (Ahmad & Taufik, 2021) around 30%-80% of post-cesarean patients experience moderate to severe pain due to postoperative pain management that often does not meet standard practices. The issue related to breastfeeding practices currently still requires attention. As of 2022, based on global collective breastfeeding data by UNICEF, in Indonesia, approximately 58.2% of newborns receive breast milk, and only 50.7% of infants aged zero to six months are exclusively breastfed, which falls short of the WHO target of 70% breastfeeding prevalence by 2030 (UNICEF, 2022).

Inadequate and improper management of postoperative pain can lead to significant patient morbidity, slowing down their recovery and ability to return to daily activities. This contrasts sharply with

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the early recovery expected to support patients in caring for their newborns shortly after the surgical procedure (Kintu et al., 2019).

Through the active role of nurses, competent pain management in post-cesarean patients is expected to enable early mobilization, allowing patients to be pain-free and capable of caring for their newborns effectively, including providing effective breastfeeding (Ahmad & Taufik, 2021). Some actions that nurses can take to support pain management in newly postpartum mothers include using non-pharmacological methods such as warm compresses, distraction and relaxation techniques, as well as massage therapies like endorphin massage and oxytocin massage (Dewi Ekasari & Adimayanti, 2022; Febiantri & Machmudah, 2021).

METHOD

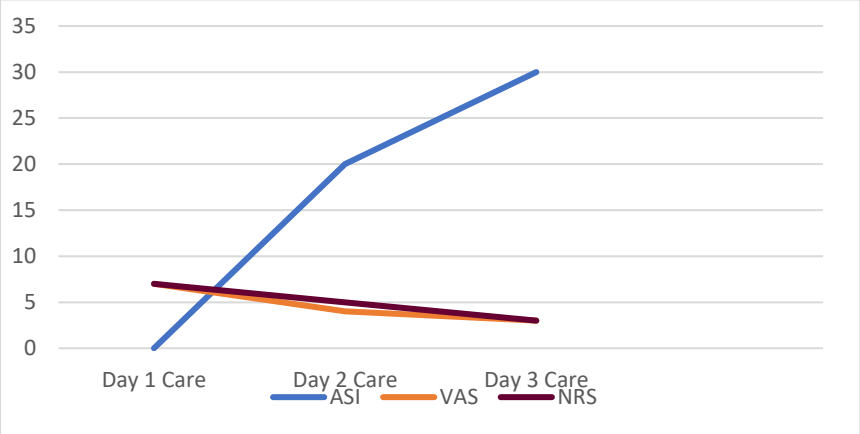
The methodology used is a case study involving patients on the first day post-Caesarean section. The instruments used in this case study include a towel, warm water, and olive oil for administering oxytocin massage. The sample consisted of 2 post-Caesarean mothers. The intervention was carried out on the second day post-Caesarean. The implementation and data collection were conducted from June 3-8, 2024, at Fatmawati Hospital.

Before the intervention, the researcher obtained informed consent regarding the application of the intervention and received approval from the patients. For evaluation, instruments such as the Visual Analog Scale (VAS) and the Numeric Rating Scale (NRS) were used to assess the patients' pain levels. A manual breast pump was used to measure breast milk production.

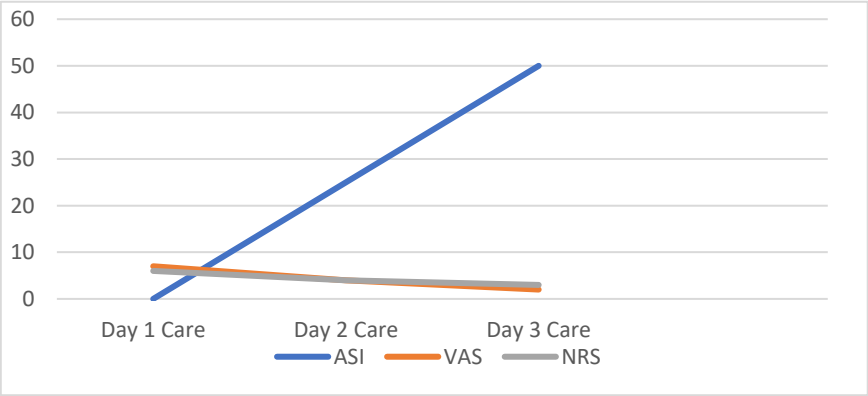
The procedure involved administering an oxytocin massage. Before starting the massage, pain was assessed using VAS and NRS, and breast milk was pumped for 15 minutes. The patient was then positioned leaning forward with her breasts hanging down. The massage was applied on both sides of the spine with circular movements from the top down to the level of the 5th and 6th ribs. Then, the massage was repeated using the fists with the thumbs rotating outward. Each movement was performed three times. After the massage was completed, approximately 15 minutes were allocated for breast milk pumping, and the patient was reassessed for pain and the volume of breast milk successfully pumped. The massage was performed twice daily, with each session lasting 15-20 minutes.

RESULT

The application of oxytocin massage was carried out for two days during the treatment, with a frequency of twice a day, in the morning and evening. Before the application, pain scale assessments were conducted using the NRS and VAS scales, and breast milk was pumped for 15 minutes to measure milk production. At the initial assessment, the NRS pain scale was 7 and the VAS pain scale was 7, with no breast milk output. The results of the oxytocin massage showed differences in pain levels and breast milk production before and after the oxytocin massage. Changes in pain levels and breast milk production for Mrs. L can be seen in Graphs 1 and 2 below:



Graps 1 Results of Oxytocin Massage on Mrs. M



Grafik 2 Result of Oxytocin Massage on Mrs. L

Based on this graph, it was found that there was a significant decrease in the pain scale for Mrs. L, where the NRS pain scale decreased from 7 to 3. The breast milk volume, which previously showed no production, increased with an accumulation of up to 50cc. All these changes occurred after administering oxytocin massage for 2 days with a frequency of twice a day. The pain scale based on VAS previously was 7 and decreased to 3 after oxytocin massage. The results of oxytocin massage application on Mrs. M, as a comparison patient, are depicted in Graph 2 below:

Berdasarkan grafik ini, perubahan yang ditemukan Ny. M di mana skala nyeri NRS adalah 7 dan turun menjadi skala 3. Pada skala nyeri berdasarkan VAS sebelumnya adalah 7 dan turun menjadi skala 3. Volume ASI yang sebelumnya tidak terlihat produksi ASI, mengalami peningkatan dengan akumulasi hingga 50cc.

DISCUSSION

The assessment results indicate that Mrs. L, aged 33, is hospitalized with a post-cesarean section due to Placenta Previa. Currently, the patient complains of pain at the surgical incision site and describes cramping in the abdomen similar to contractions during labor. The pain intensifies with movement, described as stabbing, localized around the surgical incision and lower abdomen, rated at a scale of 7. The pain is intermittent and decreases with rest. The assessment findings are consistent with research conducted by (Hussen et al., 2022), which found that out of 216 women who underwent cesarean section (CS), 89.8% experienced postoperative pain ranging from moderate to severe. Within the first 12 hours after surgery, 91.7% reported experiencing moderate to severe pain, and 84.2% experienced severe pain within 24 hours. Post-cesarean pain is primarily caused by surgical incisions in the abdomen, which is inherent to the CS procedure.

The nursing problem identified in this diagnosis is acute pain associated with the consequences of incisions made in the abdomen and other abdominal cavities during the process of cesarean section surgery (Kintu et al., 2019). The process of uterine involution involves the shrinking of the uterine wall back to its original size through contractions, which can cause afterpains (Desmarnita & Larasati, 2021). Another physiological response is the presence of breast milk ready in the alveoli of the breast; however, if not properly suckled, it can lead to breast engorgement or pain in postpartum mothers, termed ineffective breastfeeding (Cunningham et al., 2022).

One part of the therapeutic interventions that nurses perform in this plan is to support the fulfillment of comfort needs through relaxation techniques such as positioning, back massage, and relaxation exercises in hopes the patient can adapted with the pain their suffers on (Wilkinson, 2016). The administration of oxytocin massage in this plan is part of therapeutic actions to enhance patient comfort needs reduced by post-cesarean section pain. This is supported by research stating that oxytocin massage is a technique applied to the spine that induces relaxation effects, stimulating the mother's brain to lower adrenaline levels and increase oxytocin hormone production, which affects adequate uterine contractions (Wijaya et al., 2018).

In the initial stage, gentle movements and light pressure are used to warm up the muscles and increase blood circulation. This aims to stimulate the lymphatic system and improve tissue oxygenation, thereby reducing the pain felt by the patient (Sri Wahyuningsih et al., 2022). During the main massage, techniques such as muscle management, point pressure, and circular movements in the targeted body areas are used with the aim of stimulating oxytocin production by increasing pleasant physical contact, reducing stress, and improving hormonal balance. This can also enhance the sense of closeness and emotional

bonding between mother and baby, as well as support the physical and emotional recovery process after childbirth (Geary et al., 2023).

The results obtained after the application of oxytocin massage indicate a significant reduction in the pain experienced by the patient. The initial pain scales, NRS and VAS, were both rated at 7, and after the fourth intervention, both the NRS and VAS pain scales decreased to 3. This finding is also supported by research conducted by several experts (Hayati & Hasian, 2022) Among 14 respondents who received oxytocin massage, there was a reduction in the average pain score from 4.93 to 2.21 after receiving the massage, as measured by the NRS pain scale. The statistical test results from this study, using the paired t-test, showed a p-value of 0.0001, indicating that $P < 0.05$. This means that there is an effect of oxytocin massage on pain levels in post-Caesarean mothers (Hayati & Hasian, 2022). The use of the NRS scale is intended to be easily understood by patients, where they rate their pain intensity by selecting a number from 0 to 10. However, this may not capture the nuances of pain as detailed as the VAS. Therefore, the VAS scale is used to capture the experience and nuances of pain according to what the patient is experiencing (Bielewicz et al., 2022).

Regarding breast milk production, a recorded increase was observed. Initially, there was no breast milk production, but after the fourth intervention, there was an accumulation of 50cc of breast milk. This finding is consistent with research conducted by Dağli & Çelik (2022) Based on the measurement of breast milk after each session, it was found that in the control group, the amount of breast milk produced by respondents ranged from 12-78 ml. In the music intervention group, the range was 10-89 ml, and in the oxytocin massage group, it ranged from 12-90 ml. During the oxytocin massage, the massage along the spine from the ribs to the scapula accelerates the activity of the parasympathetic nerves. The massage in the sacral area from the spinal cord stimulates the posterior pituitary gland to release oxytocin, which in turn stimulates contractions in the smooth muscle cells surrounding the lactiferous ducts of the mammary glands. This increases the contractility of the mammary glands, thereby enhancing the volume of breast milk produced. (Mintaningtyas and Isnaini 2022).

CONCLUSION

The results of applying evidence-based nursing show that oxytocin massage can reduce pain levels and increase breast milk production. Oxytocin massage stimulates the release of oxytocin in the body, which acts antagonistically to adrenaline hormones, thereby reducing patient tension and anxiety. The massage also enhances blood flow to traumatized areas, increasing oxygen and nutrient supply to tissues, gradually decreasing pain responses.

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